Surgimap®

The Physician Driven Imaging Solution®

A Nemaris, Inc. Product

PACS Connection

For Surgimap version 2.2.15 and higher

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Overview

This guide explains how to connect the Surgimap software to a hospital PACS system to:

- ❖ Push images (export/send) from PACS into Surgimap
- ❖ Pull images (query/retrieve) into Surgimap from PACS

SURGIMAP
IP Address
AE Title
Port

Export from PACS to push images into Surgimap

Query/Retrieve in Surgimap to pull images from PACS

PACS
IP Address
AE Title
Port
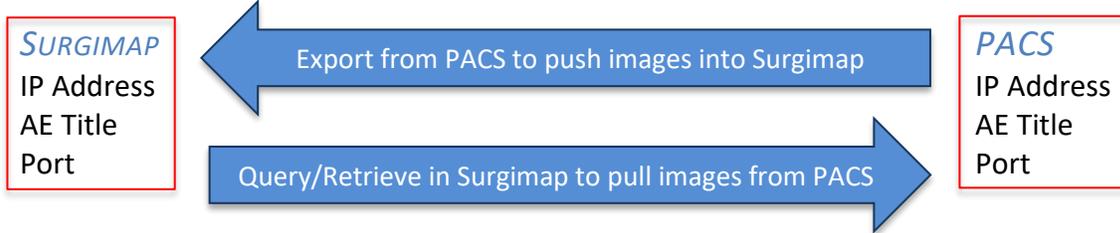
At a Glance

Connect to PACS on the DICOM Nodes tab within Surgimap Settings:

- ❖ To import via PACS export, add new Local IP Address, AE Title, and Port at bottom
- ❖ To import via query/retrieve from PACS, add Local IP Address, AE Title, and Port at bottom **and** enter Hospital IP Address, AE Title, and Port at top
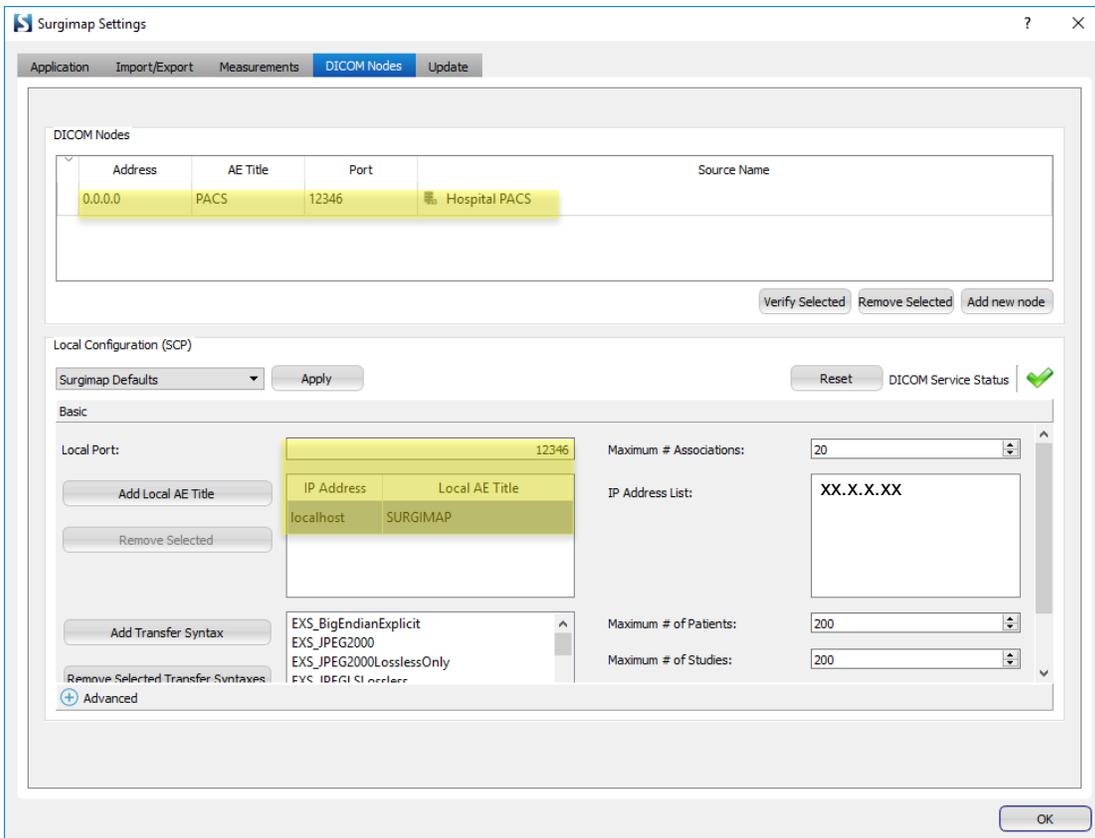
Pushing images from PACS into Surgimap

Warning: Any PACS system connection with Surgimap must be on a computer/device with a **static IP address**. Most hospital PACS are configured to only send DICOM images to hospital computers.

1. GATHER THE APPROPRIATE INFORMATION FOR YOUR LOCAL CONFIGURATION

Please collect the following information for the computer you would like to connect between Surgimap and PACS to fill out the chart below:

AE Title	
Port Number	
IP Address (es)	

- ❖ **AE Title**: Please contact your hospital's PACS administrator to assign you the appropriate AE Title. We suggest a convention such as the room/office number or end user name e.g., SURGIMAP_RM317, SURGIMAP_DR_SAMPLE. Extensions such as Win or Mac help if the user has multiple computers.
- ❖ **Port Number & IP Address:** Your computer's personal IP Address can be found within the Surgimap software:
    - a. Open Surgimap
    - b. Click on the Settings icon at top right
    - c. Go to the DICOM Nodes tab
    - d. Find your Port Number (unless another Port Number is specified, use '12346') and static IP Address (top of the IP Address List on right side, ex: xx.x.x.xx). If multiple IP addresses are displayed, then submit all to your PACS admin.
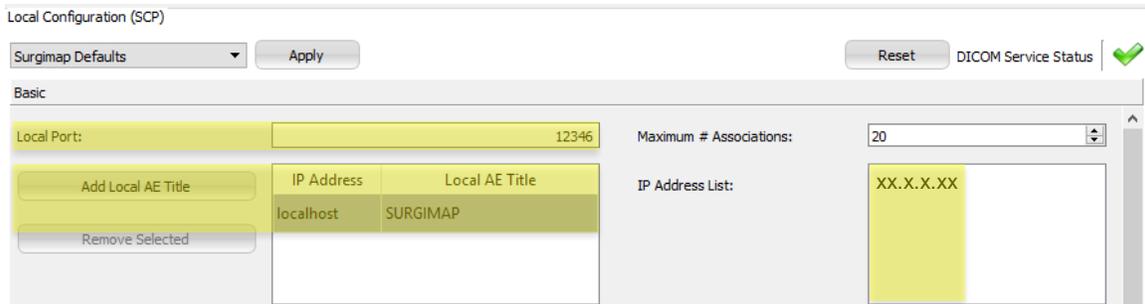
2. CONTACT YOUR HOSPITAL PACS ADMINISTRATOR WITH INFORMATION IN STEP #1

- ❖ Supply your PACS administrator with the information from step #1 to create this node for you in PACS.
- ❖ When they confirm node creation is complete, make sure they inform you of your personal AE Title to enter into Surgimap in Step #3.

3. USE YOUR AE TITLE TO CONNECT WITH PACS

❖ Follow steps a-c in Step #1 above to get to DICOM Nodes tab.
❖ Within the Basic section type '12346' as the Local Port Number unless told otherwise by your PACS Administrator.
❖ Press the 'Add Local AE Title' button.
❖ Enter the AE Title provided to you by your PACS administrator in the dialogue box and press "OK".

4. CLOSE SURGIMAP THEN LOG BACK IN TO USE THE PACS EXPORT FUNCTION.

❖ Within PACS, export a patient to your Surgimap DICOM destination.
❖ Within Surgimap, go to the Patients tab of the Database screen to locate the exported patient.

Note: Surgimap must be open during the PACS export/send process in order to receive the patient images.

Pulling images into Surgimap from PACS (Query/Retrieve)

Warning: Any PACS system connection with Surgimap must be on a computer/device with a **static IP address**. Most hospital PACS are configured to only send DICOM images to hospital computers.

FOLLOW STEPS #1-3 FROM PREVIOUS SECTION

4. CREATE A NODE FOR YOUR PACS NETWORK IN SURGIMAP

Note: For this step, you will need to consult your PACS administrator for the PACS network static IP Address, AE Title, & Port Number.

❖ Click on "Add new node"

❖ Enter the following information into the 'Node parameters' dialogue box and press "OK" (**Note**: Most of this information will be given to you by your PACS admin):

  ❖ **IP Address:** for your PACS network that you received from your PACS Admin *(not your computer's IP address)*
  ❖ **AE Title:** provided by your PACS Admin *(not your Local AE Title)*
  ❖ **Port Number:** provided by your PACS Admin; if they do not specify one, use default value '12346'
  ❖ **Source Name:** create a recognizable name to help you locate the node on the Import screen's finder/file tree
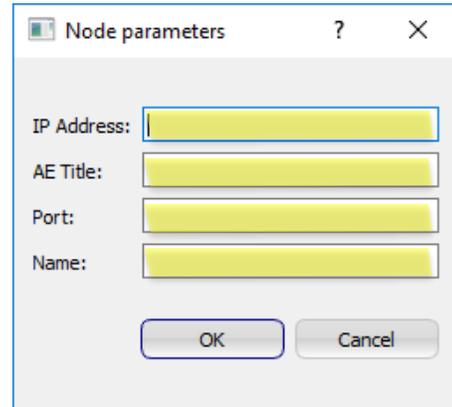
5. *CLOSE SURGIMAP THEN LOG BACK IN TO IMPORT VIA QUERY/RETRIEVE. SEE NEXT SECTION.*

Importing DICOMS via Query/Retrieve

1. *GO TO YOUR IMPORT SCREEN AND LOCATE THE 'SOURCE NAME' OF YOUR CONNECTED PACS SYSTEM (E.G. DCM4CHEE)*
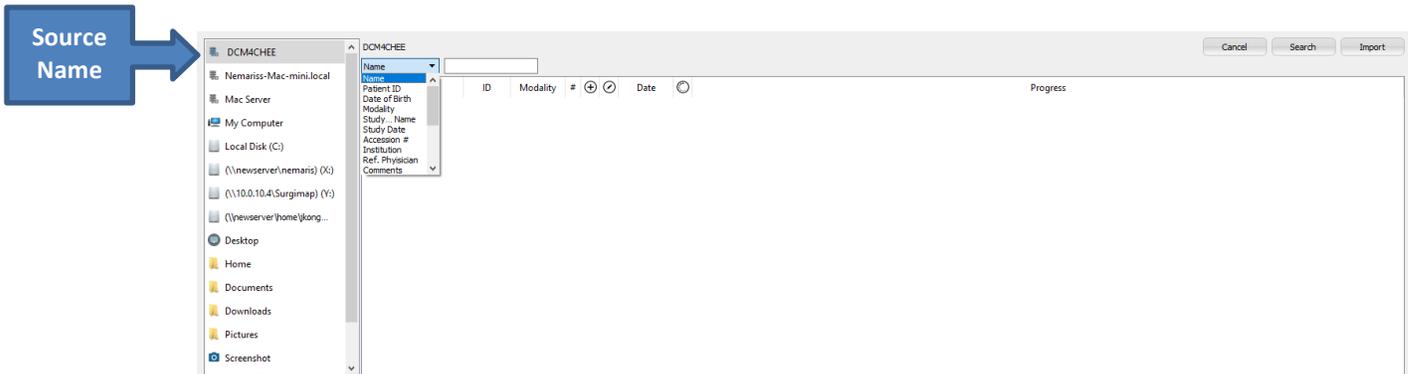
2. *SELECT A VARIABLE FROM THE DROP-DOWN SELECTOR TO SEARCH FOR PATIENT IMAGES. ENTER INFORMATION IN THE SEARCH FIELD & CLICK THE 'SEARCH' BUTTON.*
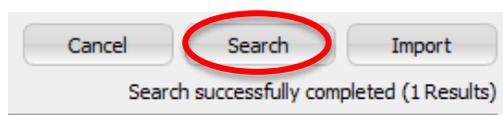
3. *ONCE RESULTS ARE DISPLAYED IN THE IMPORT PANEL, CLICK TO HIGHLIGHT THE PATIENT, STUDIES, OR SERIES YOU WISH TO IMPORT AND CLICK THE 'IMPORT' BUTTON.*
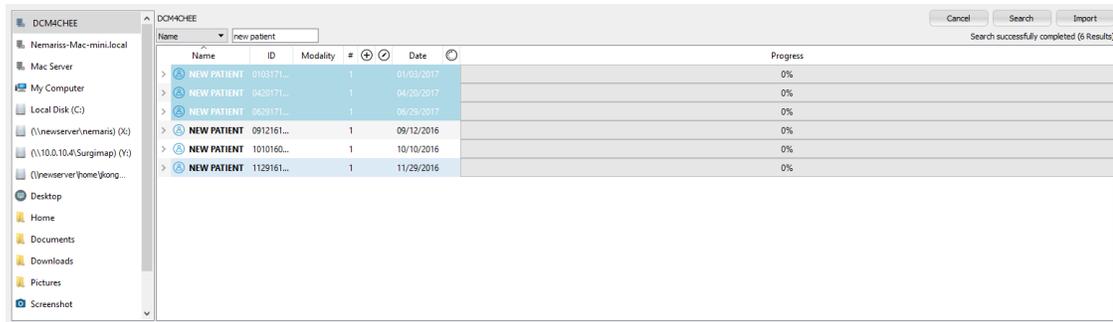
❖ You can also right click or double-finger click (Mac) on a patient and select 'Import'

4. *CLICKING 'IMPORT' WILL QUEUE THE DATA TRANSFER. YOU WILL SEE THE PROGRESS OF YOUR IMPORT SELECTION ON THE 'PROGRESS COLUMN'.*

Note: If your 'Progress' bar is stuck on 'queued' or 'pending' and does not finish the import (no green checkmark), there is an error with the PACS/Surgimap connection setup. Please go back and double-check all the settings you created. In order for the connection to be established, all <u>IP Addresses</u>, <u>AE Titles</u>, and <u>Port Numbers</u> in Surgimap must match those in PACS *verbatim*, and vice versa.

Queued → **Pending** → **Completed**
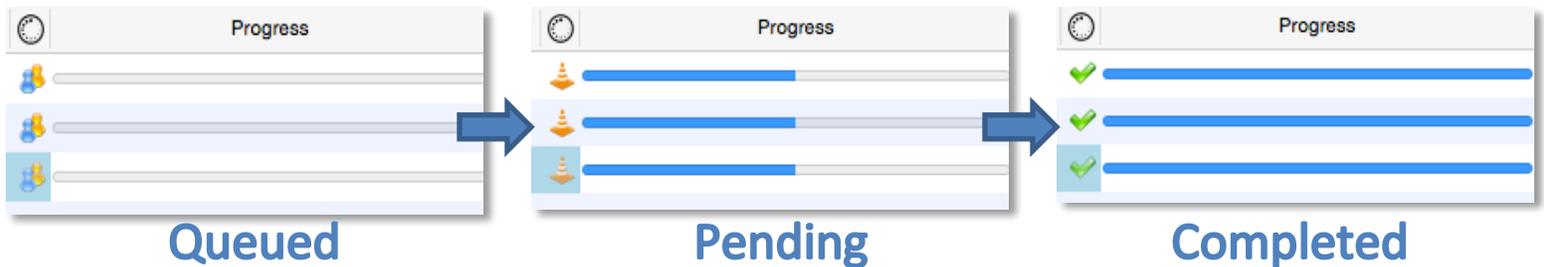
Using PACS link through VPN connection

When connecting to the hospital PACS using a VPN connection, you will need to make sure that the user picks up the same static IP address as assigned. Please note, this configuration is on a Windows Domain based server.

1. *Hospital IT Admin creates a NEW GROUP IN ACTIVE DIRECTORY SUCH AS VPNUSER1 AND ADD YOUR ACTIVE DIRECTORY USER(S) TO THAT GROUP.*
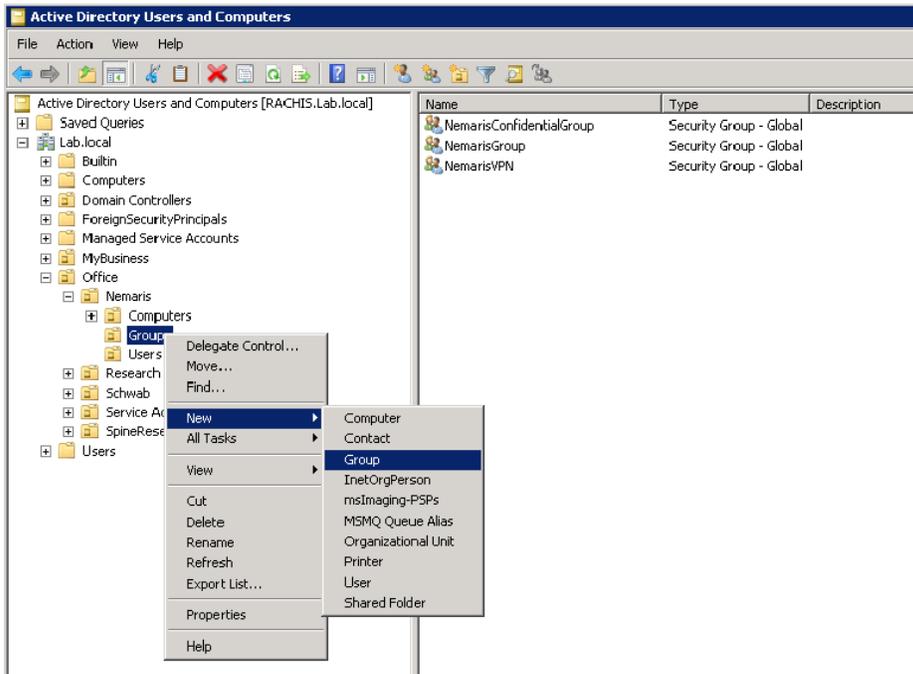
2. *OPEN THE RRAS CONSOLE, RIGHT CLICK ON REMOTE ACCESS LOGGING & POLICIES AND CHOOSE LAUNCH NPS.*
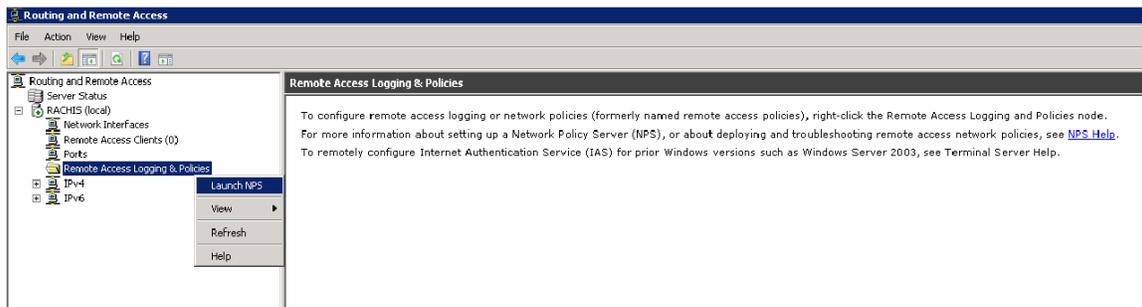
3. IN THE NETWORK POLICY SERVER CONSOLE, RIGHT-CLICK ON NETWORK POLICIES, AND SELECT NEW
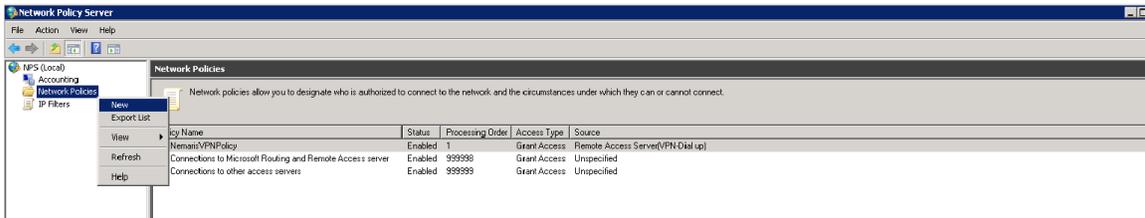
4. NAME THE POLICY, SELECT REMOTE ACCESS SERVER (VPN-DIAL UP) IN THE DROP DOWN LIST, AND THEN NEXT.

5. UNDER CONDITIONS, CLICK ADD, SELECT USER GROUPS, AND ADD.

6. CLICK THE ADD GROUPS 'BUTTON" AND LOCATE YOUR GROUP USING THE OBJECT TYPE (GROUPS), LOCATIONS (YOUR DOMAIN SERVER), ADVANCED, AND FIND NOW "BUTTONS".

8
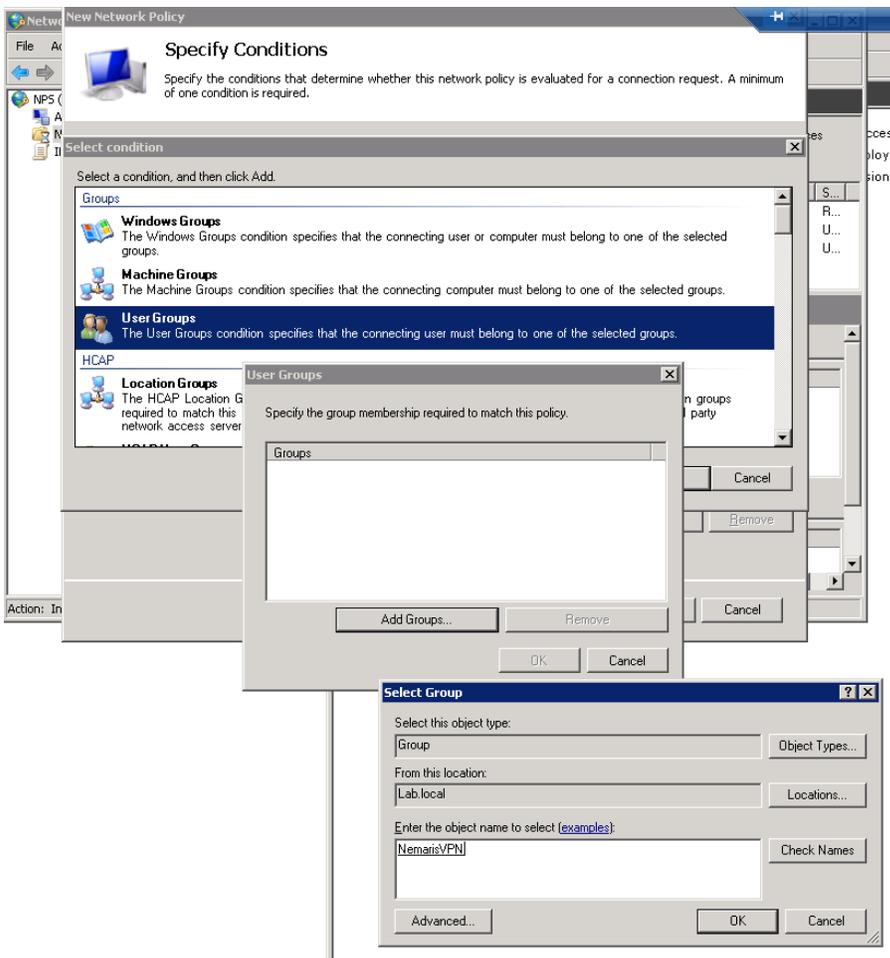
7. *IN THE SPECIFY ACCESS PERMISSIONS WINDOW, SELECT ACCESS GRANTED AND NEXT.*

8. *ACCEPT ALL DEFAULTS IN THE FOLLOWING TWO WINDOWS; CONFIGURE AUTHENTICATION METHODS, CONFIGURE CONSTRAINTS.*

9. *UNDER CONFIGURE SETTINGS CHOOSE IP SETTINGS, THEN ASSIGN A STATIC IPV4 ADDRESS, AND INSERT YOUR CHOSEN STATIC IP (SAME ONE AS IN THE SURGIMAP PACS CONFIGURATION). THIS MUST OF COURSE BE PART OF YOUR LAN SUBNET.*
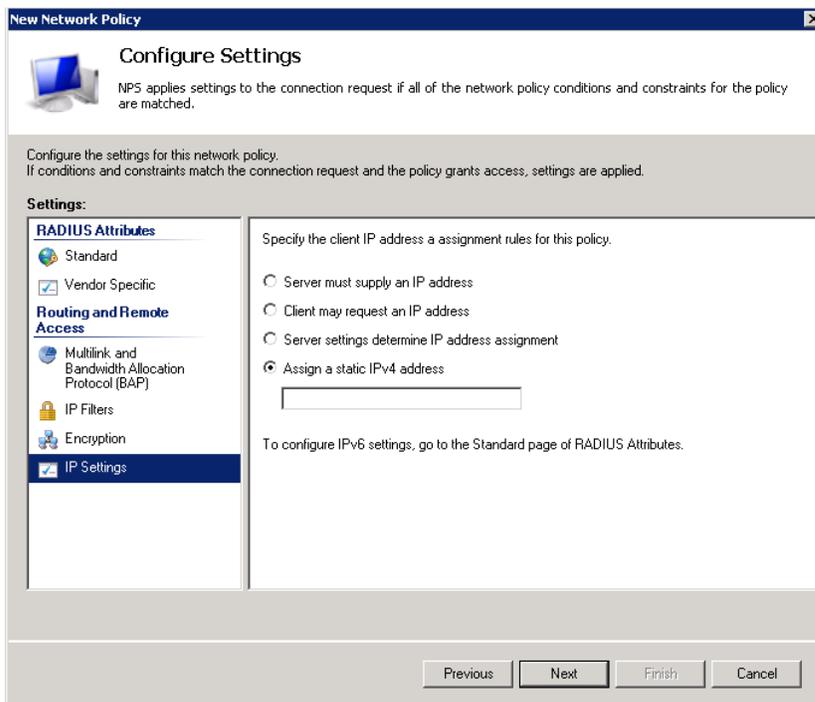
10. UNDER THE COMPLETING NEW NETWORK POLICY CLICK FINISH.
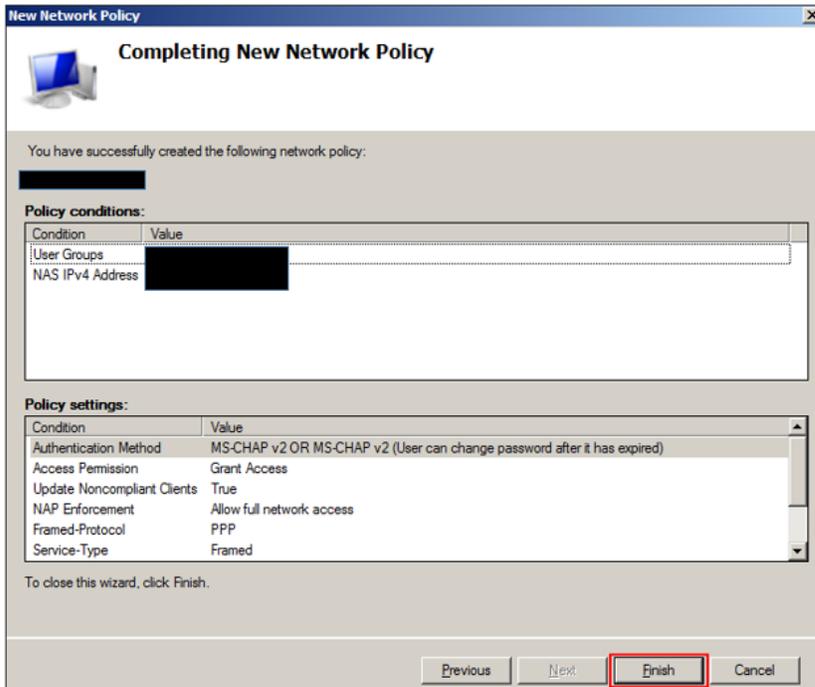
11. NOW YOU CAN CONFIGURE YOUR STATIC IP ADDRESS IN THE ADDED AD USER DIAL-IN TAB IN ACTIVE DIRECTORY USERS AND COMPUTERS.
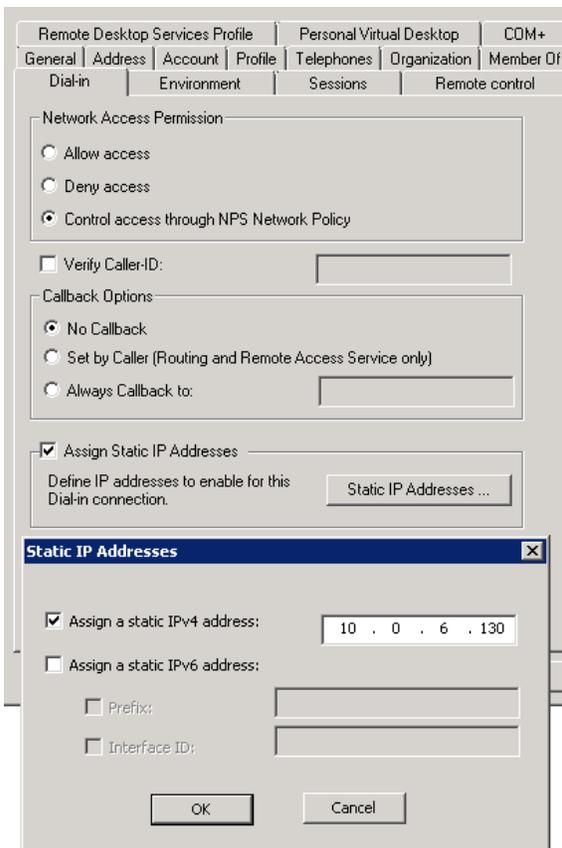
Connecting to PACS for multiple Surgimap accounts on a single computer

When connecting to PACS on a single Windows or MAC based computer for multiple Surgimap user accounts to go on to, input the following parameters to the settings.ini file located with the rest of the software contents.

Please note this addition to the settings.ini needs to be at the start of the file while the last line item needs to be within the [application] section. If you want to add, for instance, 3 different DICOM nodes with the following parameters:

DICOM Node #1

      IP address: 1.1.1.1

      AE Title: AETITLE1

      Port: 11112

      Name: PACSNODE1

DICOM Node #2

      IP address: 2.2.2.2

      AE Title: AETITLE2

      Port: 21112

      Name: PACSNODE2

DICOM Node #3

      IP address: 3.3.3.3

      AE Title: AETITLE3

      Port: 31112

      Name: PACSNODE3

The local port is 12346.

Add the following information on the settings.ini file:

Note: Place this at the top of the file

Also, please make sure that each IP Address inside the AETITLES_TABLE entry is unique.

```
NODE_ADDRESSES=1.1.1.1/%/2.2.2.2/%/3.3.3.3

NODE_AETITLES=AETITLE1/%/AETITLE2/%/AETITLE3

NODE_PORTS=11112/%/21112/%/31112

NODE_NAMES=PACSNODE1/%/PACSNODE2/%/PACSNODE3

AETITLES_TABLE=10.10.10.10/@/SURGIMAP1/%/20.20.20.20/@/SURGIMAP2

SCP_PORT=12346


[application]

PACSSettingsFromINIOverride=true
```

If the settings.ini file name is not visible, hidden folders/files will need to be disabled. To do this, navigate to:

- ❖ **Windows** – Open the Control Panel & locate the Folder Options. Select the radio button "Show hidden files, folders and drives"

- ❖ **MAC** – Launch Terminal and type in "Defaults write com.apple.finder AppleShowAllFiles YES – boolean TRUE;" Hold the "Option/Alt" key, then right click on the Finder icon in the click Relaunch.

Push User Information Implementation Details

Surgimap's Query and Retrieve operations (C-FIND and C-MOVE), "Push User Information" is an optional parameter that may be enabled to provide additional identifying information of the user using PACS functionality via a Surgimap client. To activate/deactivate the setting, go to User Settings > DICOM Nodes > Advanced > Push User information > select or deselect the checkbox. If this option is enabled, the DcmDataset object that is sent for C-FIND and C-MOVE operations will contain an additional tag: DCM_ImagingServiceRequestComments (0040, 2400). The contents of this tag will contain the current logged-in Surgimap user's email address in the following format as a string: user=user@example.com . Utilizing this tag is implementation-specific on the PACS Server side, but the contents of it should typically show up in the Debug-level logs of the target PACS Server implementation. It is recommended to make a provision for it in the implementation if it is to be used for record keeping or other purposes.

Troubleshooting the PACS connection

If send from PACS and/or query/retrieve does not work after inputting the DICOM node information in both Surgimap and PACS:

❖ Ensure there is only once instance of Surgimap running (no instances of Surgimap running in the background). To verify this go to Task Manager > Processes > scroll down to Surgimap. If there are multiple Surgimap processes, close all of them and relaunch the Surgimap application. It is recommended that you regularly shut down or restart your computer to avoid multiple processes being generated.

❖ Use the 12346 port for the local DICOM node in both PACS and Surgimap. If that does not work, try port 104.

❖ Change the Surgimap settings in the Local Configuration (SCP) section according to your PACS provider by using the below drop-down menu and hitting Apply. This is a one-time application and does not need to be updated with each new login. Expand the Advanced section to view the default settings for each PACS provider and to customize additional DICOM settings.
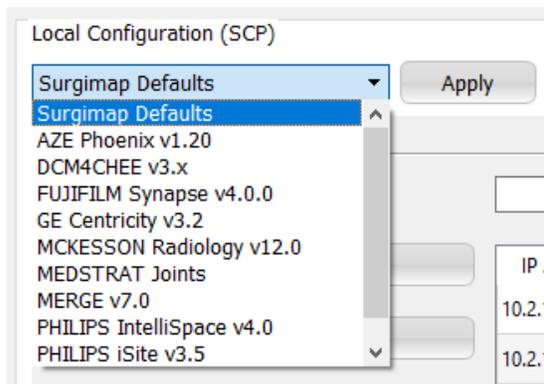
Additional PACS Settings INI override options

A comprehensive list of PACS Settings INI Override options can be found below. All of these can be found in the software. For those options that have a checkbox, true or false can be entered. For those options that are numeric, the number can be entered. Options with other properties are explained in either the above summary, or under the option below.

```
NODE_ADDRESSES
NODE_AETITLES
NODE_PORTS
NODE_NAMES
NODE_LOCALAETITLES
AETITLES_TABLE
SCP_PORT
SCP_MAXASSOCIATIONS
SCP_MAXPDU
SCP_FILEPAD
SCP_ITEMPAD
SCP_ACSETIMEOUT
SCP_DIMSETIMEOUT
SCP_SINGLEPROCESS
SCP_SUPPORTPATIENTROOT
SCP_SUPPORTPATIENTSTUDYONLY
SCP_SUPPORTSTUDYROOT
SCP_REFUSEMULTIPLESTORAGEASSOCIATION
S
SCP_IGNORESTOREDATA
SCP_BITPRESERVING
SCP_CORRECTUIDPADDING
SCP_USEMETAHEADER
SCP_KEEPDBHANDLEDURINGASSOCIATION
SCP_DIMSEBLOCKINGMODE
SCU_HALTONFAILURE
SCU_ALTERNATEPROPOSALMODE
MAX_NUM_PATIENTS
MAX_NUM_STUDIES
UNIQUE_KEYS_FOR_HIGHER_LEVELS
```

```
ADVANCED_LOGS

SCU_DECOMPRESSION
- Options:
0 - Automatic
1 - Compress
2 - Decompress

WILDCARD_POLICY
- Options:
0 - None
1 - Only trailing
2 - Leading and trailing

LOGGING_LEVEL
- Options:
60000 - Off
50000 - Fatal Errors
40000 - Errors
30000 - Warnings
20000 - Info
10000 - Debug
0 - Trace
```

IF YOU ARE STILL EXPERIENCING TROUBLE, PLEASE CONTACT US AT SUPPORT@SURGIMAP.COM