ImageGrid® *Mammography Viewer*

User Manual

Software Version 4.1

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Intended Use of this Document

This user manual is a reference guide detailing the software's proper installation, configuration and general usage. The screens on your monitor may vary slightly from those in this guide.

This user manual is not intended to be used as instructional material for implementing medical procedures or as a substitute for live (in-person) instruction by a trained professional.

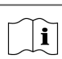
Product Intended Use

The Candelis® Radiology Picture Archiving Communications System (PACS) is a computer-based image storage/retrieval system that stores and recalls digital images from different imaging modalities, e.g. CT, digital radiography, nuclear medicine, ultrasound, magnetic resonance imaging (MRI). Images and data can be stored, communicated, manipulated and displayed within the system or across computer networks at distributed locations. It may consist of image acquisition devices, a host computer, image archiving devices, and display stations connected by a communications network.

The ImageGrid® PACS is a system intended for professional use only.

Explanation of Symbols

The following symbols may appear on the device or product labelling:

Symbol	Explanation
	Manufacturer
	Manufacture date
Rx only	Prescription use only
	Consult operating instructions
	Caution
SN	Serial number
REF	Reference number or device model
CE 0050	Compliance with the Directive 93/42/EEC as Class II device
	Device may not be thrown in the trash but must be recycled according to the European Waste Electrical and Electronic Equipment Directive

WARNINGS:

- CAUTION **Consult Dell Instructions For Use prior to installation.**
- CAUTION **Consult EIZO Instructions For Use prior to installation.**
- CAUTION **Consult Barco Instructions For Use prior to installation.**
- CAUTION **ImageGrid Measurement Tools are for "reference only" and are not to be used for diagnostic purposes.**
- CAUTION **DO NOT place within 1.83 meters (6 feet) of a patient or in explosive environments where flammable gases such as anesthesia or oxygen may be present.**

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ImageGrid Platform

How To Use This Help Document

This document is a reference and user's manual for the ImageGrid Platform, detailing the system's proper installation, configuration and general usage. This document is not intended to be used as instructional material for implementing medical procedures. It is not intended to be used as a substitute for live (in-person) instruction by a trained professional. The ImageGrid Platform is a software system intended for professional use only. This document is organized in to sections illustrating the ImageGrid Platform's System Requirements, its modes of use, the product's features, and a set of basic instructions on its proper assembly and operation. This document is intended for end-users or technicians whom have already received training in the operation of this product.

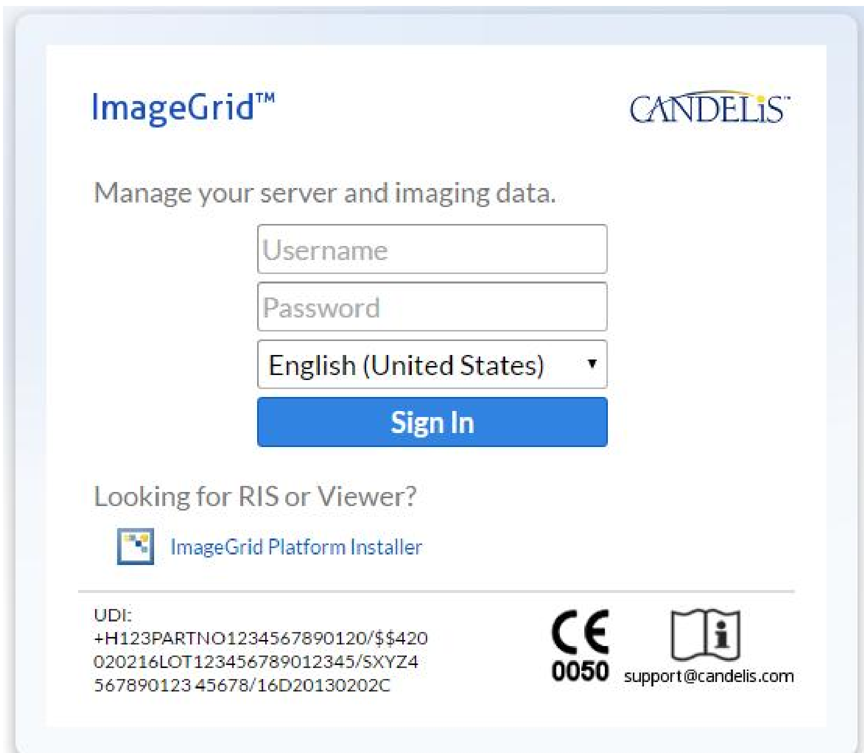
Installation of ImageGrid Platform

A step-by-step description of how to install ImageGrid Platform on a client workstation

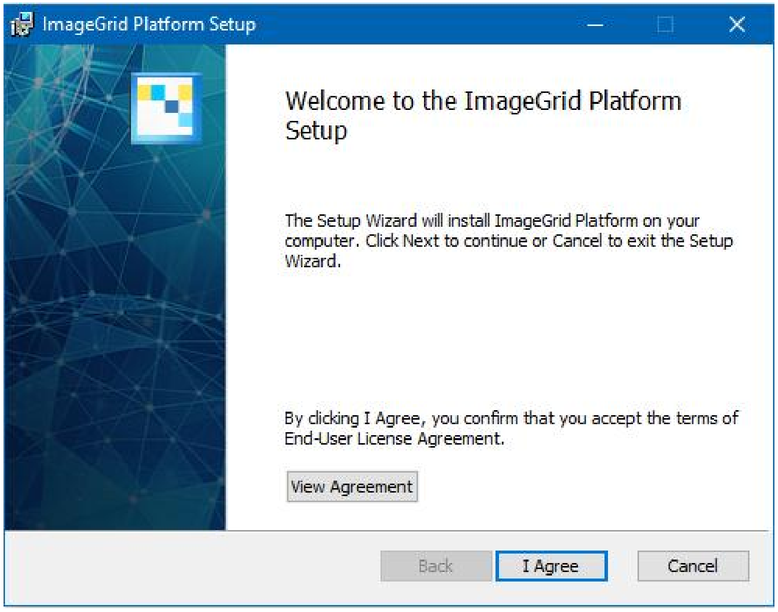
1. Prepare a client workstation based on the system requirements of ImageGrid Platform.
2. Depending upon your site’s configuration, the workstation(s) should have the following network settings:
   a. For workstations located on the same LAN as ImageGrid PACS, the IP Address or hostname of the ImageGrid PACS system is required (e.g. 192.168.100.101 or imagegrid.mydomain.com).

      Contact your network administrator for information on proper network configuration of the workstations.

3. Prior to using the application, the web browser must be configured to be able to accept SSL certificates (see your browser documentation for details)
4. Open a web browser and enter the server's hostname or IP address. For example: http://imagegrid.mydomain.com or http://192.168.100.101. When the web interface login dialog appears, click on "ImageGrid Platform Installer" to download the installation msi file.

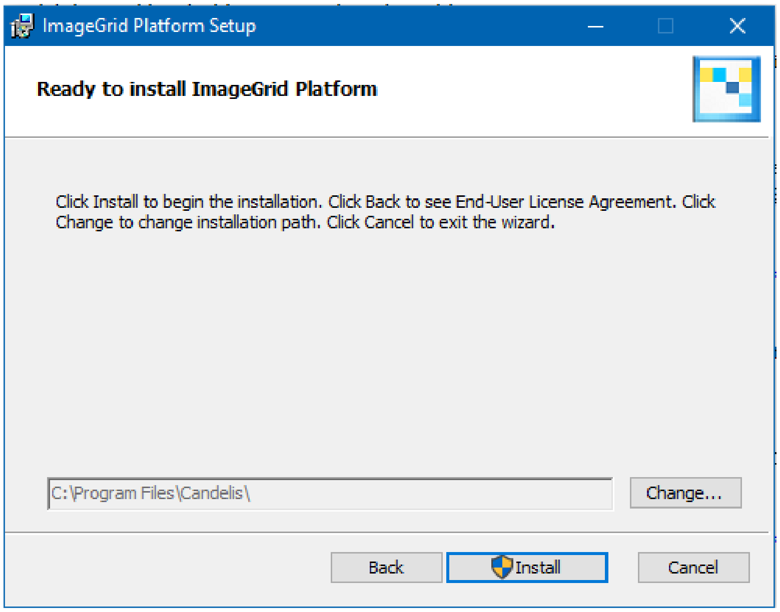


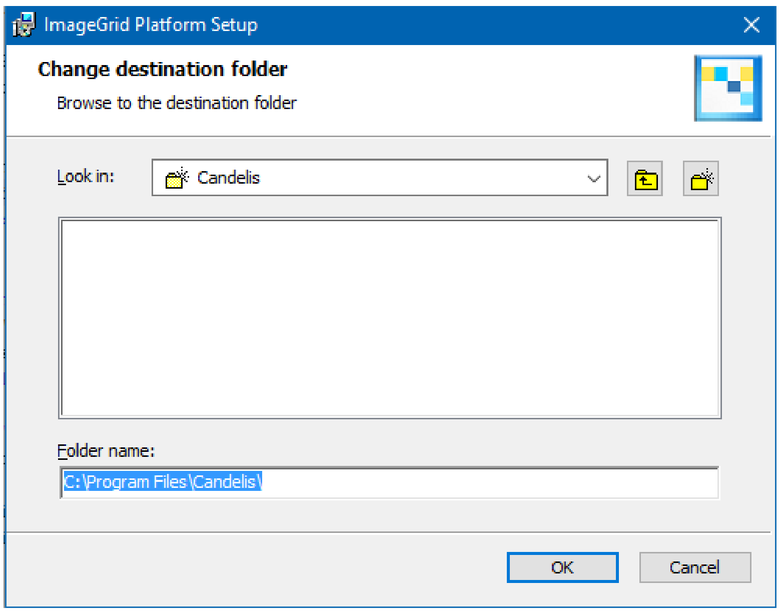
5. Execute the installation msi file just downloaded.
6. Welcome dialog shows up.



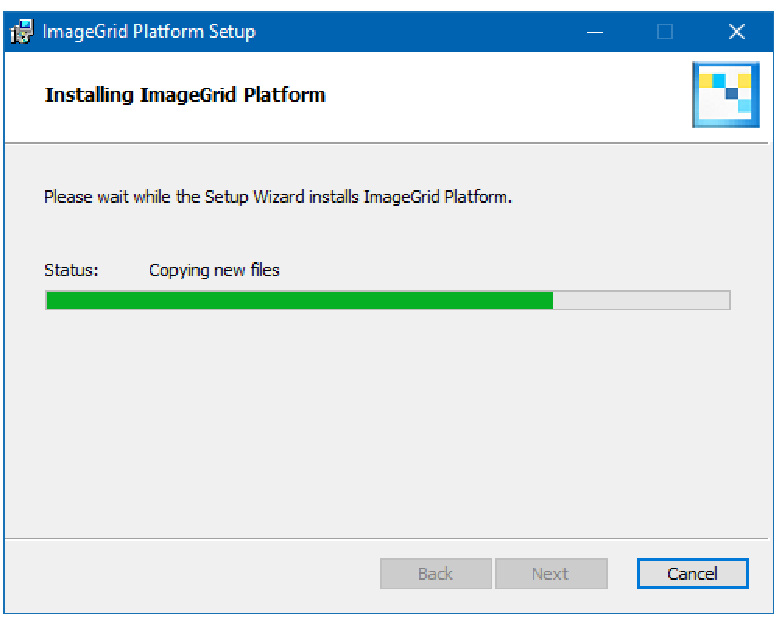
7. Click "View Agreement" to read or print the End User License Agreement of ImageGrid Platform. Click "I Agree" to continue or "Cancel" to quit installation.

8. Specify the installation path by clicking "Change...". Click "Install" to continue.

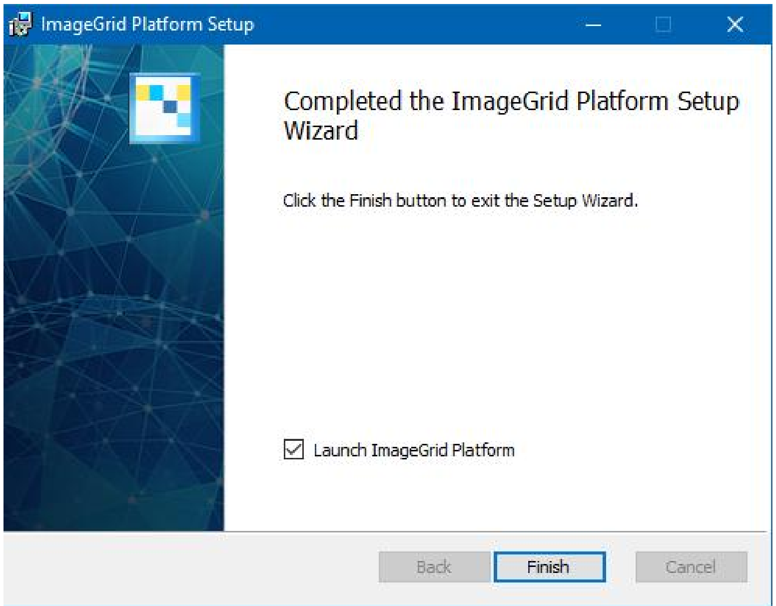




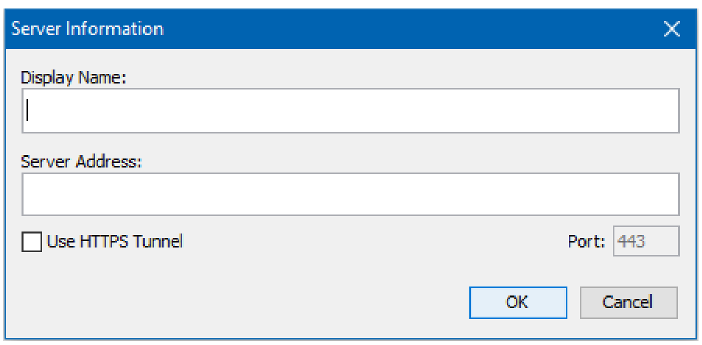
9. Wait for the installation process to finish.



10. If install successfully, the installation complete dialog would show up. By default, the "Launch ImageGrid Platform" is checked. Click "Finish" to launch the platform.



11. The first time user install ImageGrid Platform, there is no server specified. So the pop-up server information dialog would ask user to add a server. Check configure your server settings part for detail.



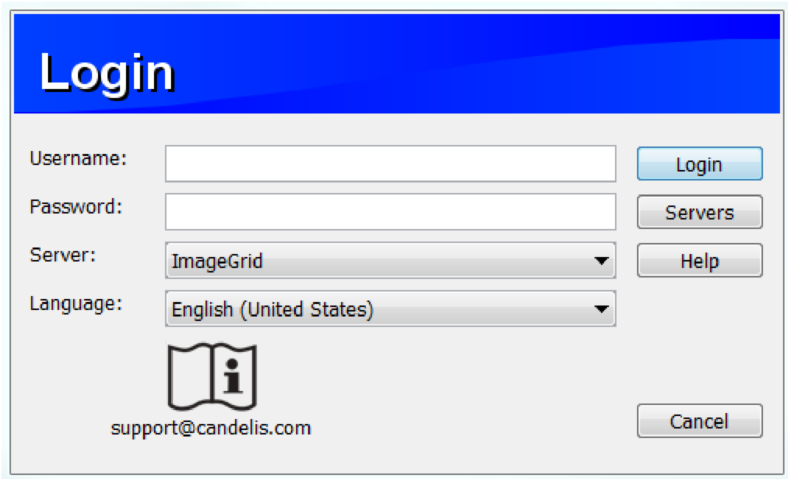
After configuring server information, the client application login window will pop up.

12. Enter username and password then click Login. Once authenticated, the system will load the ImageGrid client application.

Authentication

Login Settings

The Login dialog shows up when the ImageGrid Platform is started:



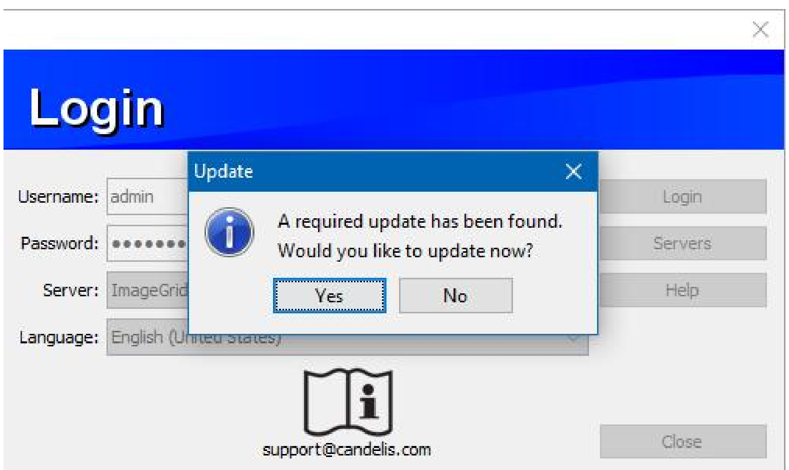
Enter a username and password, and click "Login" to login to the selected server.

You may need to configure your server settings if there are no servers listed.

Platform Update

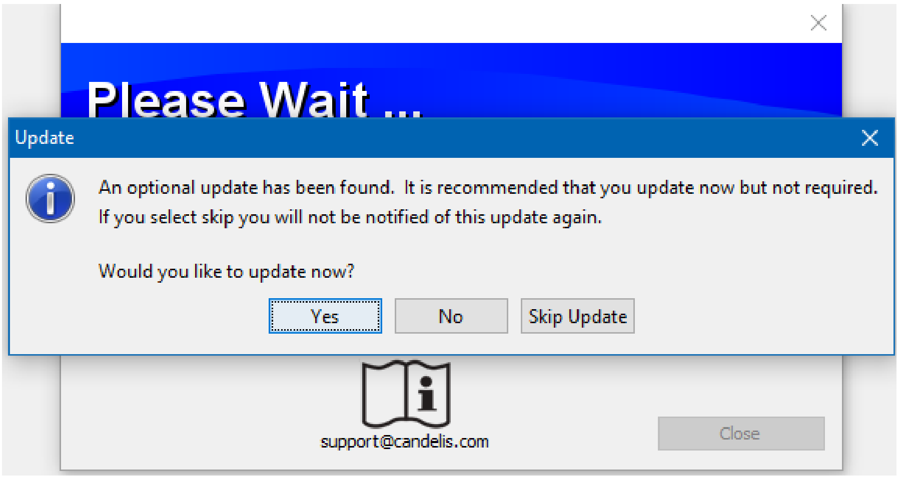
If new update is found for the ImageGrid Platform, an update dialog would popup when logging in.

If the update is required, update message would looks like:



Click "Yes" to update the ImageGrid Platform or Click "No" to exit.

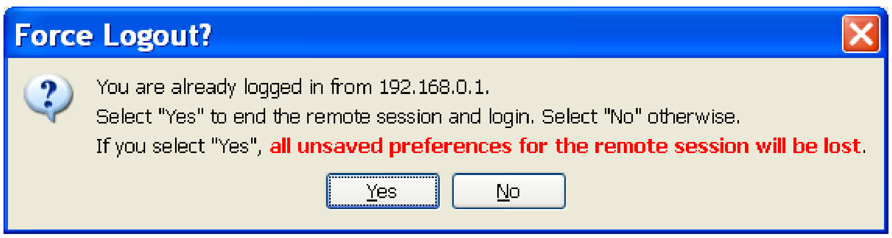
If the update is optional, update message would looks like:



Click "Yes" to update the ImageGrid Platform, click "No" to decide next time or click "Skip Update" to skip this update. The update message will not show again for this update if user click "Skip Update".

Remote Logout

If the specified username is already in use on another machine, you will be presented with the following dialog:



Click "Yes" to log out the user at the remote machine and to continue the login process.

Click "No" to cancel the login process and to maintain the remote session.

Logging Out

Log out the current user by selecting "Logout" from the application's File menu, or by clicking the Log Out icon on the main application toolbar.

You may be logged out if your Site Security Policy specifies a maximum inactivity time, and if you do not perform any actions for that duration.

While this dialog is visible, you may click "Cancel" to keep the application active. Otherwise, your session will end and the application will return to the Login Dialog.

Remote Logout

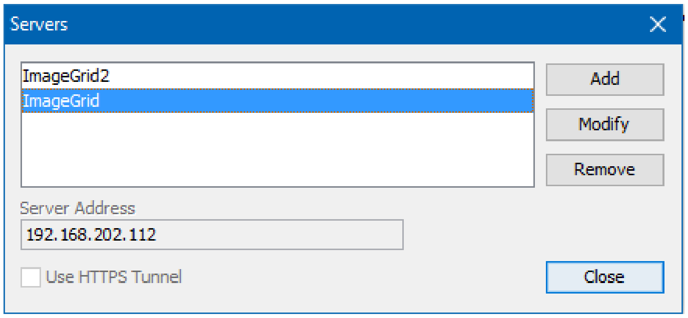
If for any reason, the application fails to communicate with the server, you may lose your session. In this case, you will be logged out, and any unsaved preferences will not be saved to the server.

Similarly, if you are logged out remotely by another user, then any unsaved preferences will not be saved to the server.

If your account has been deleted by another user, you will be logged out (preferences are deleted from the server).

ImageGrid Server Settings

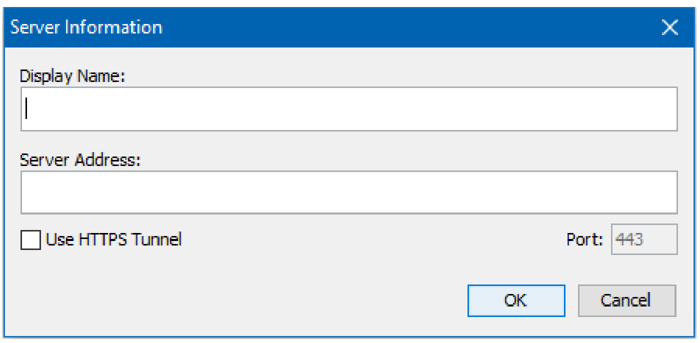
The servers dialog is shown below. It can be accessed by clicking the "Servers" button at the bottom of the Login Dialog.



Note: By default, there will be only one server listed: the server from which the ImageGrid Platform application was installed.

Adding a New Server

Click the "Add" button on the right to add a new server to the list. You will be presented with a dialog in which to specify the server's details:



Specify a human-readable name and the IP address or hostname of the server.

In addition, you may activate "Use HTTPS Tunnel" and specify an appropriate port.

Modifying an Existing Server

Select a server from the list and click the "Modify" button to edit the settings for that particular server. See "Adding a New Server" above.

Deleting an Existing Server

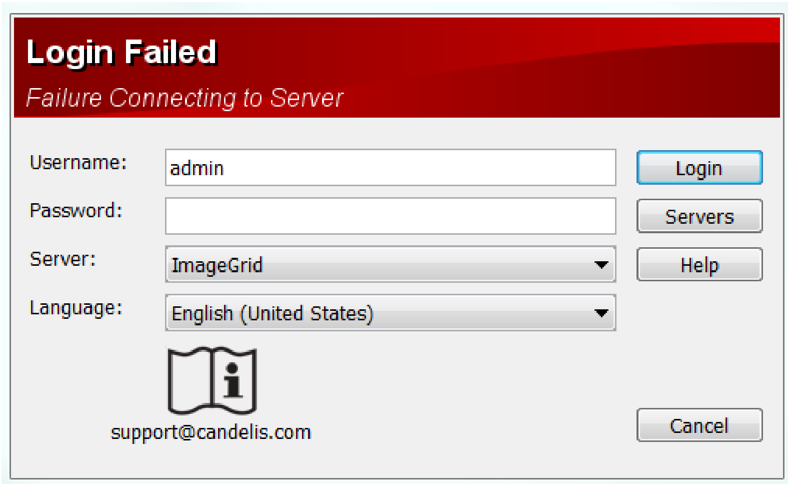
Select a server from the list and click the "Remove" button to remove it from the list of servers.

HTTPS Tunneling

HTTPS Tunneling may be used to tunnel traffic between your client machine and the ImageGrid server via a firewall. If you are trying to connect to a server via a firewall, please contact your system administrator for details.

Troubleshooting

If the login process fails for some reason, the login dialog will display a message as follows:



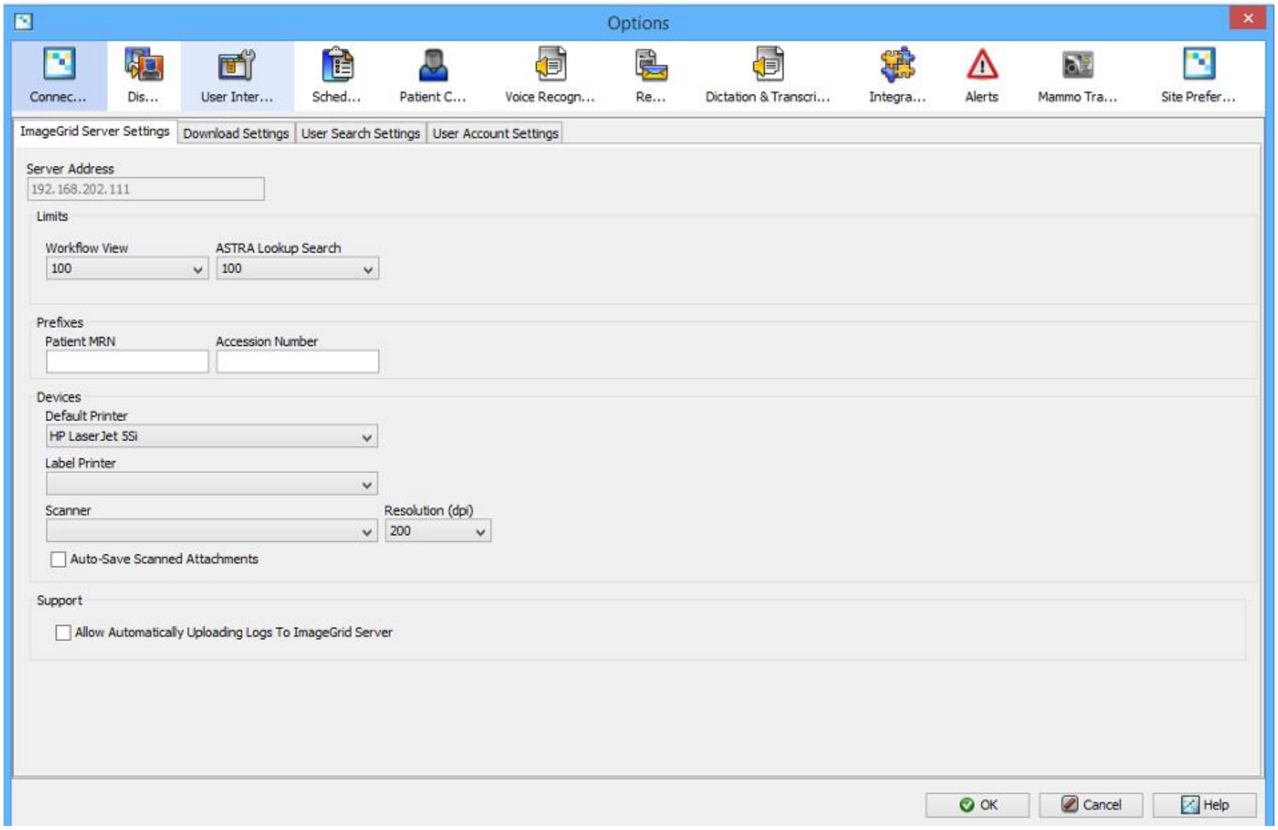
Some possible problems include:

Message	Suggested Course of Action
Incorrect Username or Password	Enter the correct username and password and try to connect again.
No Valid License(s) Found	No licenses are available. Contact your system administrator.
Incorrect Input	Make sure you have entered all required information and try to connect again.
Failure Connecting to Server	Make sure the server settings are correct.
Duplicate Logins (Same Username)	The selected username is in use at another machine.
Failure Initializing Services	The server encountered an error and was unable to process the login request. Contact your system administrator.

If any of these problems persist, contact your system administrator.

User Preferences

Provides each user with the capability (if permitted) to specify his/her own application property setting if permitted. These options are accessible by going to Tools->Options and accessing all the different preference options.



Shared Files

Certain files in ImageGrid Platform such as hanging protocols or mammography workflows may be shared with other users.

Sharing Files

There are two ways in which a file can be shared:

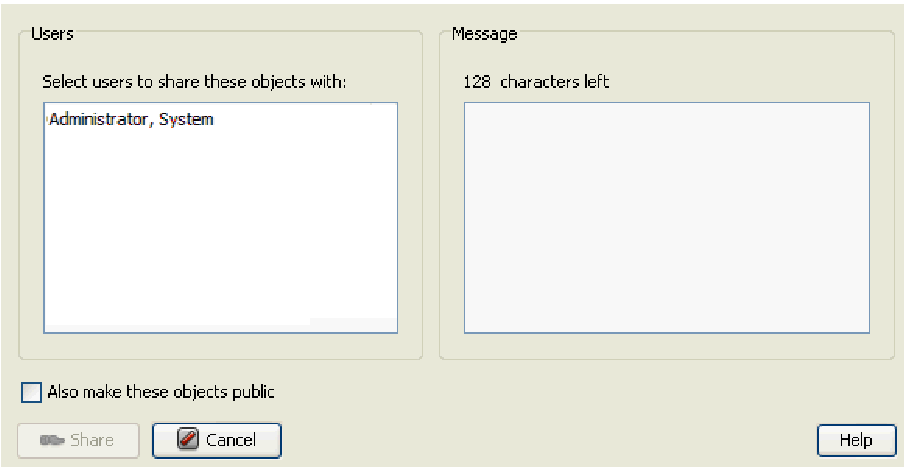
- **Making a file public** allows all users to find and copy the file.
- **Sharing a file with particular users** allows only specified users to makes copies of your file. Those users will receive messages the next time they log in, informing them about the new shared file.

The share dialog is shown below. This dialog may be opened from any manager supporting file sharing (for example, from the hanging protocols manager).

On the left is a list of all users. Select multiple users by holding the Control key and clicking with the left mouse button.

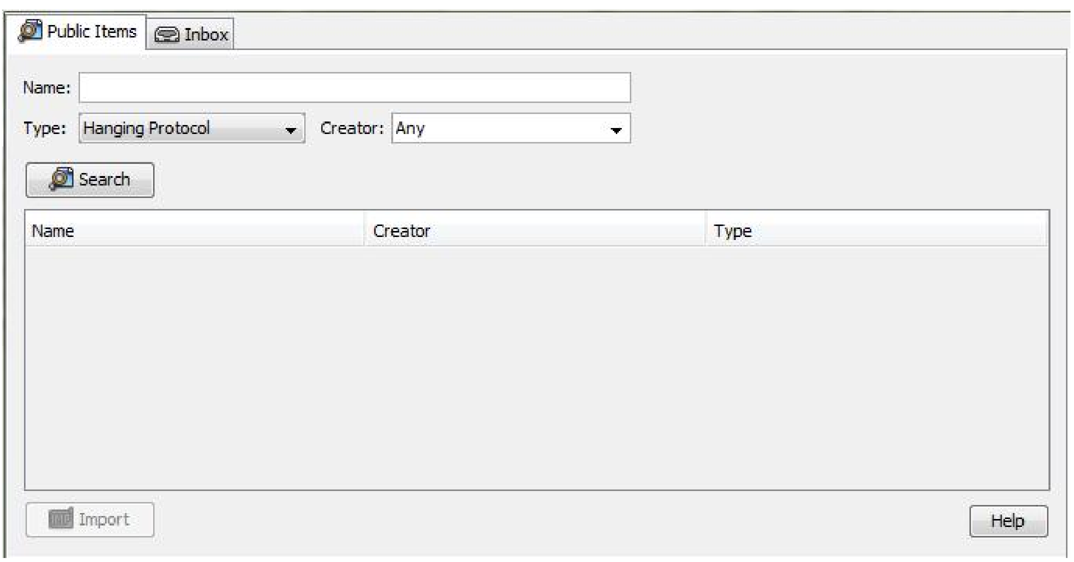
On the right, a message may be entered which will appear on the target users' machines along with the shared file.

In addition, checking the box at the bottom will make the file public, allowing any user to find and copy your file. However, only the selected users will receive notification messages about the new shared file.



Finding Public Files

Files which have been made public by other users may be found using the search dialog shown below. If a manager supports file sharing, then a button will be provided to open this dialog.

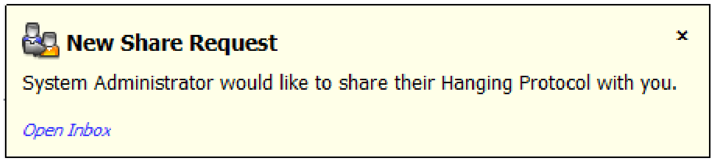


Find the file by entering the name or a portion of the name and clicking Search. Narrow down the result by specifying a particular user or file type.

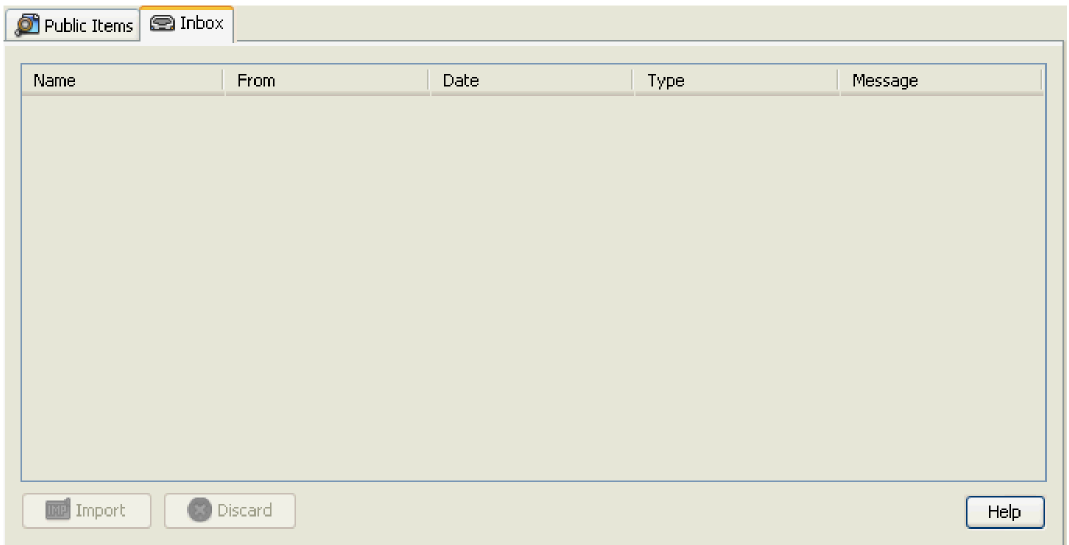
Make a copy of the selected file by clicking the Import button. The file will appear in the appropriate manager interface.

Receiving Files From Other Users

If another user shares a file with you, you will receive a message. If you are not logged in, the message will be displayed the next time you log in.



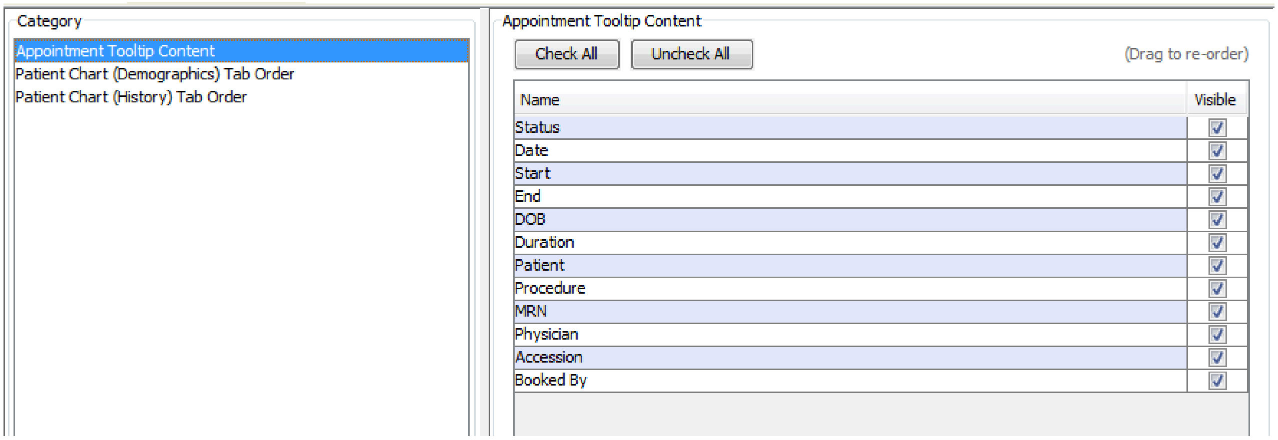
Click Open Inbox to display the File Inbox, shown below:



The table lists files sent to you by other users. Select a file and click the Import button to make a copy of the file, or click Discard to ignore the file and delete it from your inbox.

Site Preferences

Site preferences configuration provides the administrator with the capability to specify an application property setting for an entire customer site, and override any corresponding user interface.



Configuring Site Preferences

1. Log into IGRIS as an administrator
2. Select a category
3. Check or uncheck the checkboxes to control the corresponding item's visibility
4. Drag items to re-order

Introduction

The admin users have access to specific configuration interfaces to set roles, define permissions, create user accounts and so on...

Here are some different configuration interfaces available for admin users:

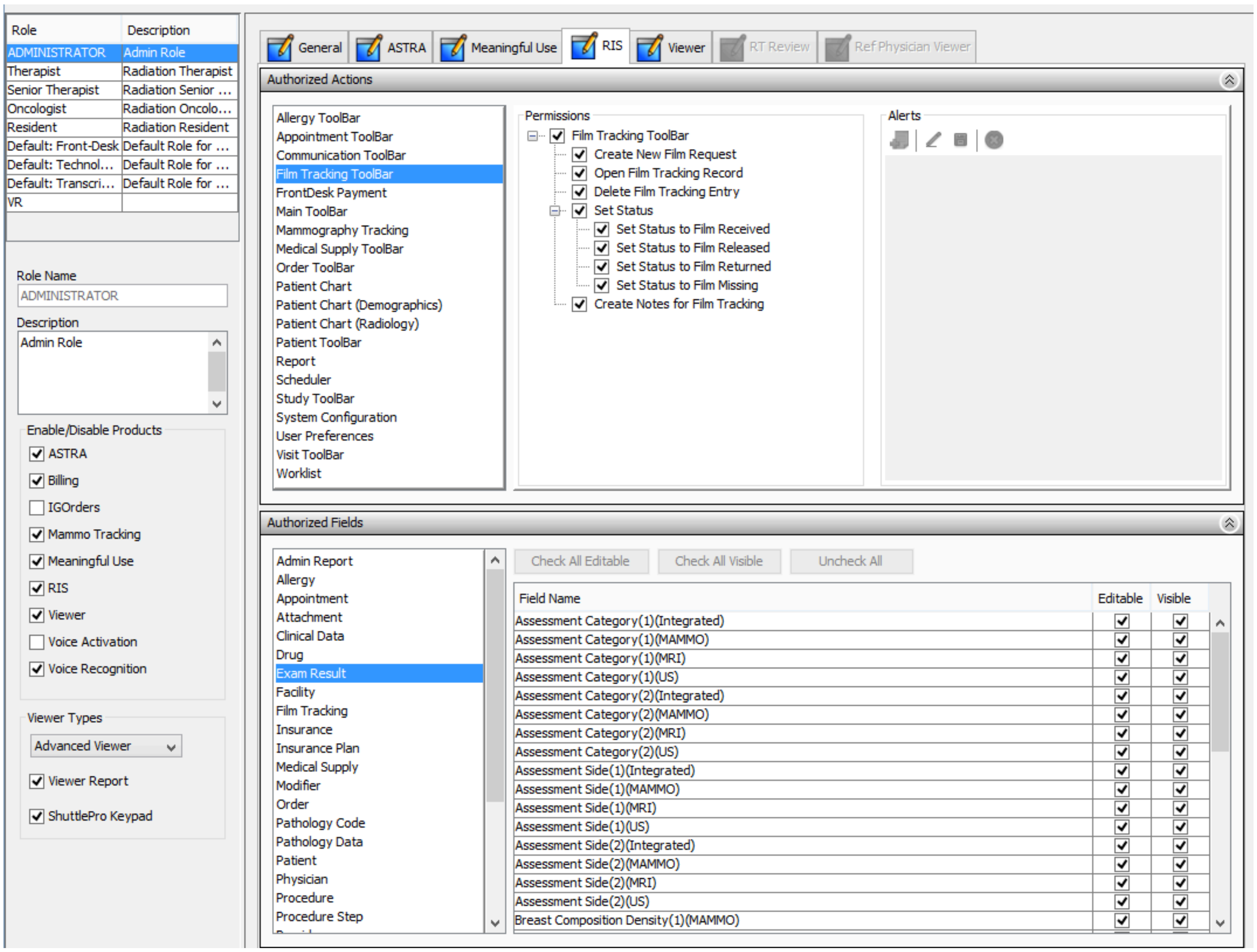
- Manage Roles Module: Define the permissions
- Manage Users Module: Create a user
- Site Preference Module in Options: Define site security
- Connection Module in Options: Define search settings

Configuring Roles

ImageGrid Platform provides the administrator **and the administrator only** with the capacity to create roles tailored to each facility, its departments, workgroups, and individuals. A “Role” is analogous to a group account. It consists of granted access rights for all authorizable products (i.e. RIS, Viewer, etc.), features (i.e. Main Toolbar, Scheduler, Study Worklist, etc.), actions (i.e. Create New, Open, Delete, etc.) and fields (i.e. Account Number, Account Status etc.). Each user can be assigned one or many roles.

To access the configuration interface for roles, do the following:

1. Log into ImageGrid Platform as an administrator
2. Click the “Manage Roles” button 



The Role Configuration Interface consists of the list of all the created roles in the left panel. For each role, there is a list of products that can be enabled or disabled. There are also special mutually exclusive products (i.e. Viewer Types) where only one of the products can be chosen (as shown in the figure above). Some of the products have associated authorizable features, actions and/or fields. For each of these products, the features are displayed in a list format on the left. For each feature that is selected, the authorizable actions/fields are displayed on the right side.

A feature consists of either actions or fields, but not both.

For each authorized action, the administrator can set the value for the enabled check-box. The administrator can also check or uncheck all the actions at once by checking or unchecking the Category checkbox.

An action can contains sub-actions and alerts. In checking the action, you enable all the sub-actions and alerts contained in the action. If you only check some of the sub-actions and/or alerts, the action checkbox will be filled with solid color. This illustrates an action that is not completely enabled.

For each authorized field, the administrator can control the value of the "Editable" and/or "Visible" check-boxes. If "Visible" is false, "Editable" will be false by default. The administrator can also set all to editable, set all to visible, or uncheck all by clicking the "Check All Editable", "Check All Visible", or "Uncheck All" buttons, respectively.

Create New Role

1. Click "New Role" button. 

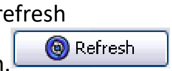
2. Choose any combination of the products (if any) and one of the mutually exclusive products (if any)
3. Choose the desired combination of authorized actions and fields for each enabled product (if any)
4. Click the “Save Role” button when done. 

Create New Role (Copy)

1. Select an existing role to copy
2. Click "Copy Role" button. 

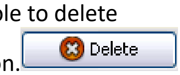
3. Input the name and description of the new role (The default name will have the words "Copy_of_" in the front of the name). The permissions should be exactly the same as the existing role selected.
4. Change the desired combination of authorized actions and fields for each enabled product, if applicable
5. Click the “Save Role” button when done. 

Refresh Role

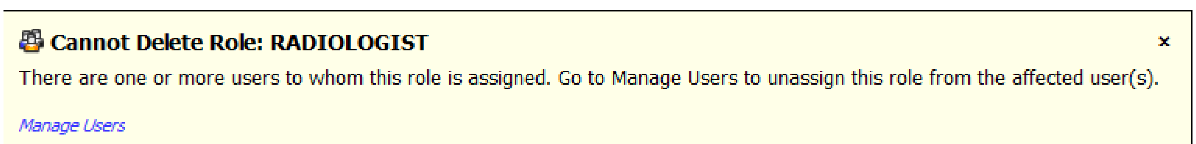
1. Select an existing role to refresh
2. Click the "Refresh" button. 

3. The role will be refreshed to its latest state from the server.

Delete Role

1. Select an existing role to delete
2. Click "Delete" button. 

3. **You will need to manually delete or unassign all the users currently assigned to this role before being able to delete the role.**
   Otherwise, a warning status line element will show up:

4. A warning dialog will pop up asking "Are you sure you want to remove the selected role?" Click Yes to delete.

Default Role

Typical roles for different products are predefined and displayed in the roles list.

Default roles cannot be deleted and their names and necessary products cannot be modified.

Authorization

The authorization interface is composed of different tabs, a tab representing a product. All the tabs contain an "Authorized Actions" panel and some of them an "Authorized Fields" panel.

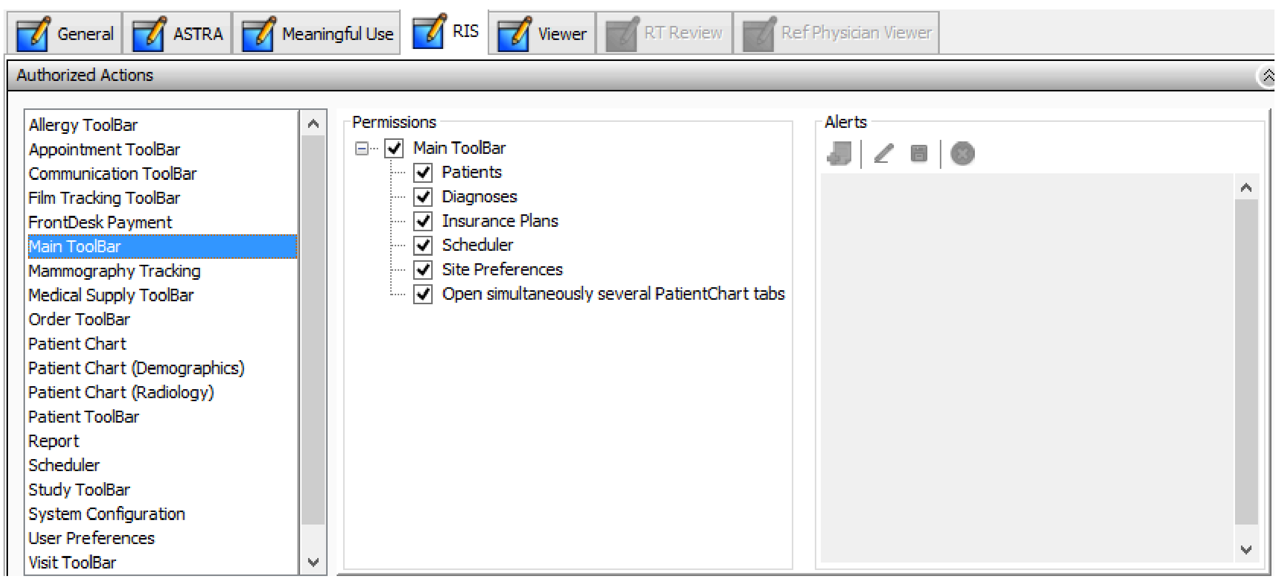
The tabs are

a. General
b. ASTRA
c. Meaningful Use
d. RIS
e. Viewer
f. RT Review
g. Ref Physician Viewer

The tabs will be enabled depending on the user's licenses and the products enabled.

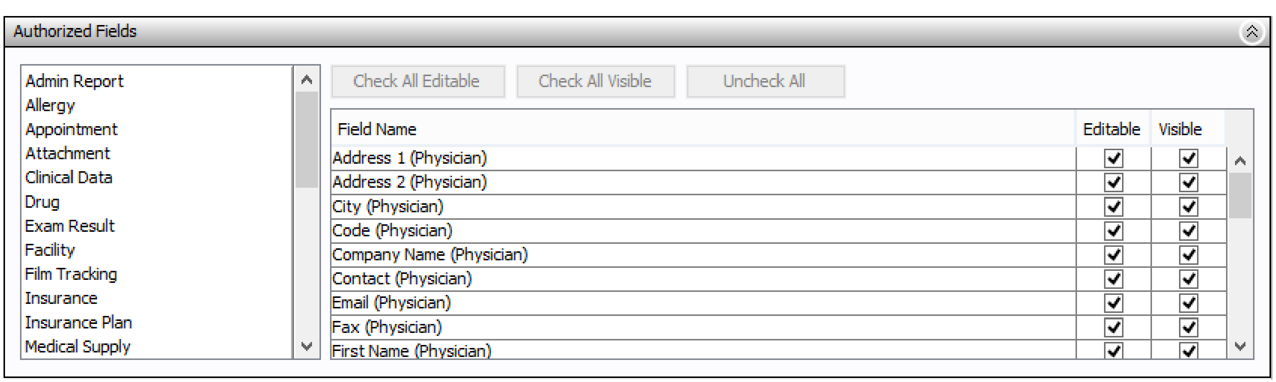
Authorized Actions

This section of the configuration interface specifies which actions linked to the product each account type may take by enabling/disabling the corresponding checkbox. The authorized Actions section is decomposed into a Categories section which lists all of the actions that are accessible from the IGRIS Interface when a user first logs into the system. The Authorized Actions interface is laid out as follows.



Authorized Fields

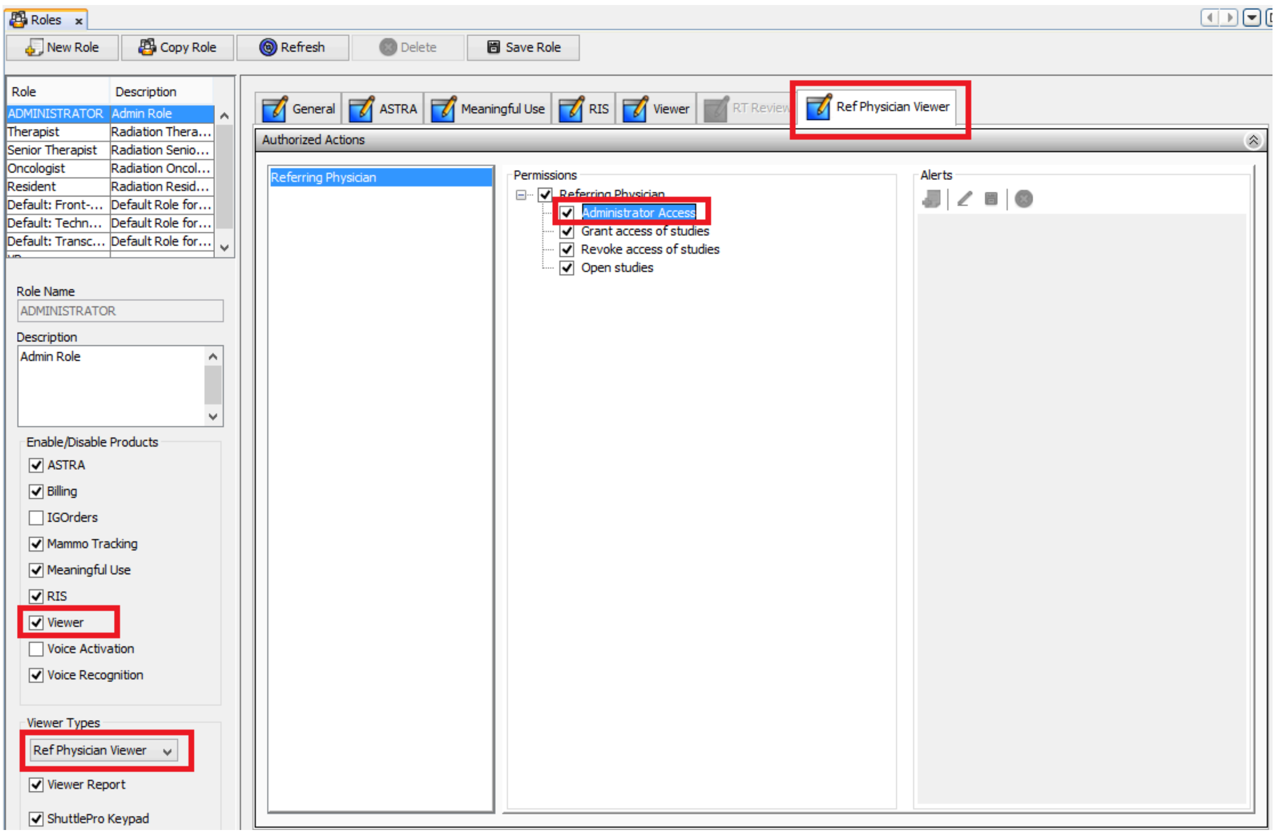
This section of the configuration interface specifies which fields linked to the product each account type may see and access by enabling/disabling the corresponding checkbox. The authorized Fields section is decomposed into a Categories section which lists all of the fields that are visible and editable from the IGRIS Interface when a user first logs into the system. The Authorized Fields interface is laid out as follows.



Create a Referring Physician Viewer Role

To create a referring physician viewer user account, at least one referring physician viewer role has to be created first. There are two kinds of roles for referring physician viewer: referring physician administrator and referring physician. Both should be created by the ImageGrid system administrator.

To create the referring physician administrator role, the system administrator should go to "Manage Roles" -> "New Role", check "Viewer" under the product section then select "Ref Physician Viewer" under viewer type section. Afterwards, go to the "Ref Physician Viewer" tab and check the "Administrator Access" checkbox.



Referring physician administrator has more privileges then general referring physician user account.

1. Access to all studies

   Referring physician administrator can access all studies on that ImageGrid.

2. Grant all studies

   Referring physician administrator can grant all studies to other referring physicians even if he/she is not the owner of the study.

3. Revoke all studies

   Referring physician administrator can revoke all studies even if that study is not granted by him/herself.

Creating the referring physician role is the same as creating the referring physician administrator role except that the "Administrator Access" under the "Ref Physician Viewer" tab checkbox will be unchecked.

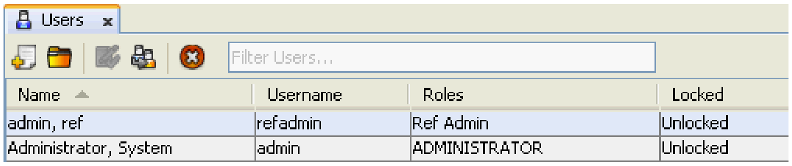
There are three other permissions for referring physician viewer user accounts: "Grant access of studies", "Open studies", and "Revoke access of studies".

User Configuration

A user is assigned to a specific person with a full name, a login name and his/her assigned role(s). Each Staff user can be assigned unique access rights.

To access the configuration interface for roles, do the following:

1. Log into the platform as an administrator
2. Click the “Manage Users” button.



Create a New User

1. Click "Add User" button.
2. Enter the person’s full name, address and contact information.
3. Under Login, give the person a unique username.
4. Specify an account password in the password text box and repeat to verify.
5. The Resource name will be automatically populated with the user's full name. This name will be used to assign a new resource to the user. This will allow you to correlate the resource for the RT Case Worklist and/or to schedule appointments under this user. (Note, in order to schedule appointments, the resource will need to have a facility)
6. To create a referring physician, mark the "Referring Physician" checkbox and Create a Referring Physician Viewer User Account
7. To restrict user to a particular institution, mark the "Institution Restriction" checkbox. After checking the box, click "Add Institution" to add the institution. Once it is added, it will appear under the drop down list. User can also remove it if needed, by clicking "Remove Institution". A user account set up with this restriction can only access studies of that particular institution.
8. Assign one or more AE Titles to which the user can have access. They will need to have viewer access to be able to view these AE Titles.
   Note: Checking the "Grant access to all available AE titles on server" checkbox will allow the specified user to be able to view all current and future created AE Titles.
9. To correlate a provider to a user, select the providers from the Providers table. Learn more about Providers here
10. Under Roles, assign at least one role.
11. To give the account a signing certificate, enter a date range (mm/dd/yyyy) for which the certificate should be valid. To clear the certificate, press the "Clear" button.
12. Finalize the certificate by creating a password and entering it twice in the respective fields. Click “Create” to generate a signing certificate.
13. You can also import a signature image for this user (i.e. if he/she is a radiologist who needs to sign reports). Use the “Import Image” button to browse for the image file (JPEG, PNG, etc.). If the signature is not wanted, you can delete it by clicking the “Clear Current Image” button.
    Important Note: In order to have the signature certificate accepted, you will need to enter the following minimum requirements: first name, last name, role, city and state
14. Click the “Save” button when done.

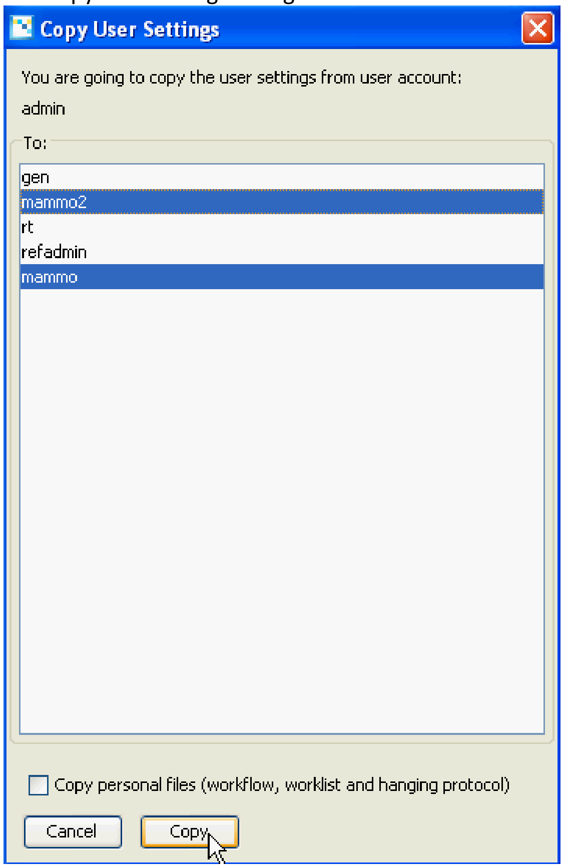
Edit an Existing User

1. Click "Open User" button.
2. Edit any existing user information, if desired.
3. If you want to modify the password, click the "Clear" button to clear the fields and input the new password (make sure to adhere to the Password Strength Requirements that are shown to the right of the text field)
4. If desired, change the user's role.
5. Repeat steps 4-14 of "Create New User" instructions.

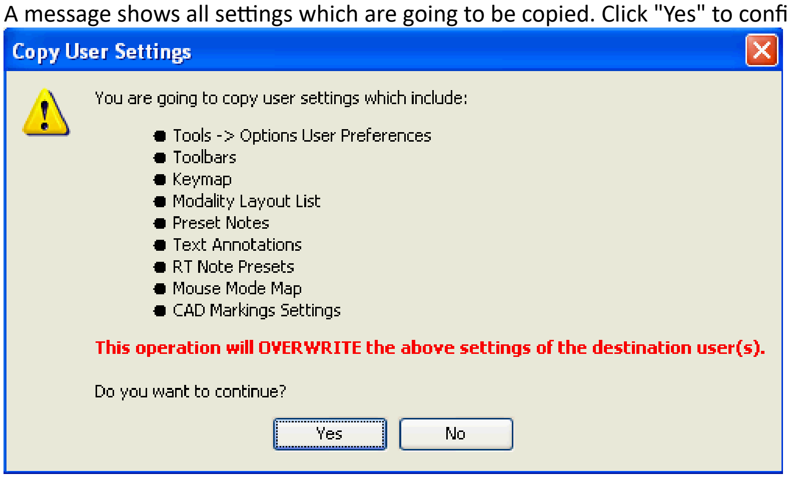
Copy User Settings

1. Select the user you want to copy from.
2. Click "Copy User Settings" button.

3. The copy user settings dialog shows.



4. Select the destination user account(s) from the list. Check the "Copy Personal Files" if you want to copy them.
5. Click the "Copy" button.
6. A message shows all settings which are going to be copied. Click "Yes" to confirm.

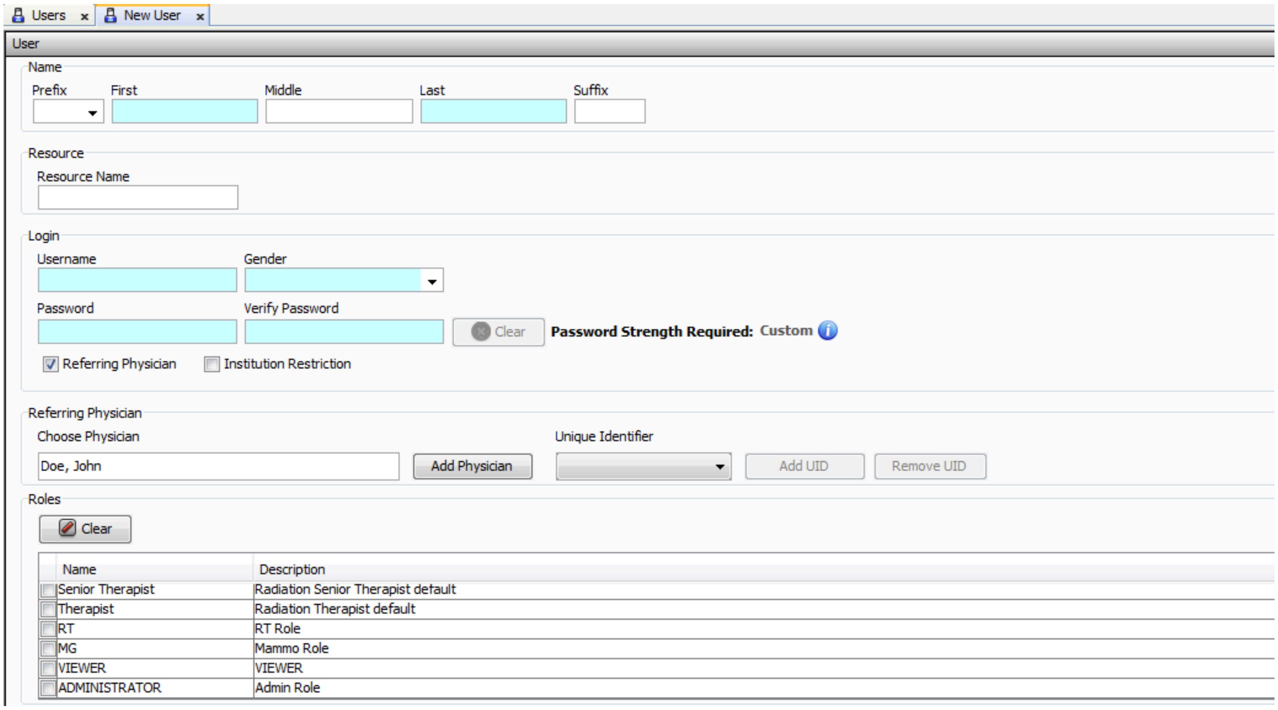


Delete an Existing User

1. Select an existing user from the users table.
2. Click "Delete User" button.

Create a Referring Physician Viewer User Account

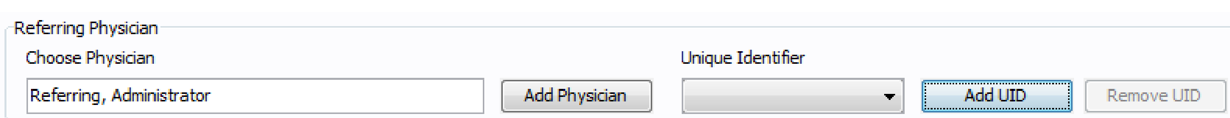
After creating the referring physician viewer roles, a user account can be created. To create a referring physician user account, the ImageGrid system administrator should go to "Manage Users" -> "Add User" and fill all the required fields.



Each referring physician viewer user account is linked to a physician registered in the ImageGrid, in order to limit access to only studies that belong to that physician. The system administrator can register new physicians to the ImageGrid or choose an existing physician to link to.

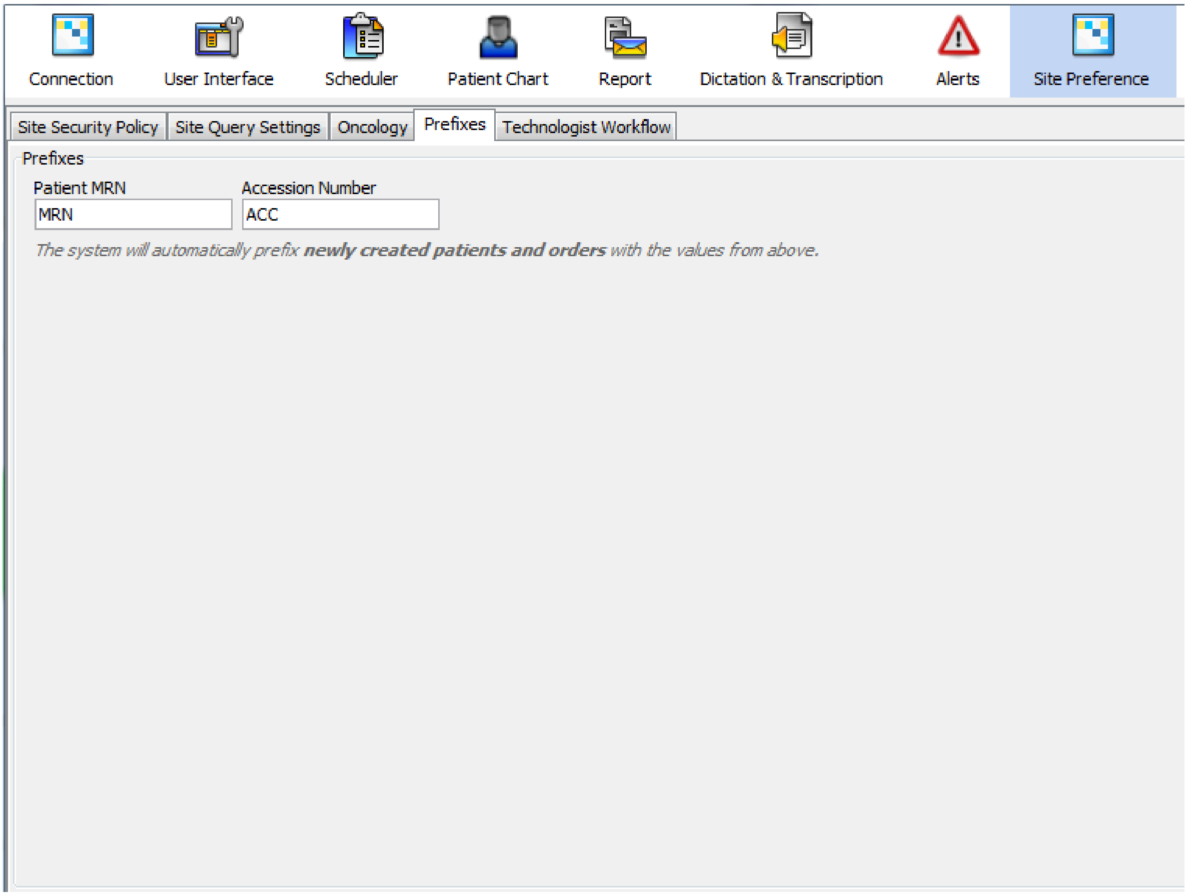
To link the referring physician viewer user account to a physician, type the physician's name into the "Referring Physician" search field. The system administrator can search an existing physician by pressing enter. Each physician can have multiple UIDs. These UIDs are used to identify the "Referring Physician Name" DICOM tag so the referring physician viewer can manage study access. The system administrator can also add new UIDs to the selected physician by clicking the "Add UID" button. Each linking physician must have at least one UID.

As an example, a user can give physician A access to those studies with "Referring Physician Name" DICOM tag value of "XYZ" by selecting physician A in the "Referring Physician" search field, and then adding a UID "XYZ" for it. The "Referring Physician Name" DICOM tag is set by technicians at the modality or by the RIS system. If the administrator wants to give access to multiple studies with different values of this DICOM tag, he/she needs to add them one by one as physician's UIDs.



Site Preference: Prefixes

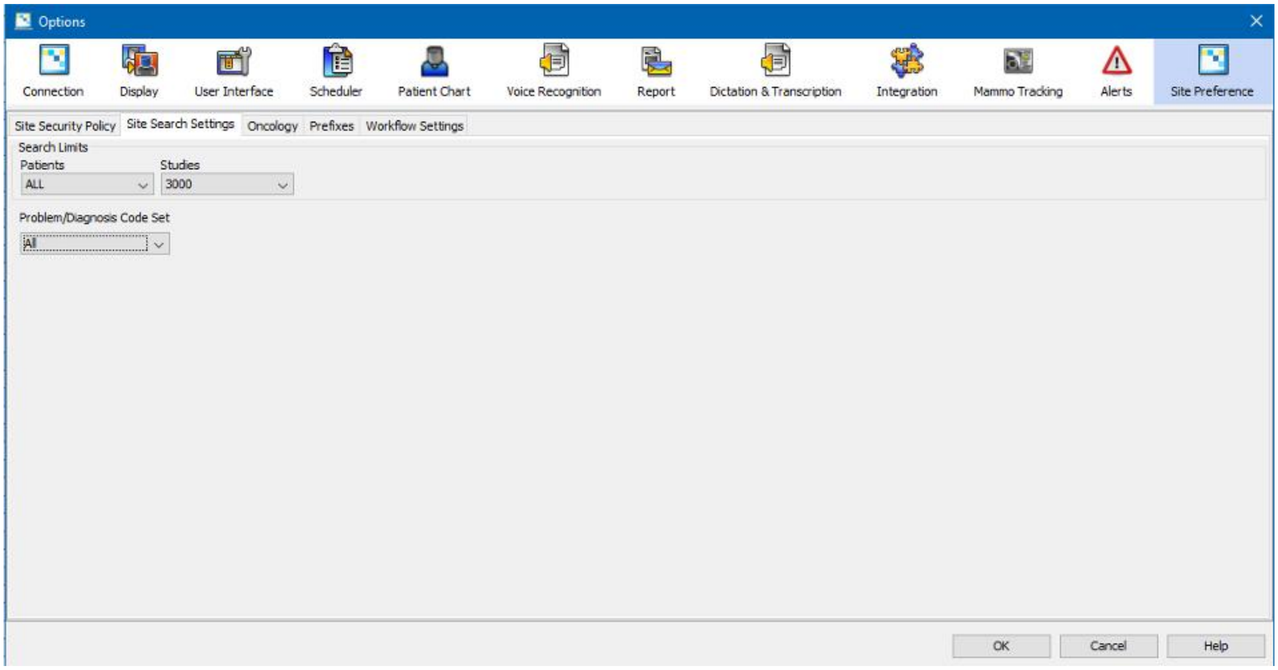
This applies to RIS-licensed systems only



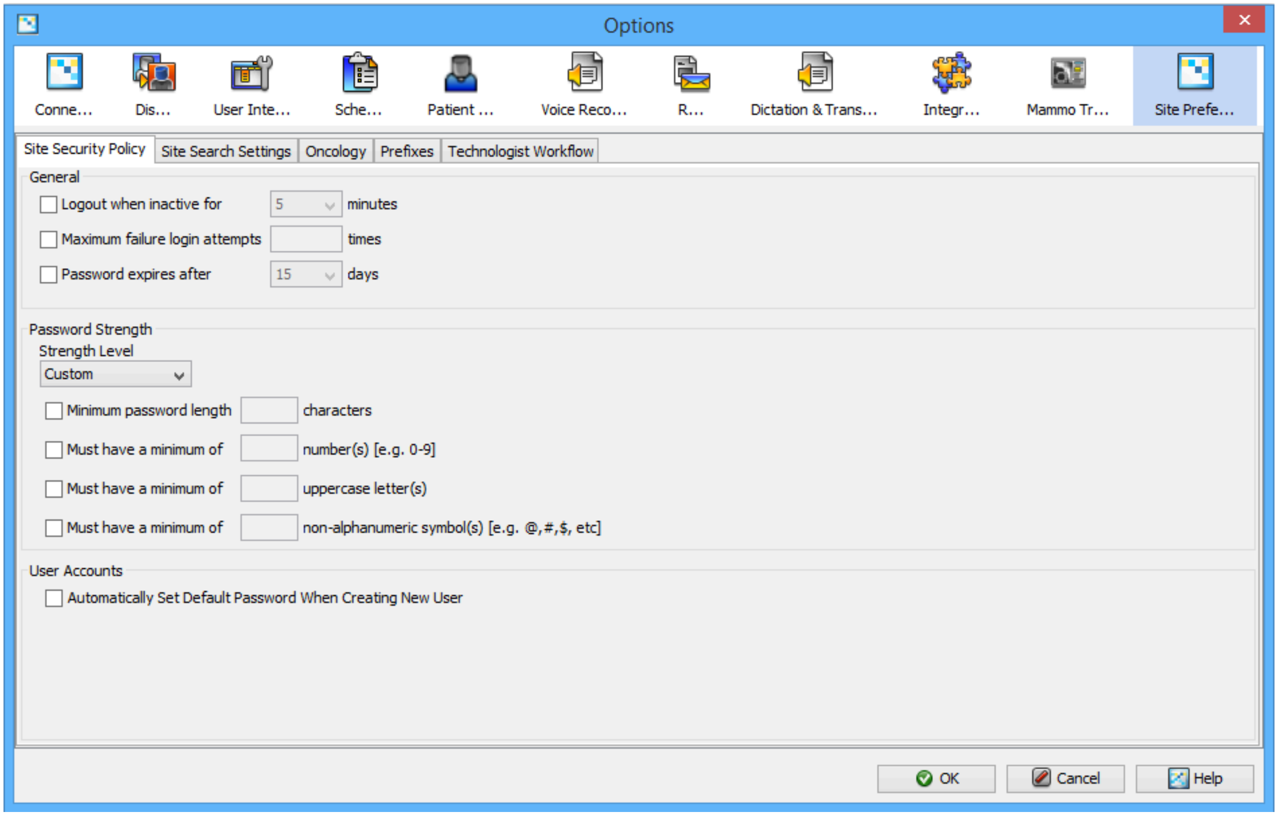
Administrators have the added ability to configure the system to automatically append prefixes to newly created patient MRNs and order Accession Numbers.

Search Settings

Administrators have the capability to change search settings.
Patient search limit defines the maximum number of patients that matches the search criteria.
Study search limit defines the maximum number of studies that matches the search criteria.



Site Security



Administrators have the capability to enable/disable site security options. These options include inactivity timeout period, maximum login attempts and password expiration length.

Password Strength

There is also a Password Strength section where the administrator is able to select a pre-defined password strength (i.e. None, Weak, Medium, Strong) or customize these options:

- Minimum Password Length
- Must have a minimum of # number(s)
- Must have a minimum of # uppercase letter(s)
- Must have a minimum of # non-alphanumeric symbol(s)

Pre-defined Password Strengths

1. **None**
    - Minimum Password Length: **Not Required**
    - No numbers required
    - No uppercase letters required
    - No non-alphanumerics required
2. **Weak**
    - Minimum Password Length: **SIX** characters
    - No numbers required
    - No uppercase letters required
    - No non-alphanumerics required
3. **Medium**
    - Minimum Password Length: **EIGHT** characters
    - Must have a minimum of **ONE** number
    - Must have a minimum of **ONE** uppercase letter
    - No non-alphanumerics required
4. **Strong**
    - Minimum Password Length: **EIGHT** characters
    - Must have a minimum of **ONE** number
    - Must have a minimum of **ONE** uppercase letter

- Must have a minimum of **ONE** non-alphanumeric symbol

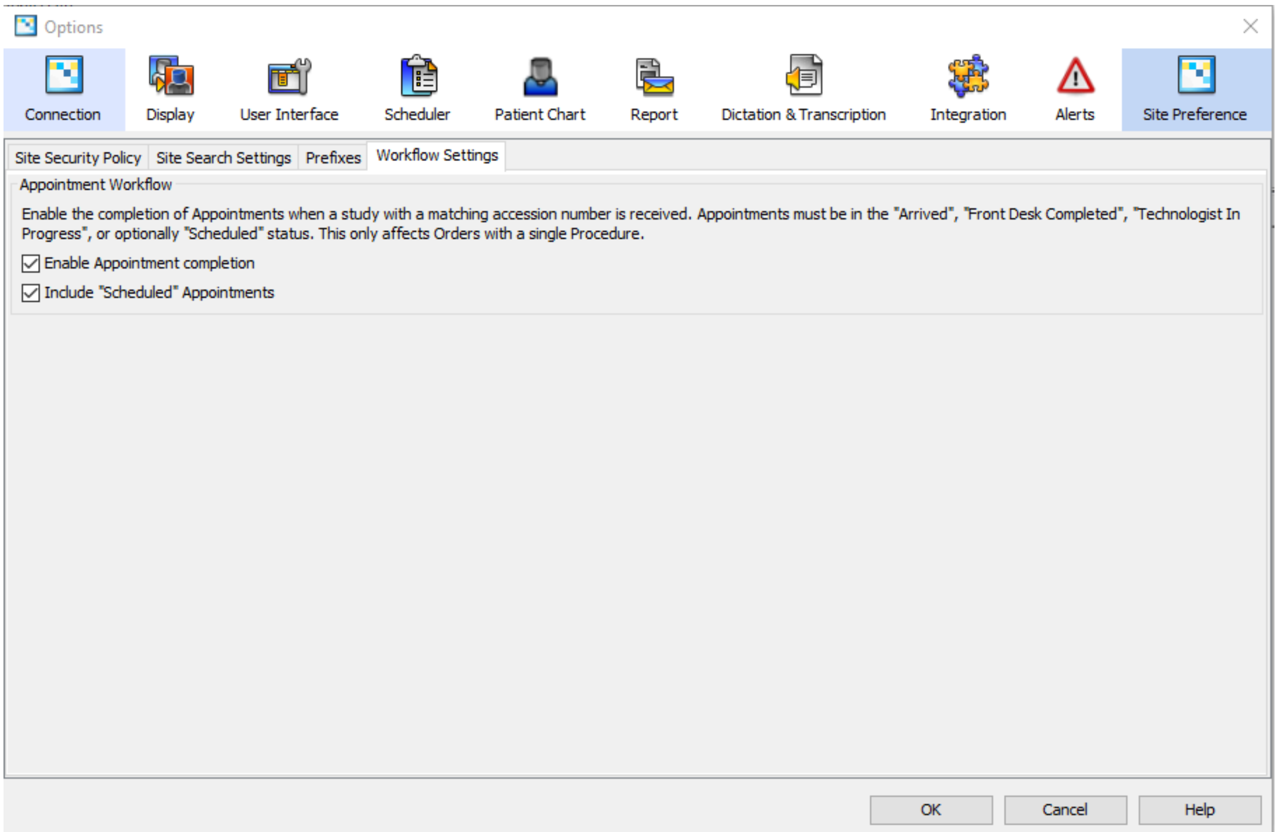
Default Password

There is also an added option for the Administrator to set up a default password when creating a new user. If selected, this default password will be governed by the password strength, if applicable.

Workflow Settings

This applies to RIS-licensed systems only

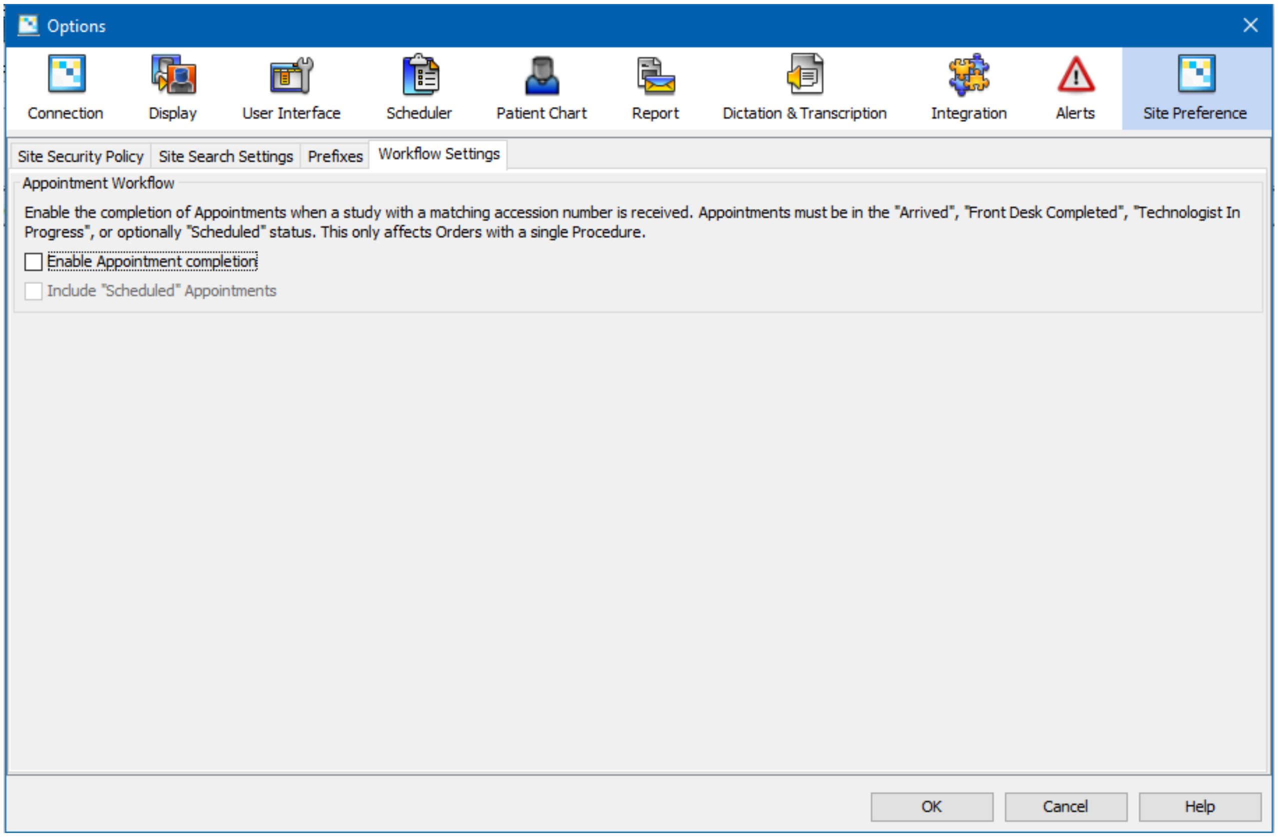
Administrators have the added ability to configure the system to automatically complete appointments when a PACS study is routed to the ImageGrid. This study MUST have the same accession number as the corresponding procedure and **the Order MUST have only one procedure.** The appointment could be completed from Scheduled status if "Include Scheduled Appointments" is checked.



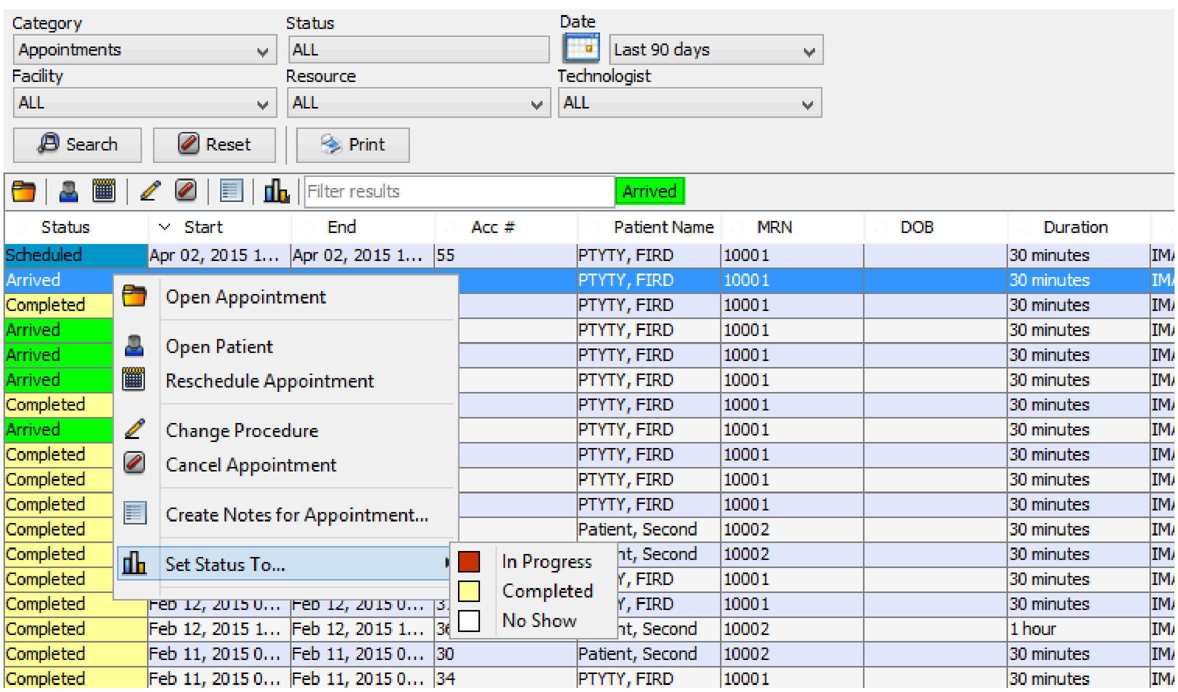
If there are multiple procedures in an Order, then this setting will be ignored when a study comes in.

- For example, if an XRAY of the LEFT Foot and an X-ray of the LEFT Ankle were scheduled under the same order (i.e. accession number), then when either of the studies is pushed into the ImageGrid, the corresponding RIS Appointment will NOT be completed **regardless of the "Automatically Complete Appointment After Study Arrives" checkbox being checked**; the technologist will need to manually complete the appointment from the "Appointments" Worklist.

This option can also be de-selected, the "Include Scheduled Appointments" will be disabled. The technologist have to manually complete the appointment from "Appointments" Worklist..



"Appointments" Worklist



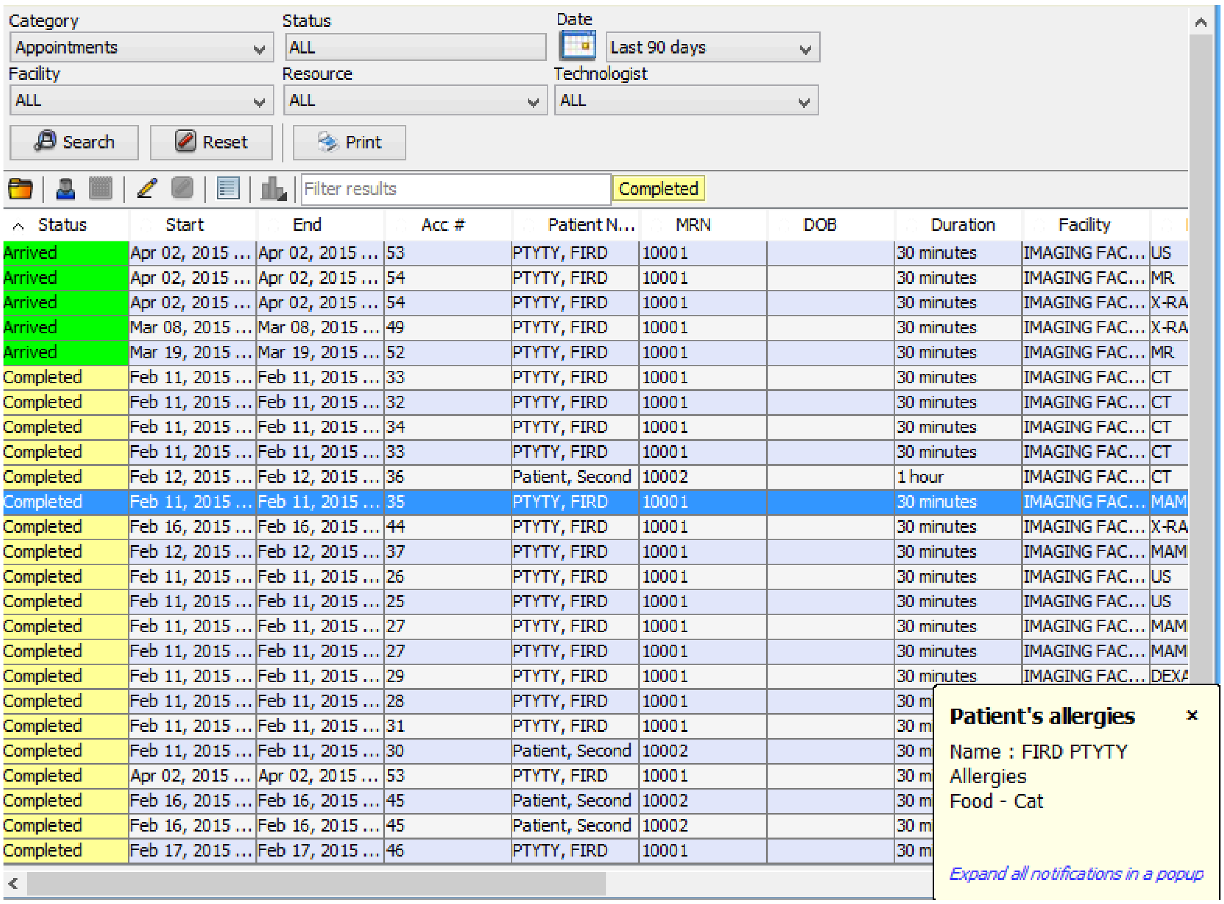
Introduction

Alerts are a feature where the user can be informed of details of a patient or other entity that may not be readily visible or accessible. They are generated automatically upon certain user actions and are triggered using a subscription based model.

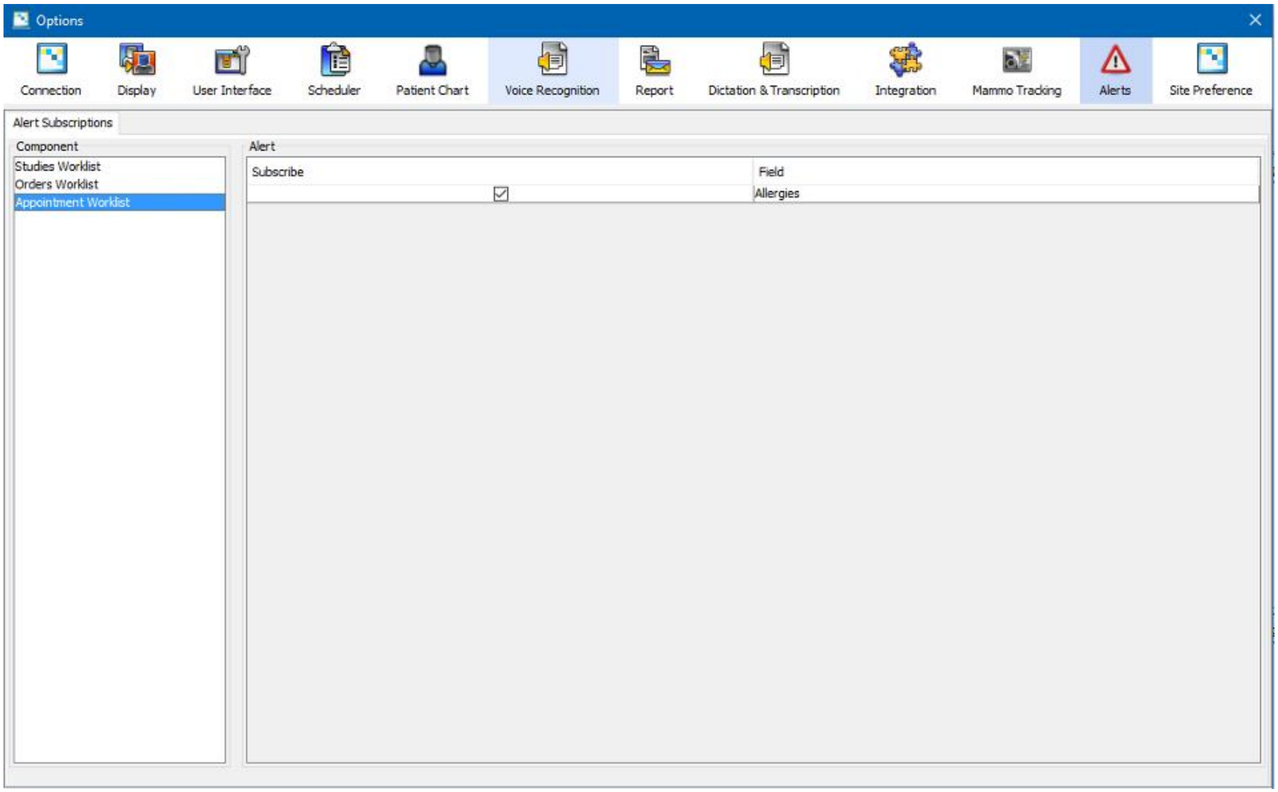
Alert subscriptions are divided into two parts:

- User interface component (e.g. Appointment worklist, Scheduler)
- Field (e.g. Allergies)

Example



In this example, the user wants to know if a patient has an allergy without having to open the patient chart. If the user wants to be notified in the appointment worklist upon clicking an entry in the table, the user can simply subscribe to an alert by navigating to the options dialog in Tools->Options and going to the Alerts tab.



Here, the user can see the list of available components on the left, and a list of available alert fields to the right. Clicking the subscribe check box (in this example, it is the "Allergy" field in the Appointment Worklist) and saving the changes will enable the user to see any applicable alerts in the future.

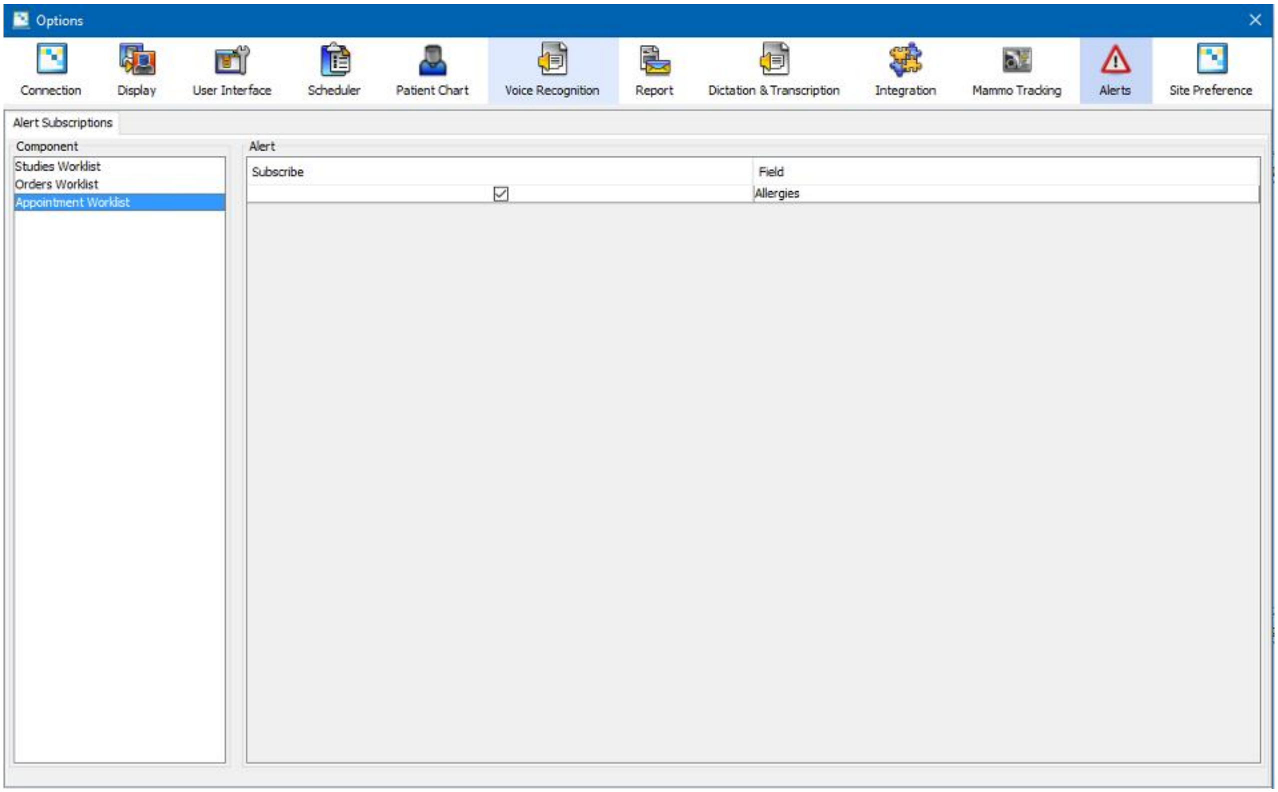
When a patient with an allergy is selected in the subscribed worklist, an alert box will pop up notifying the user.

More Information

For more information about alert subscriptions, please see the Alert Options page.

Alert Configuration

Each user is provided with the capability to change the alert option if permitted. He can do that in the Manage Roles module.

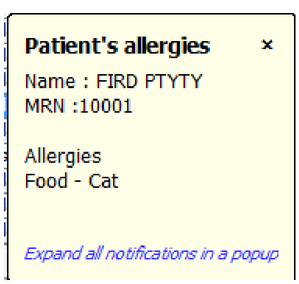


Alerts are configured using a subscription-based model and the user is free to add alerts for actions from a list of available alerts.

Alerts will be generated and displayed upon clicking on an item in the component. For example, clicking on a table entry in the worklist will show an alert for that patient or order depending on the type of worklist.

When the desired alerts have been selected click "OK" to save the preferences.

When there is an alert to display it will look like something like this:



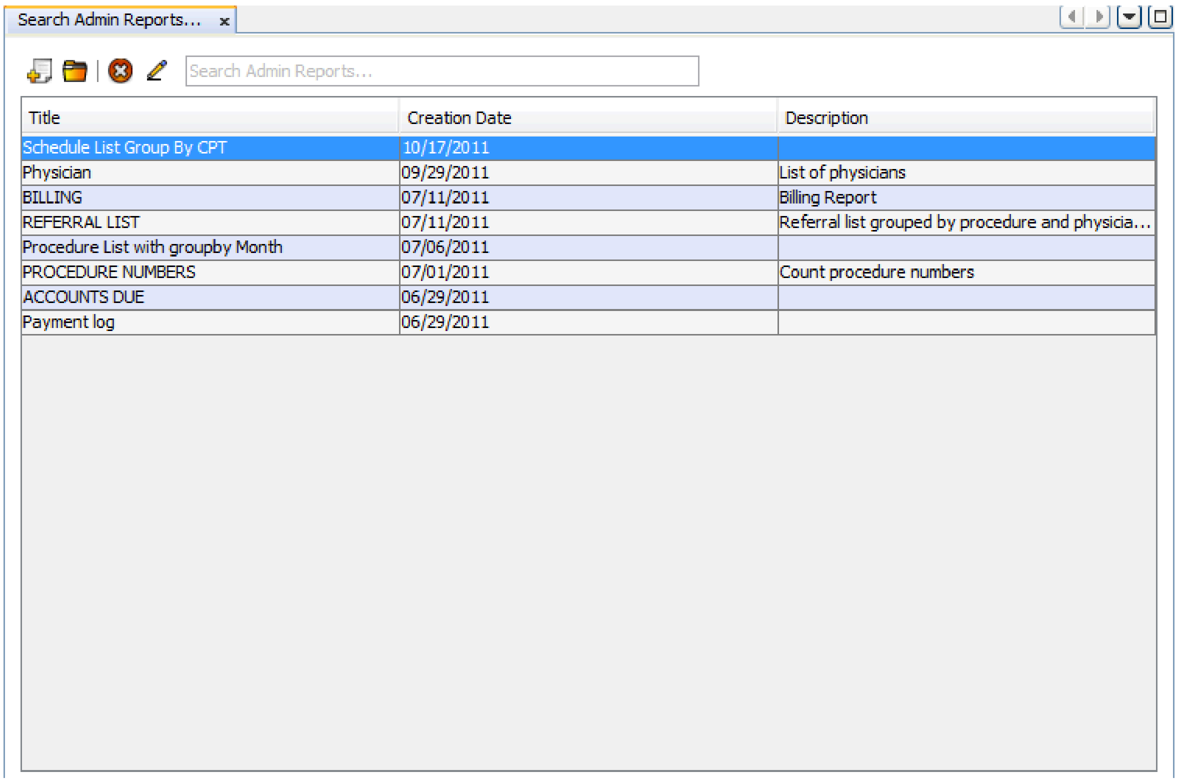
Notes

- If an action has at least one alert type available, its font is in italic.
- Different actions will have different alert types available. For example, not all worklists will have a "Patient's allergies" alert available.
- The displayed text in an alert cannot be configured at this time.
- If the alert is not activated (checked), it will not be generated.
- If there is no relevant information to display, no alert will be generated.

Introduction

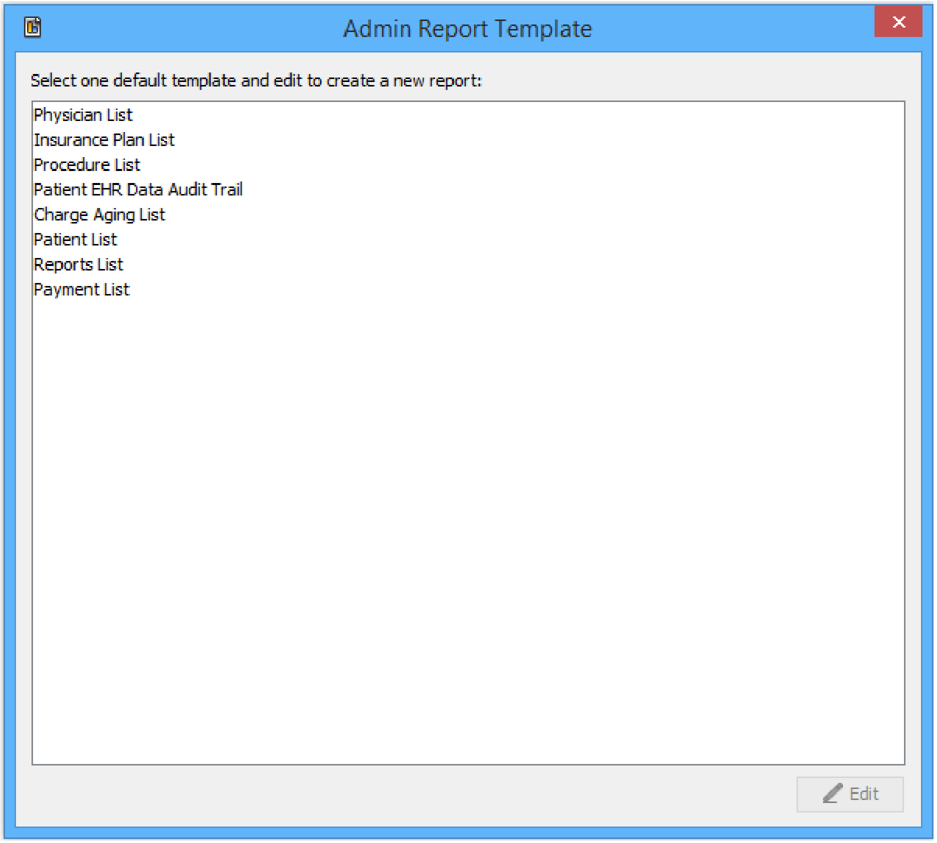
The Admin Report module helps to create daily/monthly/yearly reports. It will allow the user to modify the criteria of searching and filtering the database, and it will provide the functionality of exporting and printing the searching results. The user-designed report can be saved and re-used.

Tools->Admin Report



Setting Up: Designing a new report

1. click  to add new report:



Default Templates

- Procedure List
- Payment List
- Charge List etc.

2. Navigate to Column Candidates Editor

3. Drag and drop to select columns and group by fields

4. click 

, an Admin Report Editor will show up.

5. Add the Report Title and Description

6. Edit the Filters and Sorting Columns.

7. Click Save to store the customized Admin Report in the system. Next time when you open the Administrative Reporting Module, you will see the newly created report in the list.

Get Search Results Using Existing Report

1. Navigate to Tools->Admin Report

2. Select the existing customized report

3. Double click or click

4. Click Search on the Admin Report Editor. Results will show on the result panel.

Edit an Existing Report

1. Navigate to Tools->Admin Report

2. Select the Existing Customized Report

3. Click Edit

4. On the Column Candidates Editor, drag and drop to update/remove the columns to include in the report.

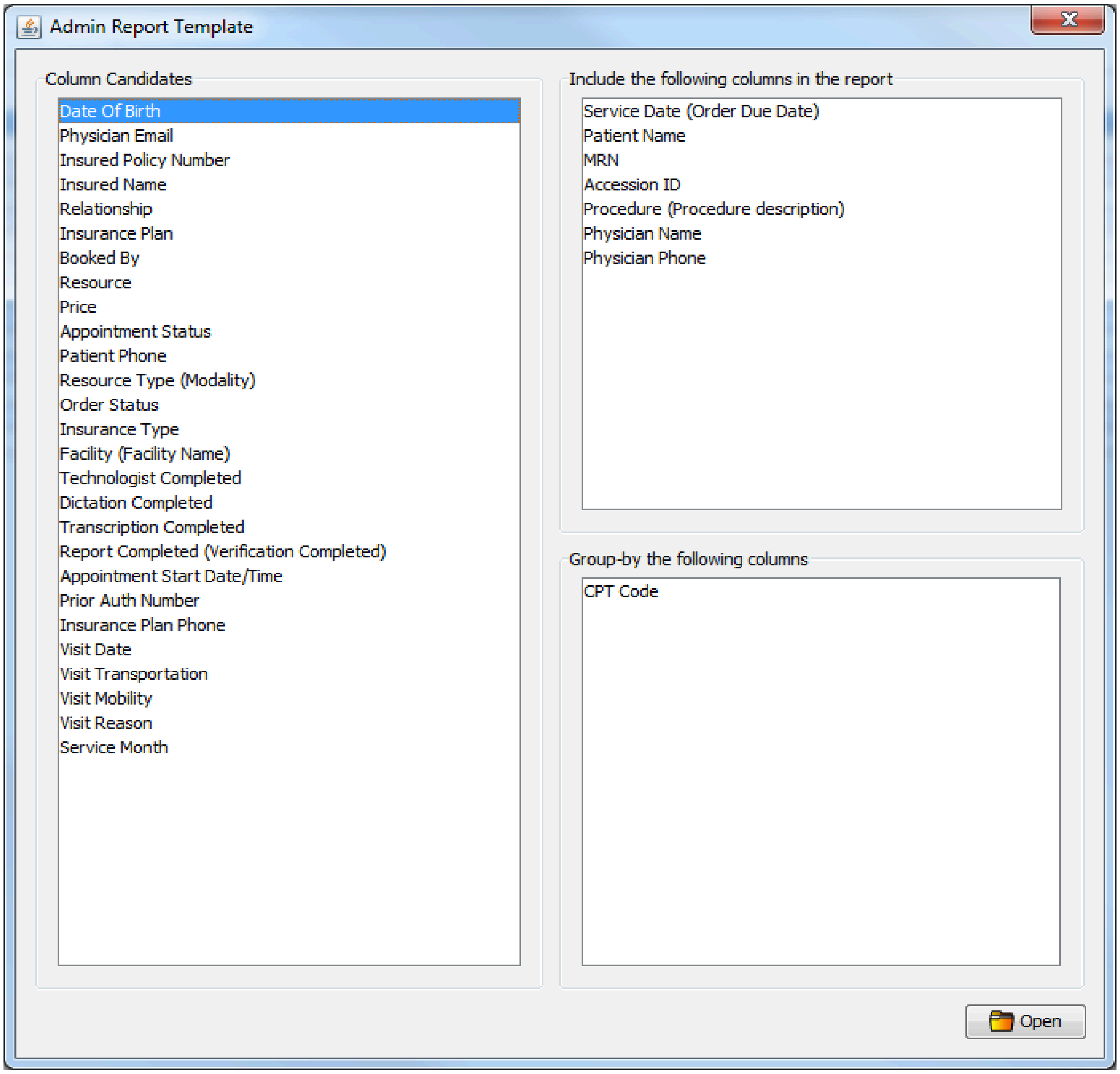
Delete an Existing Report

Navigate to Tools->Admin Report. Select the existing customized report and click the "Delete" button.

Review, Export and Print Search Results

For Details, see Admin Report Editor

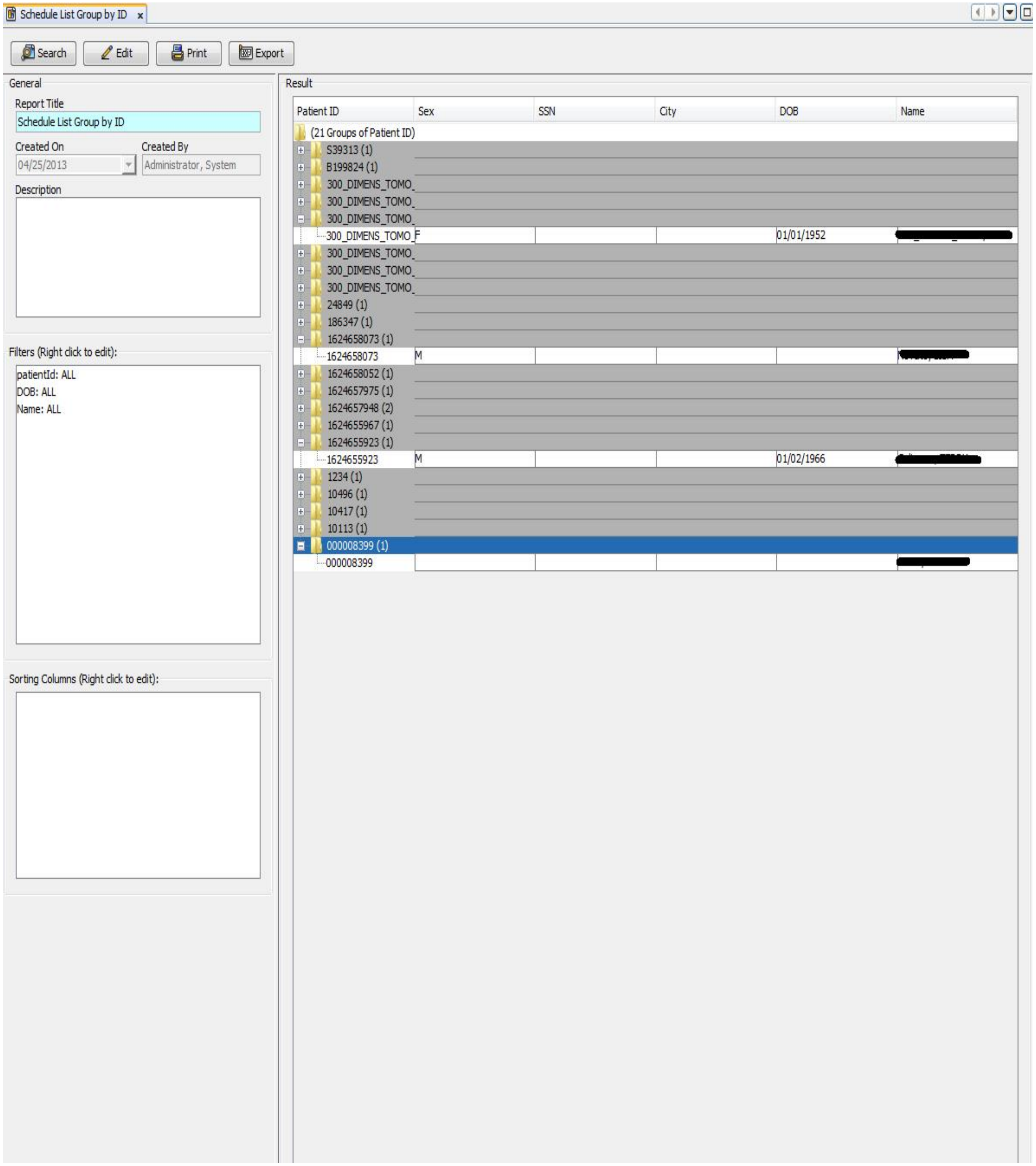
Column Candidates Editor



Select columns, drag and drop to edit the template.

Click Open to the next step: Edit report title, description, filters and view search result.

Admin Report Editor



Edit Admin Report

You can edit and save the following contents:

- Title
- Description
- Filters(Right click to edit the filter)
- Sorting columns(Right click to add or delete the sorting column)

Search and review result

Click Search, the result is showing on the left side

Edit columns

Click Edit to change the columns in Column Candidates Editor

Export result

Click Export, choose the local folder you want to save the result, and it will be exported as a .csv file

Print result

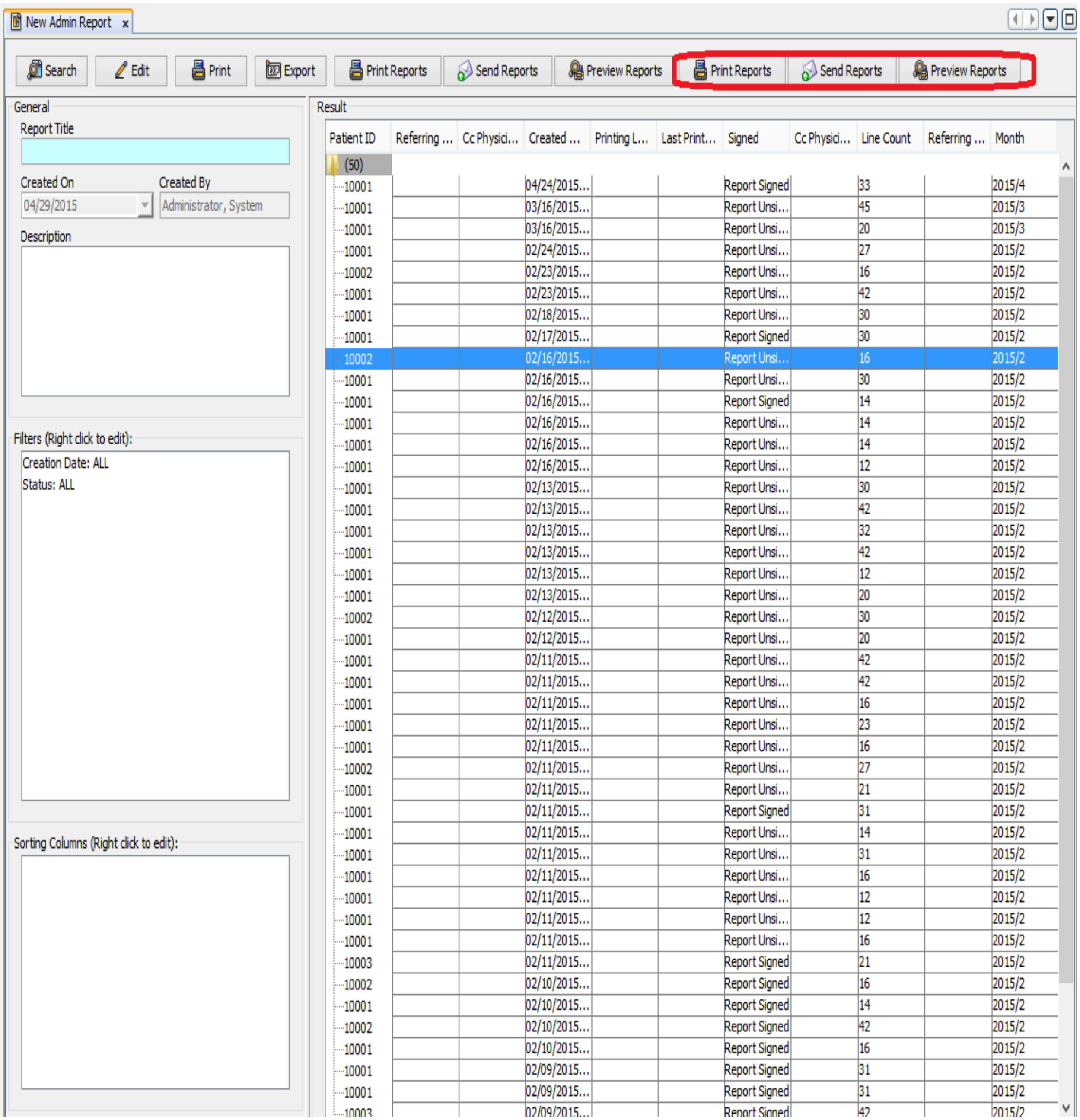
Click Print, the result will be printed as a form.

Navigate to corresponding data form

Double click any search result row, the corresponding data form will show up.

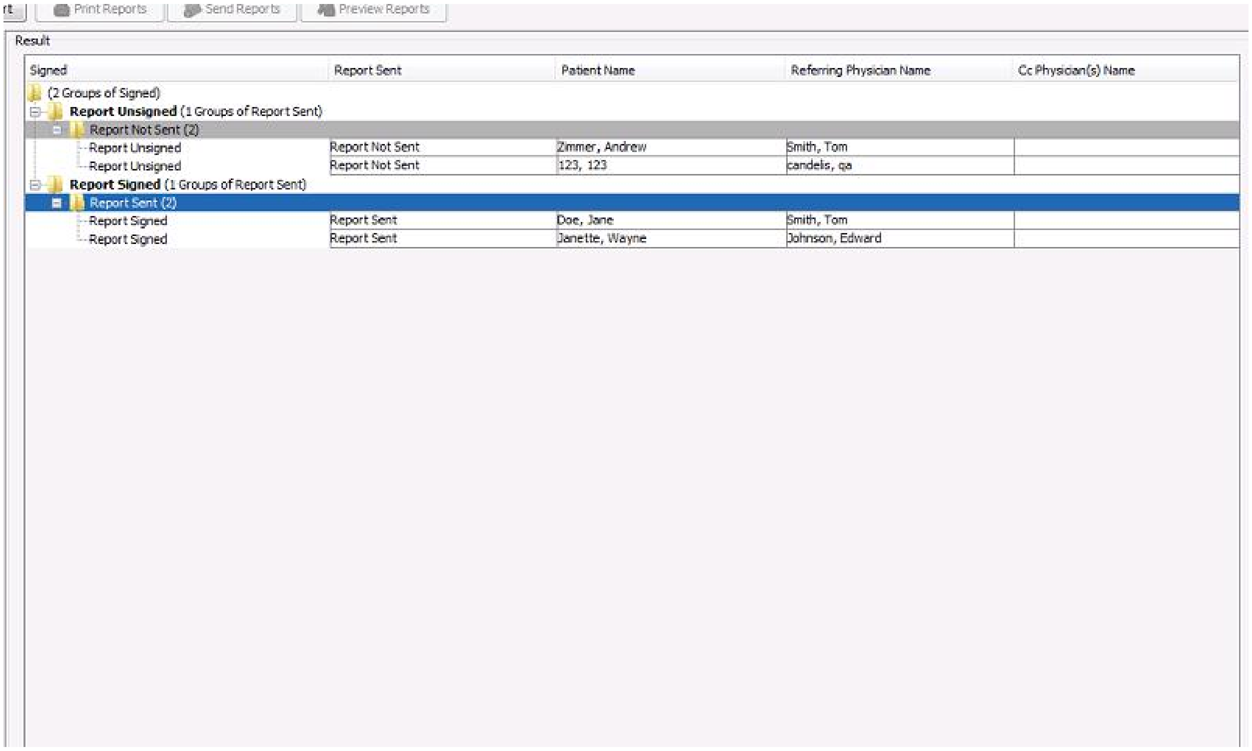
Batch Processing Reports.

The Admin Report Template "Report List" provides the ability to easily print or send multiple reports at a time.
Before performing the actual print or send the option is available to preview the selected reports using the "Preview Reports" button.
Clicking the "Print Reports" button will print out all selected reports to the default printer.
Clicking the "Send Reports" button will send all of the selected reports to their appropriate referring physicians using the method
specified for the referring physician (fax or ASTRA).
See "Batch send report setup" for step by step instructions on how to setup and perform batch processing on reports.



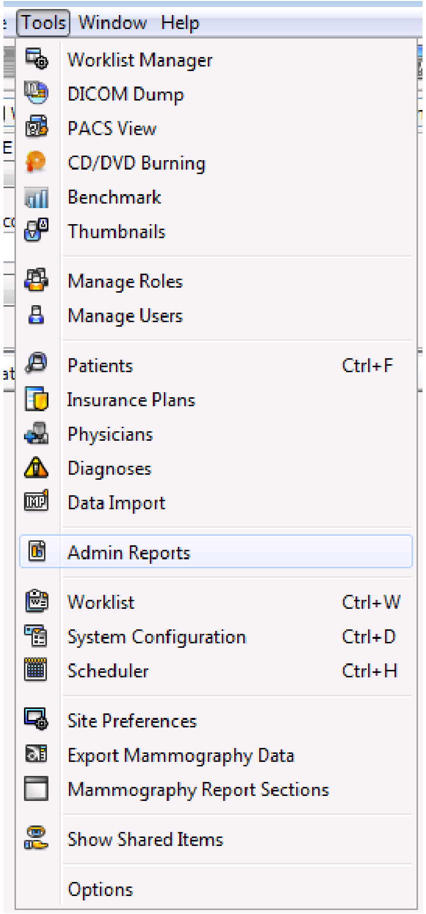
Convenient listing of sent/unsent reports

The following steps will show how to setup an administrative report that lists reports grouped by signed/unsigned, and then by sent/unsent categories.

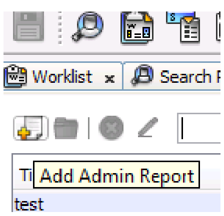


Select Reports List

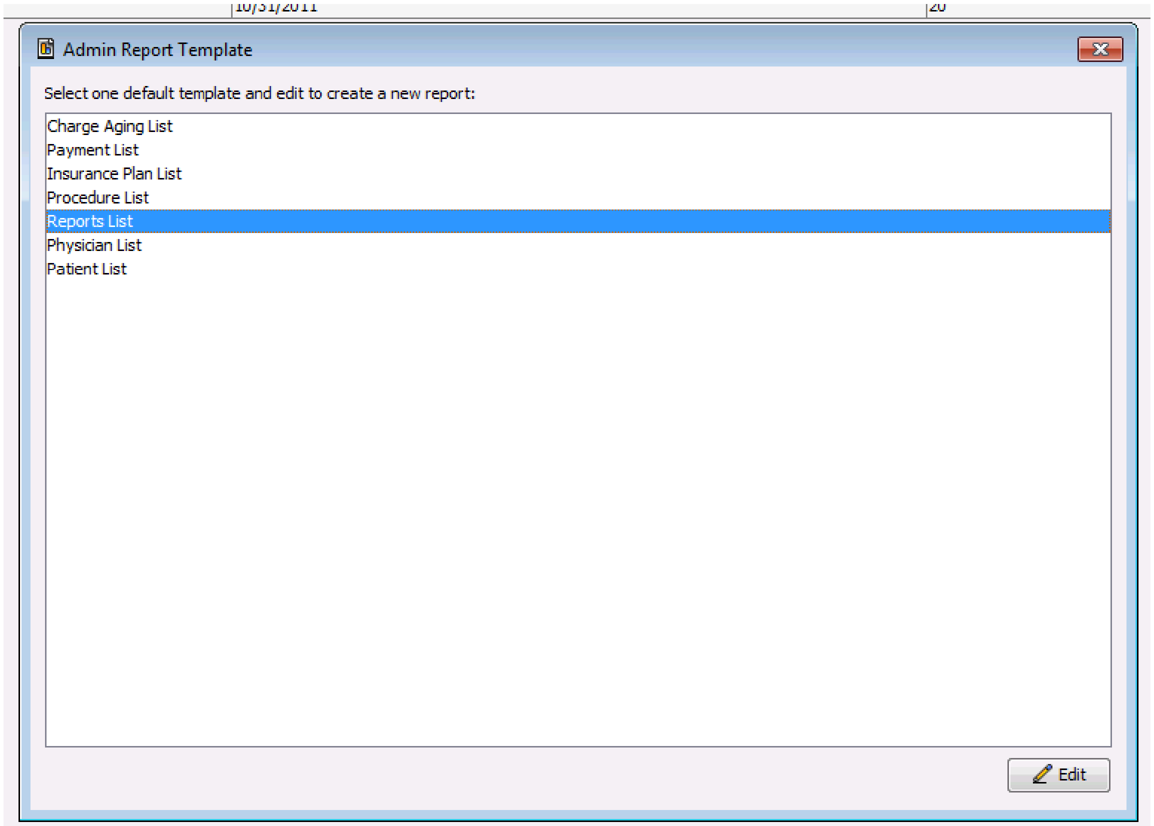
On the main toolbar click on Tools then Admin Reports.



Click on the new report button.

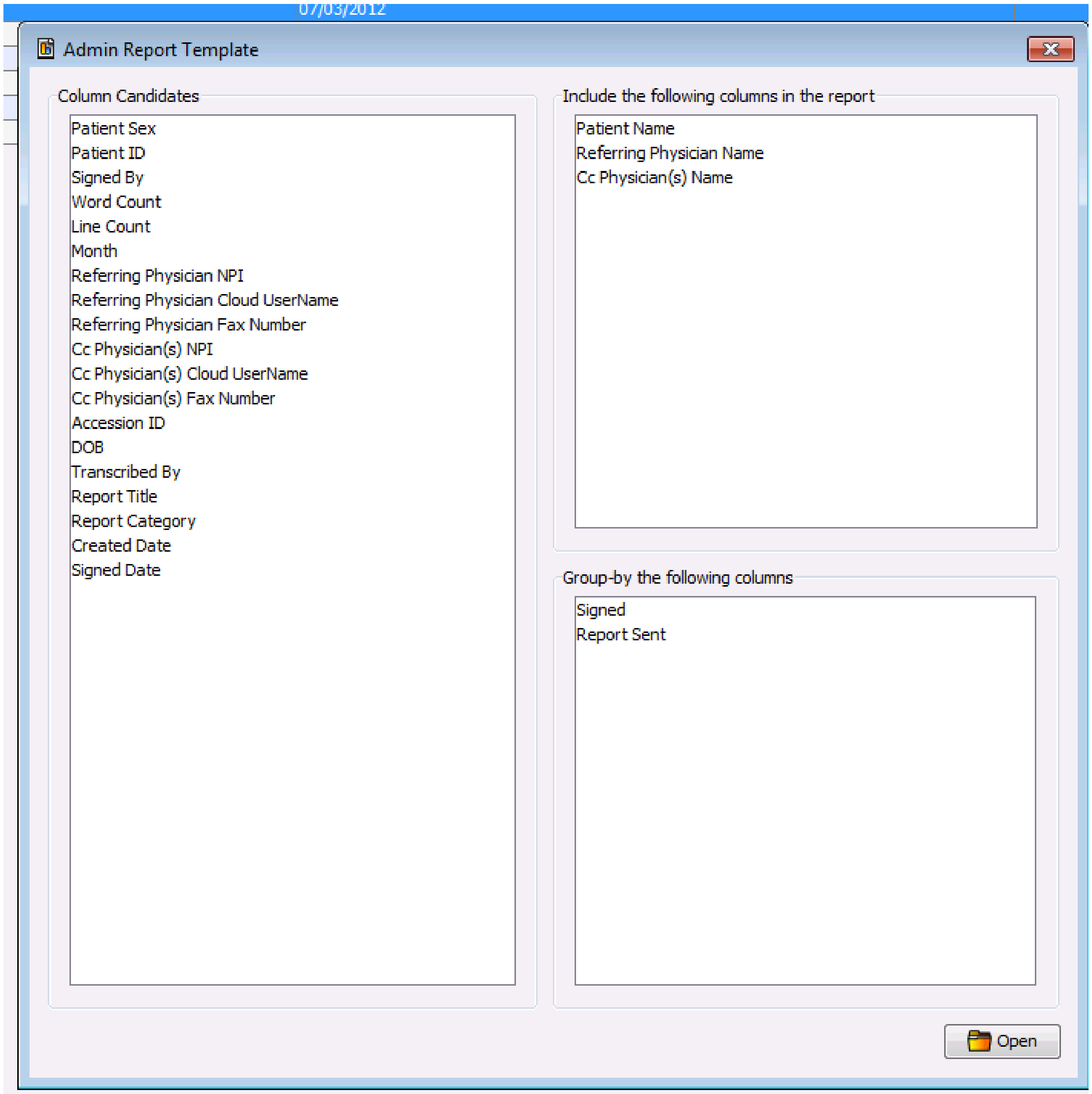


Select Reports List.



Select Columns

From the Admin Report Template dialog, drag Patient Name, Referring Physician Name, and Cc Physician Name to the top right text box, and drag Signed and Report Sent to the bottom right box.



Click on the Open button.

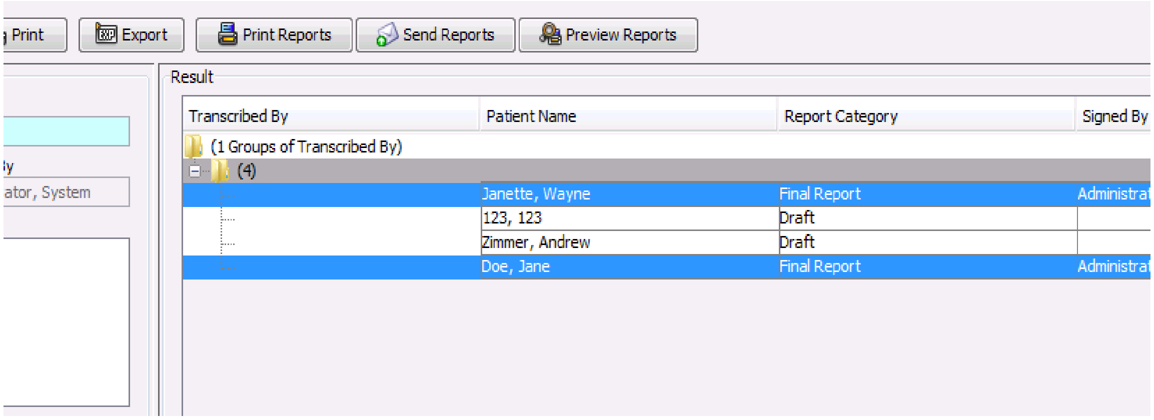
Search

Click on the Search button, and the reports will be retrieved and grouped by first Signed/Unsigned then by Report Sent/Report Not Sent attributes.

After searching for reports, in the table multiple reports can be selected, by holding the shift or control button down and clicking on the table rows.

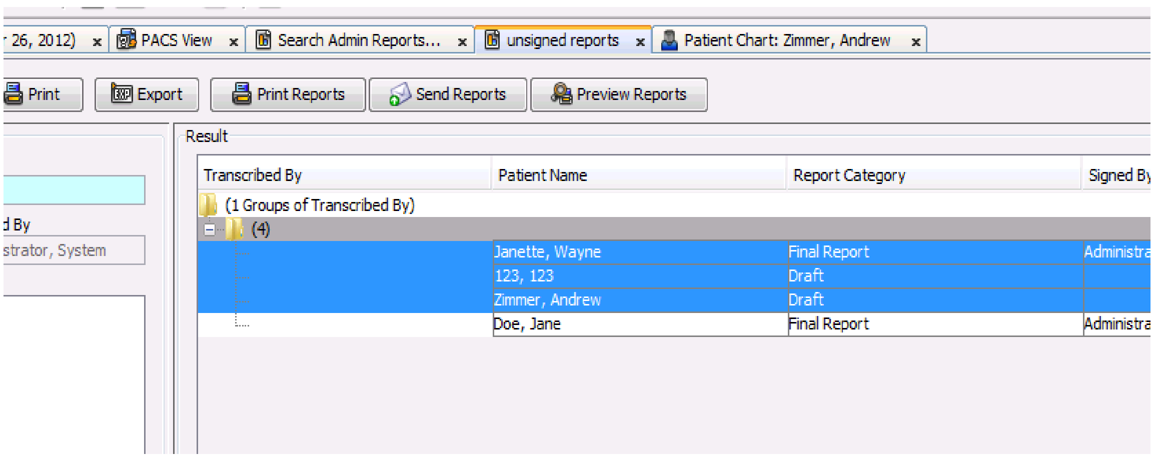
Selection with Control button

Holding down the control button, you can select individual rows:

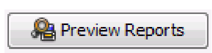


Selection with Shift button

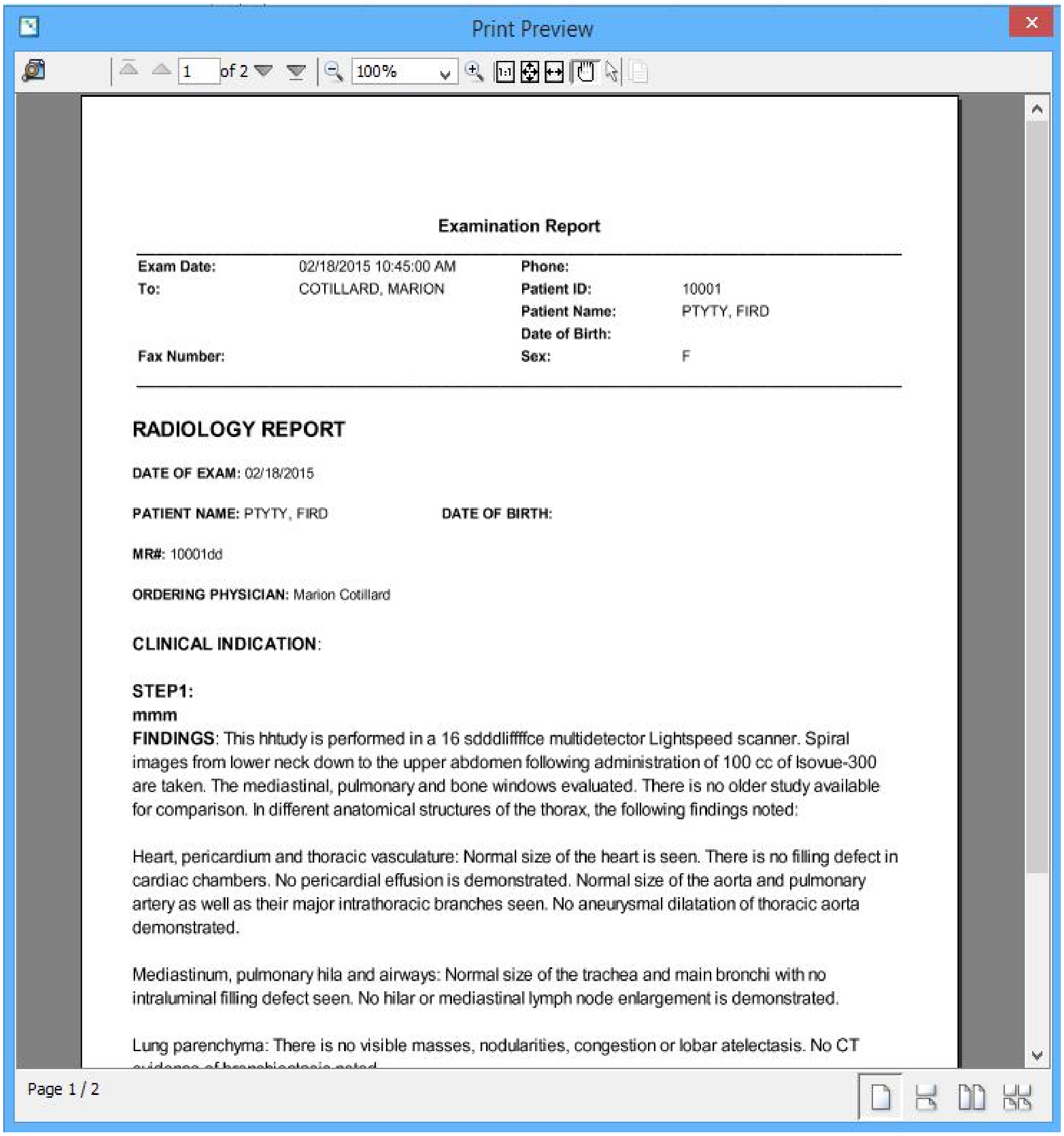
Holding down the shift button, you can select consecutive rows:



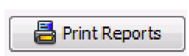
Batch Preview

After reports are selected, pressing the Preview Reports button 

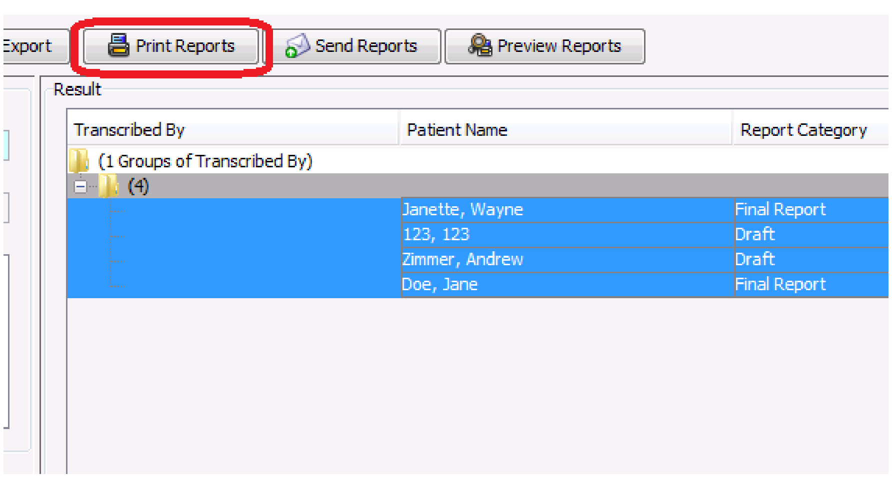
will allow all of the selected reports to be previewed one page at a time.



Batch Print

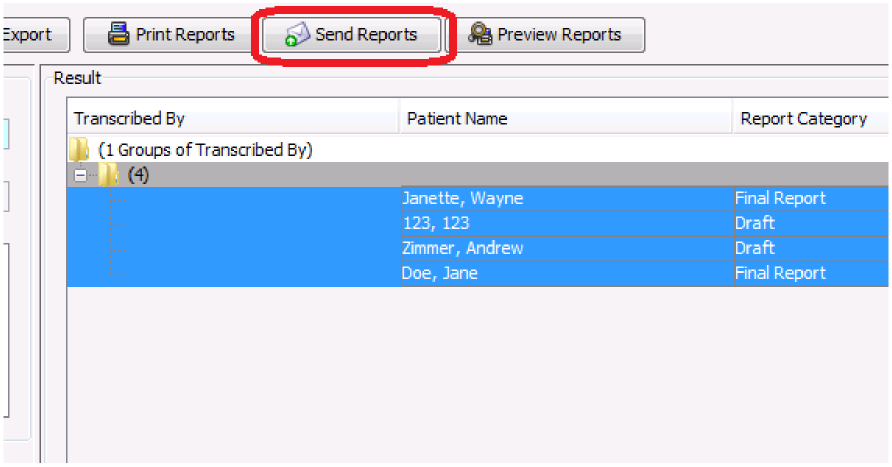
Once reports are selected, pressing the Print Reports button 

will print all of the selected reports.

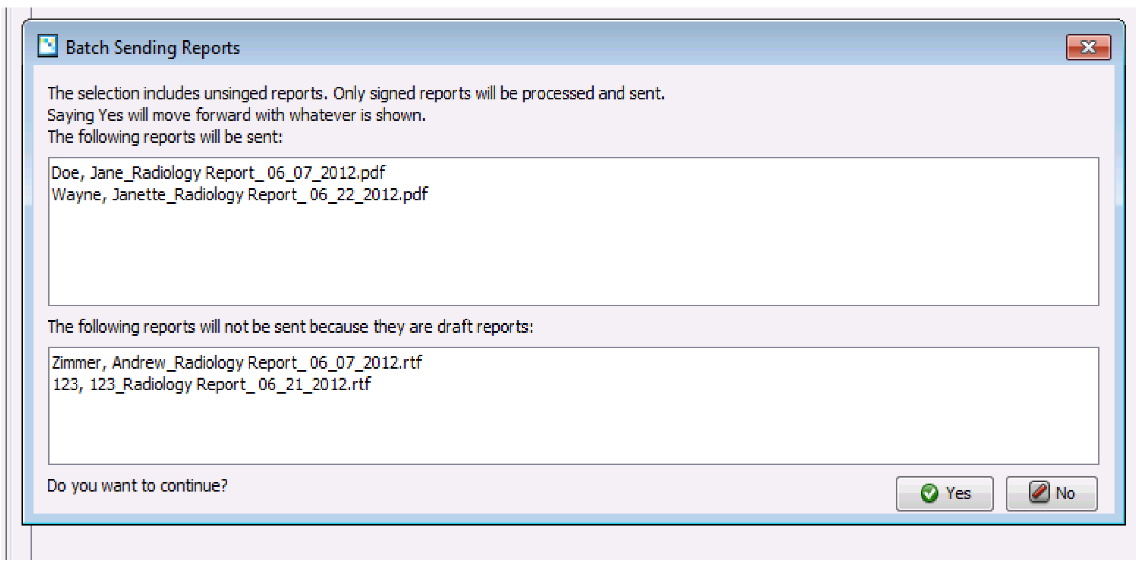


Batch Send

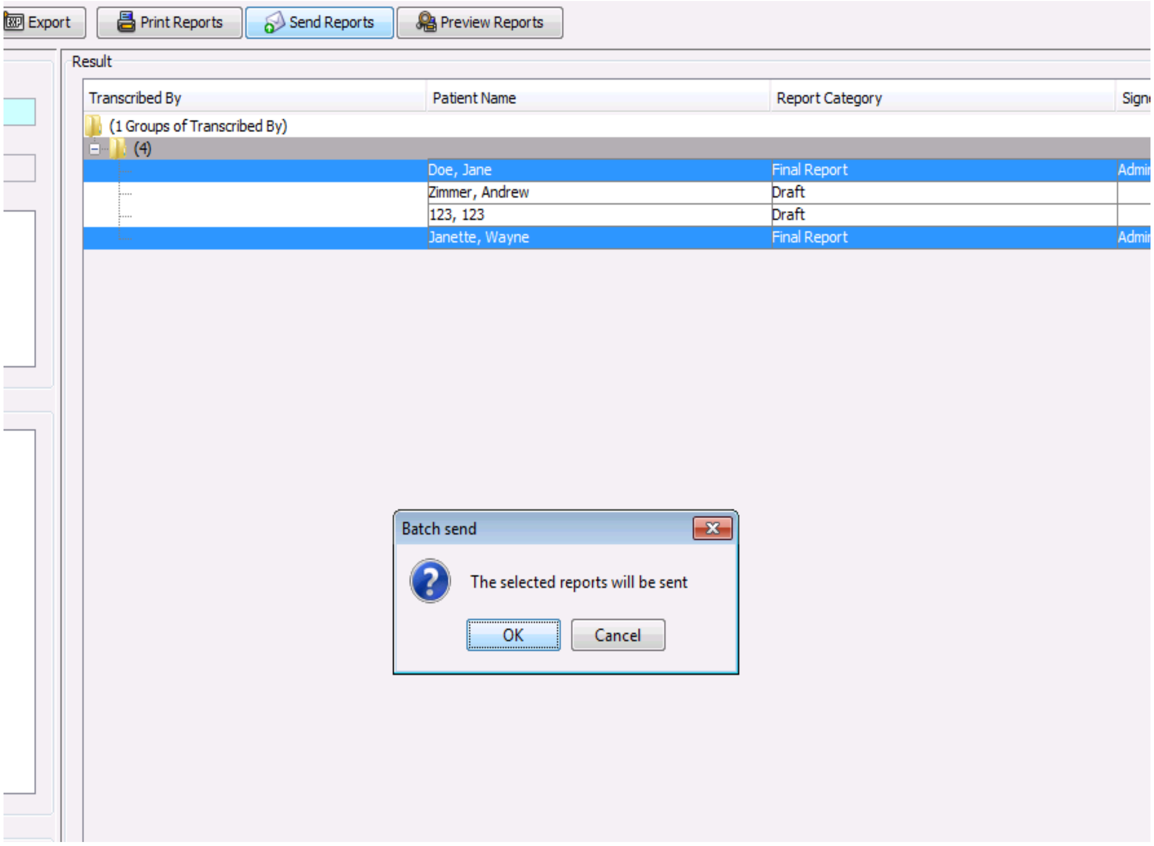
Once reports are selected, after pressing the Send Reports button  , the selected reports are inspected for any drafts.



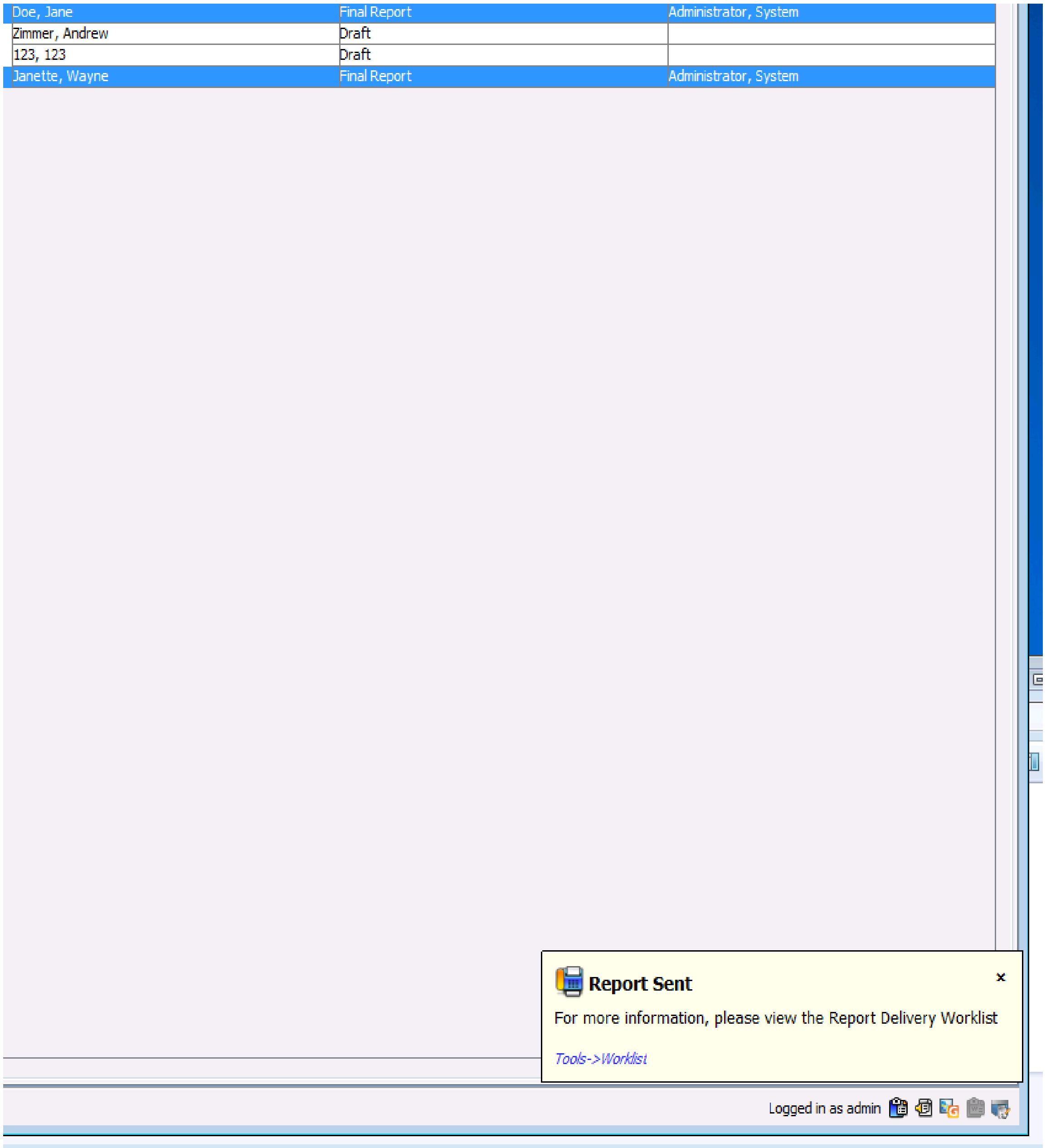
If drafts are included in the selection, a notification dialog will appear. Displaying the draft reports that will not be sent.



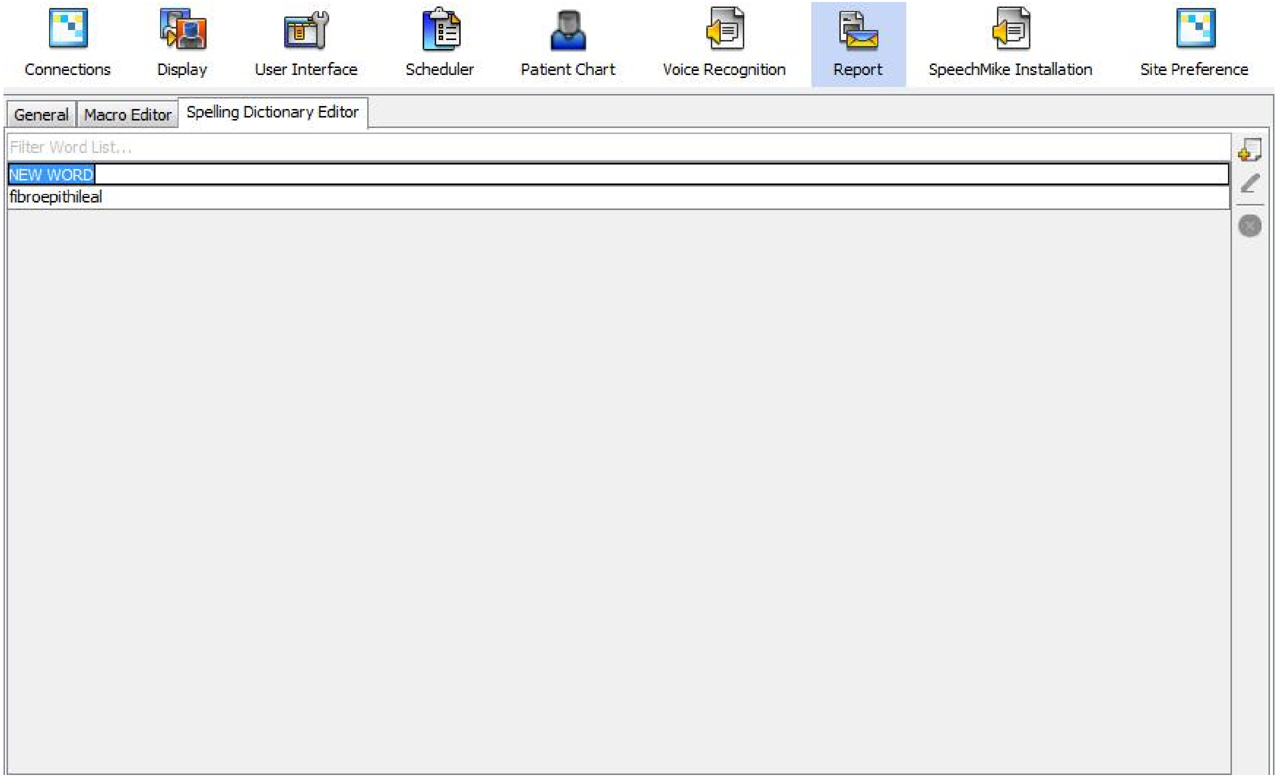
Draft reports cannot be sent. Reports that cannot be sent are displayed in the bottom text field. Clicking yes will remove these reports from the selection.



Notification appears once all the reports have been processed.

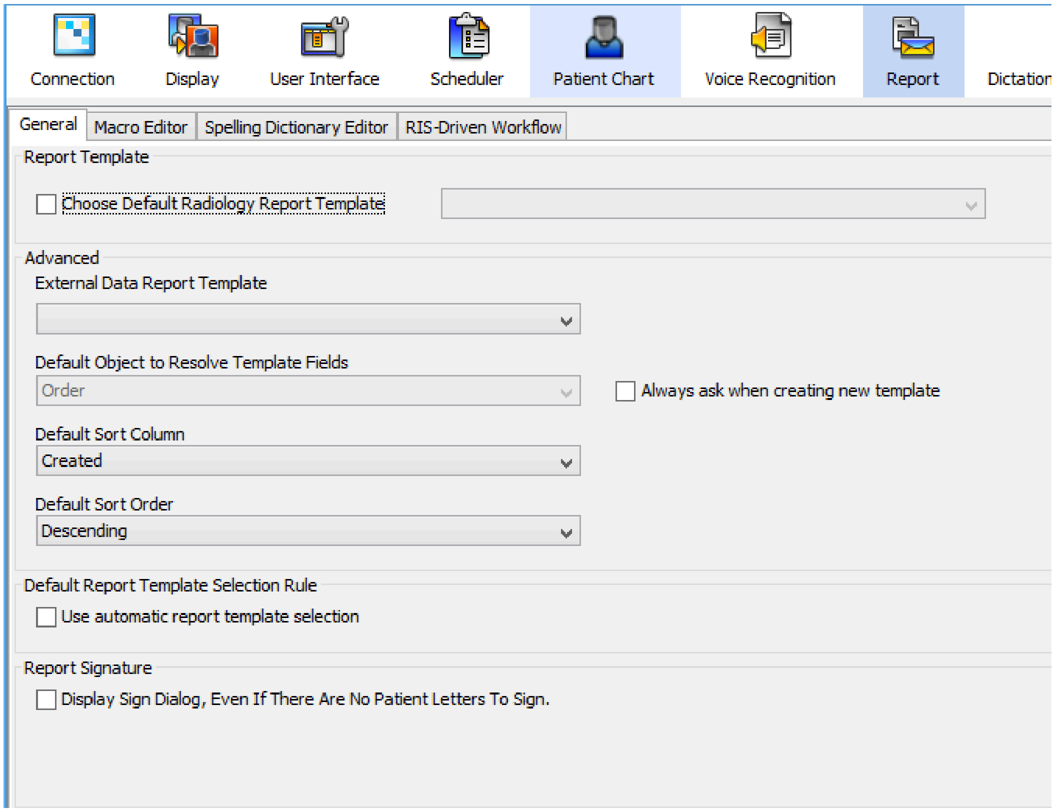

Doe, Jane
Final Report
Administrator, System
Zimmer, Andrew
Draft
123, 123
Draft
Janette, Wayne
Final Report
Administrator, System
Report Sent
For more information, please view the Report Delivery Worklist
Tools->Worklist
Logged in as admin

Spelling Dictionary Configuration



The Report Options Tab allows for the configuration of adding, deleting, or modifying words into the IGPlatform Spelling Dictionary.
This is the configuration page for adding new words to the spelling dictionary so that future reports will not throw a red flag for that particular when a spell check is triggered on the report.

Report General Options



The Reports Options Tab allows the user to be able to configure the below option(s):

- **Default Radiology Report Template**
  The user (radiologist/transcriptionist) has the option of choosing a default radiology report template when double-clicking on a study. This is a convenience preference for the user who uses the same template most of the time and would like to by-pass the template choosing process.

- **External Data Report Template**
  Used in conjunction with an inbound HL7 configuration, this configuration allows the system to be configured with a pre-made report template that has an auto-field of an external RTF file coming from an inbound HL7 message.
  Important: RTF is the only file format accepted for this type of configuration

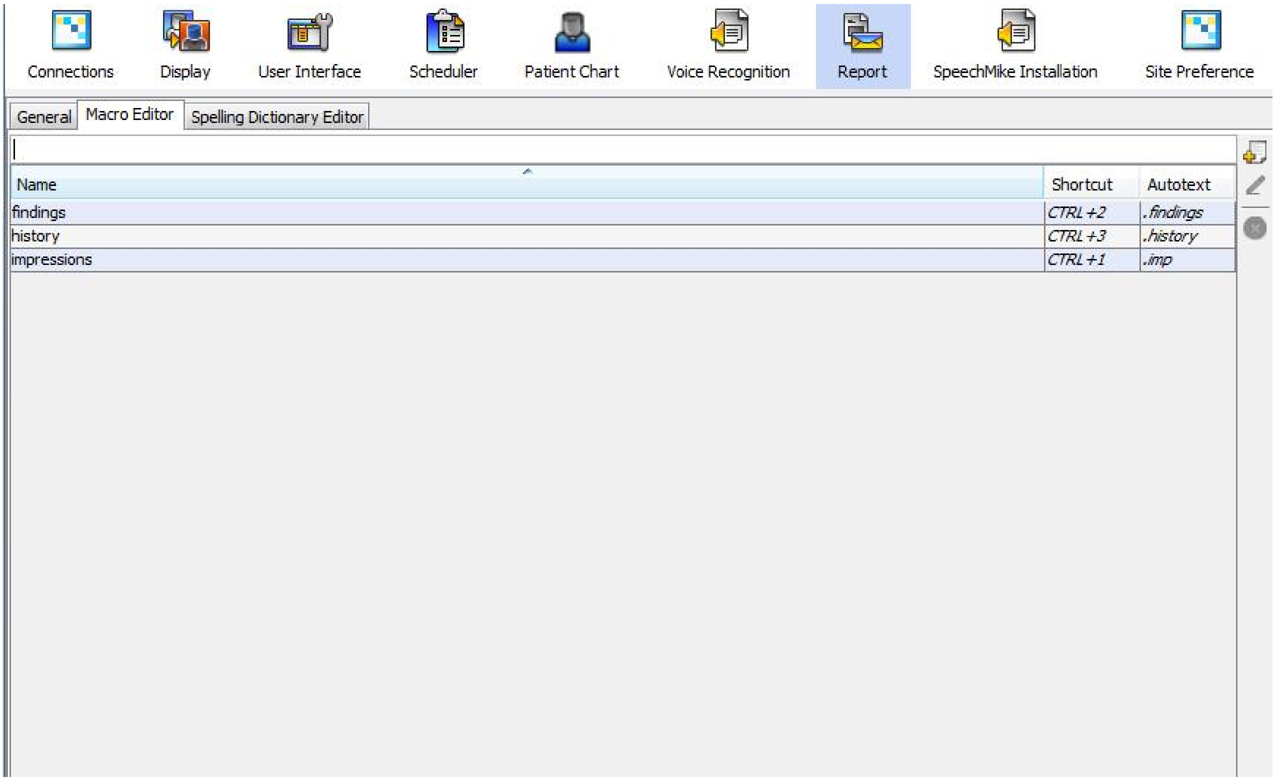
- **Default Sort Column**
  The user (radiologist/transcriptionist) has the option of choosing a default column to sort radiology reports. The default sort column can be the report date creation , the report title or the report category. This configuration is applied to the radiologist workspace reports and to the Order reports and letters.

- **Default Sort Order**
  The user (radiologist/transcriptionist) has the option of choosing a default order to sort radiology reports. The default sort order can be ascending or descending. This configuration is applied to the radiologist workspace reports and to the Order reports and letters.

- **Default Report Template Selection Rule**
  The user (radiologist/transcriptionist) has the option of choosing to use an automatic report template selection. This configuration is applied to the Order reports and letters.

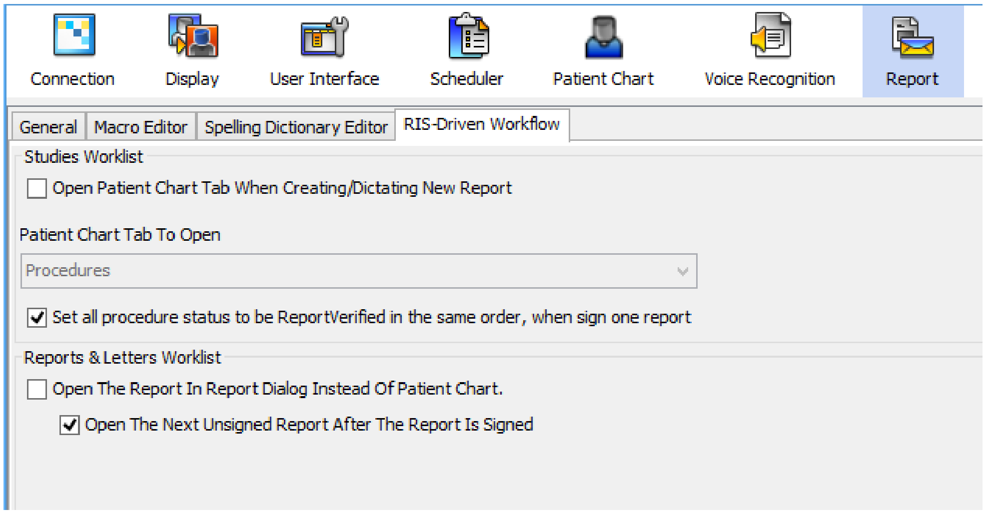
- **Report Signature**
  The user (radiologist/transcriptionist) has the option of choosing to display a sign confirmation dialog for Patient letters even if there is no letter to sign.

Macros



The Report Options Tab allows for the creation, deletion and modification of macros.
For more information on macros, please refer to Report Management: Macros.

RIS-Driven Workflow



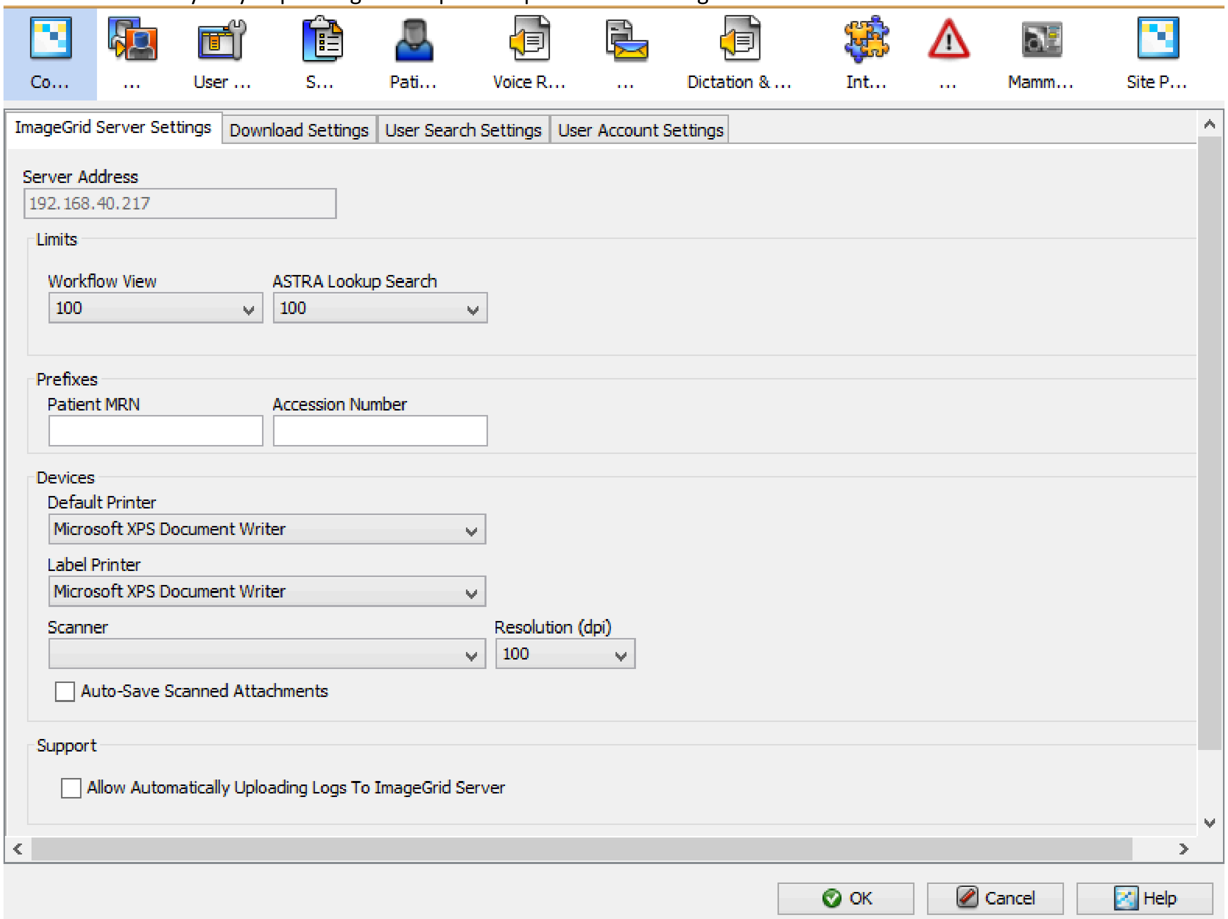
The RIS-Driven Workflow Options Tab allows the user to be able to configure options for streamlining their productivity using the RIS and reporting.
They are able to configure the below option(s):

- **Open Patient Chart When Creating/Dictating New Report**
  The user has the option to open the available Patient Chart **History** Tabs when creating or dictating a new report.
- **Patient Chart Tab To Open**
  If the previous option has been selected, the user has the choose what tab of the patient chart will be opened.
- **Set all procedures status to be Report Verified in the same order, when sign one report**
  The user has the option to define that when a report will be signed, all the order procedures status will be changed to Report Verified.
- **Open The Report In Report Dialog Instead Of Patient Chart**
  The user has the option to display the reports and letters in a dialog instead of displaying it in the patient chart.
- **Open The Next Unsigned Report After The Report Is Signed**
  If the previous option is selected, the user has the option to automatically open the next unsigned report after he signed a report.

ImageGrid Server Settings

The Connections panel allows users to view connection information, as well as to modify user preferences (i.e. prefixes (patient and order), search limits and auto-saving of scanned documents) and workstation preferences (i.e. scanner, default printer and label printer)

Note: Contents may vary depending on the product permission settings



User-based Settings

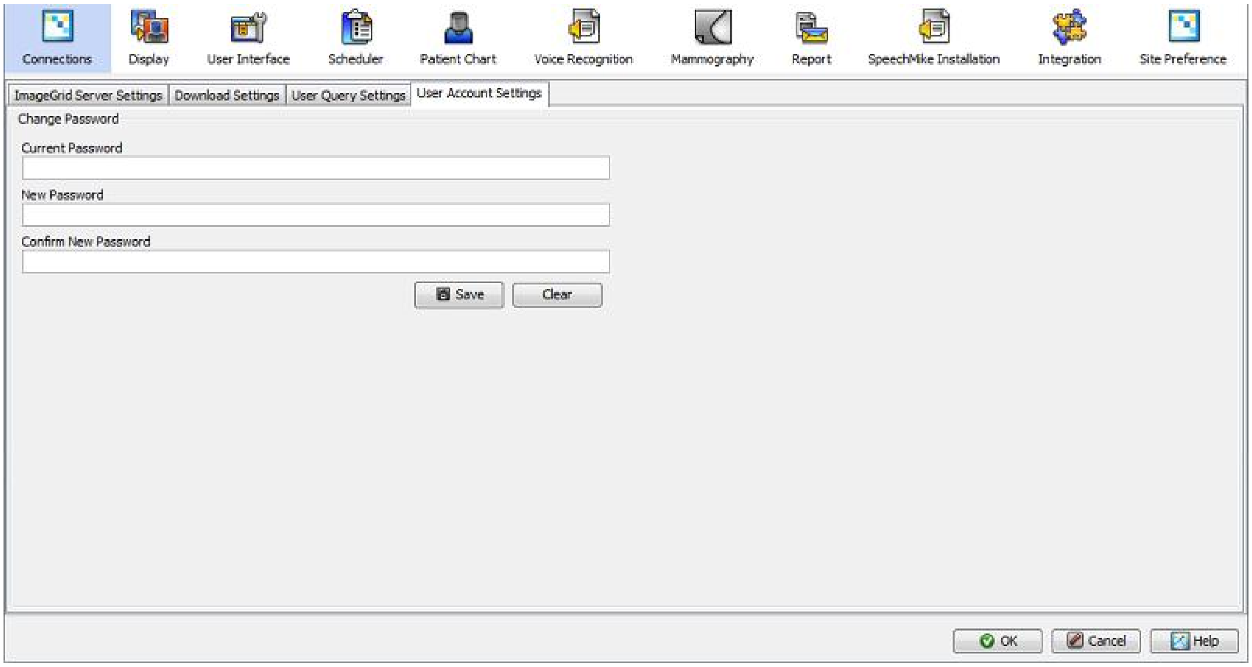
With this panel, users will be able to change the patient MRN prefix and/or accession number prefix. This means every new patient and/or order's corresponding field will have a preceding value inputted dynamically. A user can limit the number of results returned for Workflow View and for ASTRA Lookup Search. The choices for search limits are 100, 200, 500 and 1000.

Workstation-based Settings

Users also have the ability to set the default printer, label printer and/or scanner. For scanned documents, they can also set the user-based preference of auto-saving the scanned document upon creation. They can also set the default resolution (dpi) value for the specified workstation.

User Account Settings

The User Account panel allows users to modify user account information.



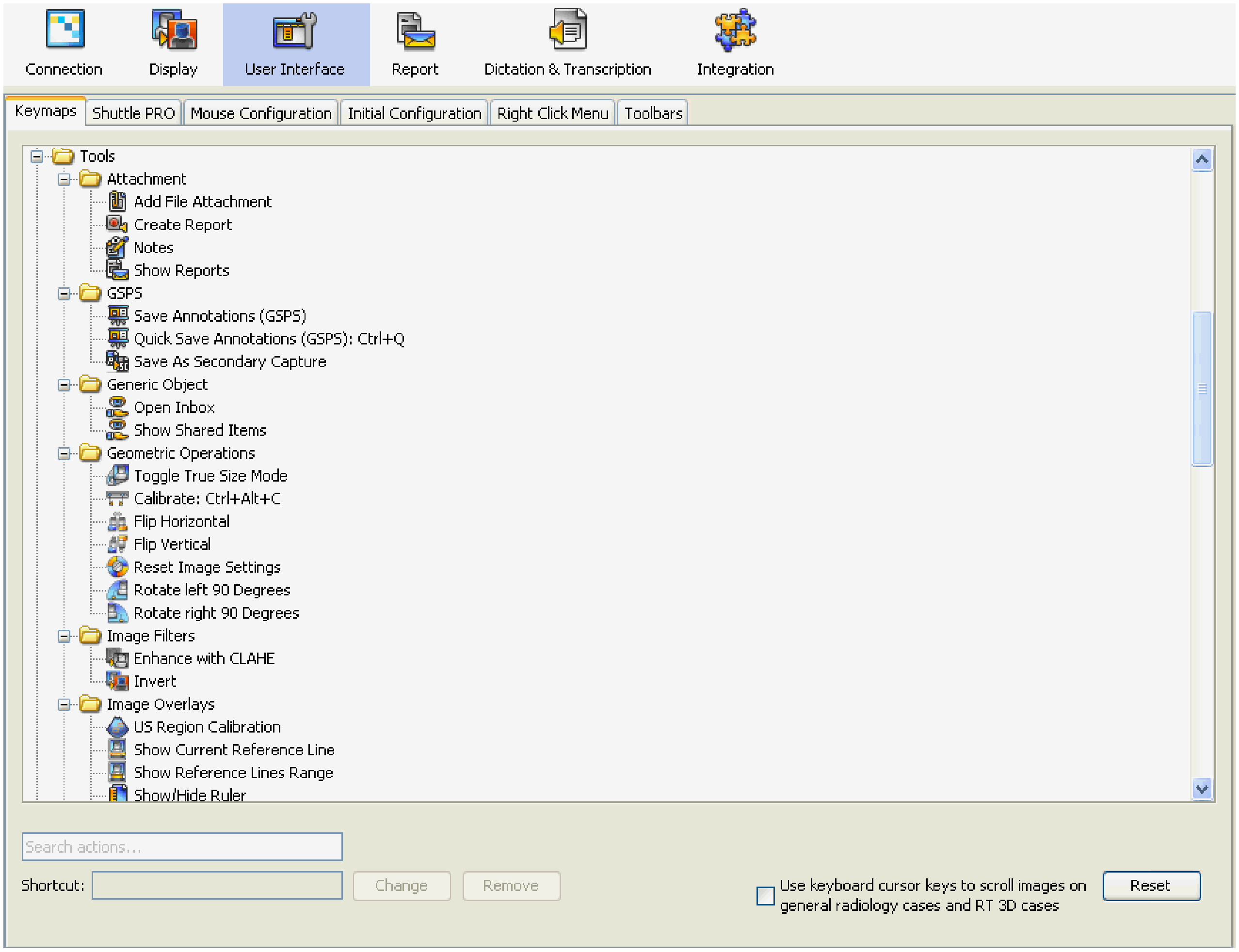
From here, the user can change their password. The change will be applied the next the user logs in.

Keyboard Shortcut Settings

The keyboard shortcut settings panel allows users to add, edit and remove keyboard shortcuts.

The keyboard shortcut settings panel can be found at Options panel → User Interface → Keymaps:

Note: Contents may vary depending on the product permission settings



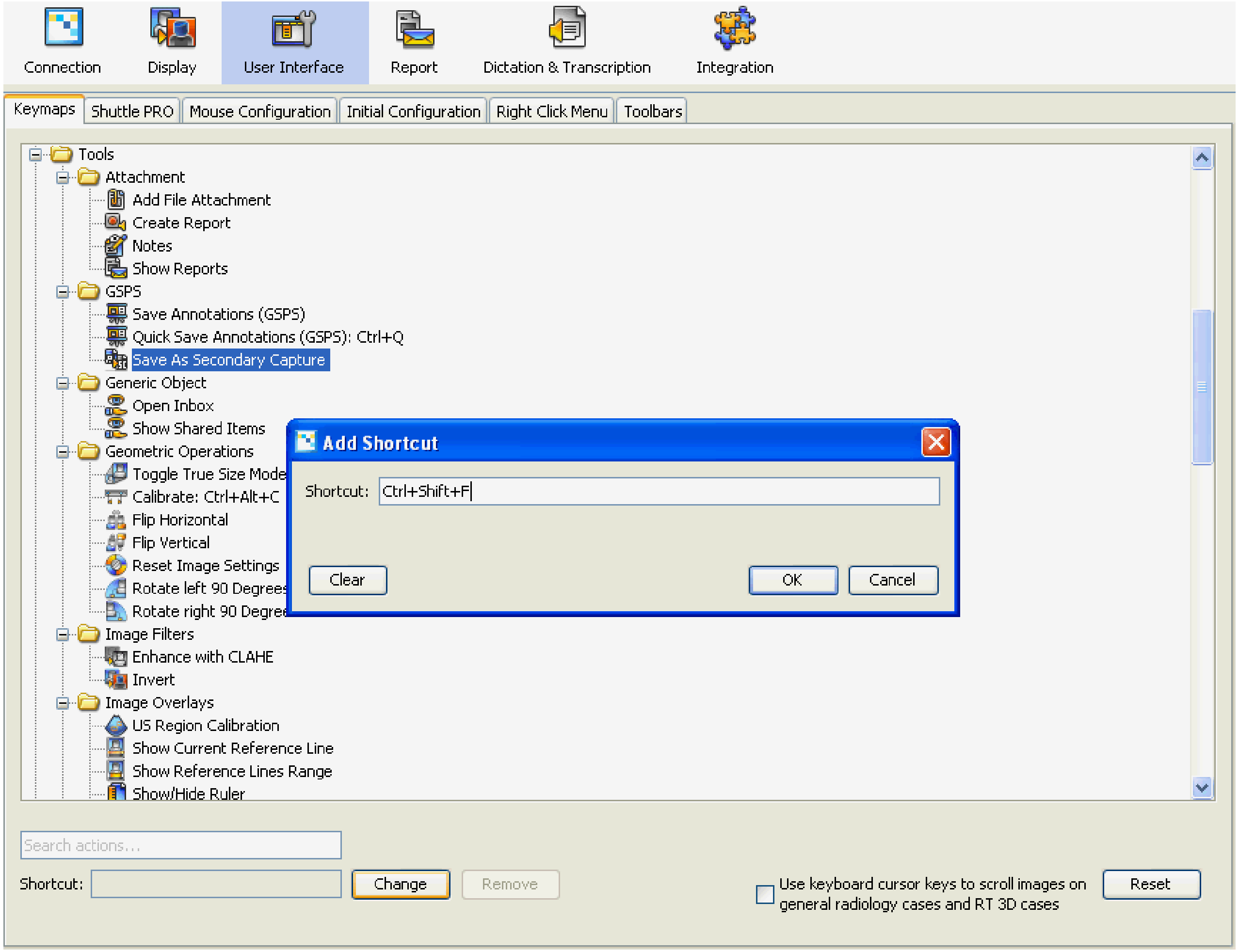
On this panel, users will see a tree structure which list all functions grouped by categories. By choosing a function, users can add/edit/delete shortcut for it. Users can also search for a particular function by typing the name in the "Search actions..." box.

Add/Edit shortcuts

On the shortcuts setting panel, users can add/edit keyboard shortcuts by choosing one function and clicking the “Change” button.

Certain key combinations are prohibited.

Each shortcut can be assigned to only one function. If users try to assign an existing shortcut to a new function, this operation will be denied and a warning message will pop up.



Delete shortcuts

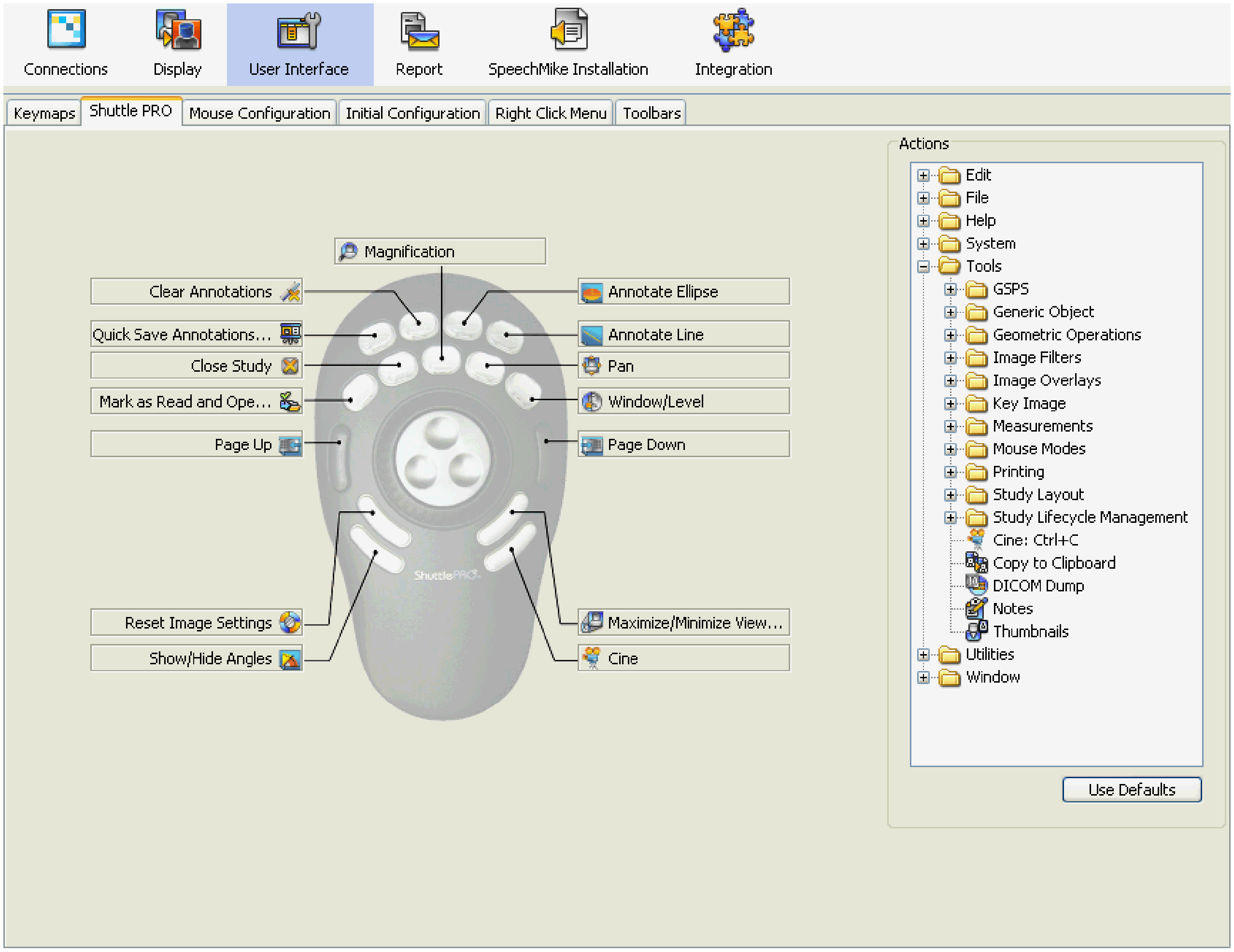
On the shortcuts setting panel, users can remove keyboard shortcuts by choosing a function and clicking the "Remove" button.

Shuttle PRO Keypad

The Shuttle PRO Keypad settings panel allows users to customize the Shuttle PRO Keypad.

The Shuttle PRO Keypad settings panel can be found in the Options panel → User Interface → Shuttle PRO:

Note: This panel will be disabled if you don't have Shuttle PRO Keypad installed on your workstation.



In this panel, users will see the list of functions grouped by categories on the right side. A diagram of the keypad is shown on the left side.

Assign a function

In the Shuttle PRO Keypad settings panel, users can assign a function by dragging it from the right side list and dropping it into a slot in the diagram.

Remove a function

Users can remove an assigned function by dragging it off the slot.

Reset to default settings

Users can set the Shuttle PRO keypad to its default settings by clicking the "Set to Default" button.

Legal Notices, Copyright Information

Using ImageGrid RIS

ImageGrid RIS user accounts are defined according to “Roles”, which define the rights and level of accessibility that an account has within IGRIS. Five of the most commonly used Roles will be explained in the following section. Each of these roles may be configured to have unique or overlapping levels of access depending upon the needs of your infrastructure.

ImageGrid RIS: Administrator

The Administrator is responsible for the configuration of the system and generally in charge of the users of the system. This is the only role that, by default, has all permissions enabled at all times.

ImageGrid RIS: Front Desk

The Front Desk Role will typically have multiple responsibilities: Patient profile entry, Order confirmation, & patient arrival & confirmation, and insurance verification.

ImageGrid RIS: Technologist

The Technologist role will be responsible for updating the status of procedures, appending reports or notes where necessary.

ImageGrid RIS: Radiologist

The Radiologist role will have almost complete access to the workflow, including, dictation and transcription features, as well as access to patient profiles, & previous procedures.

ImageGrid RIS: Transcriptionist

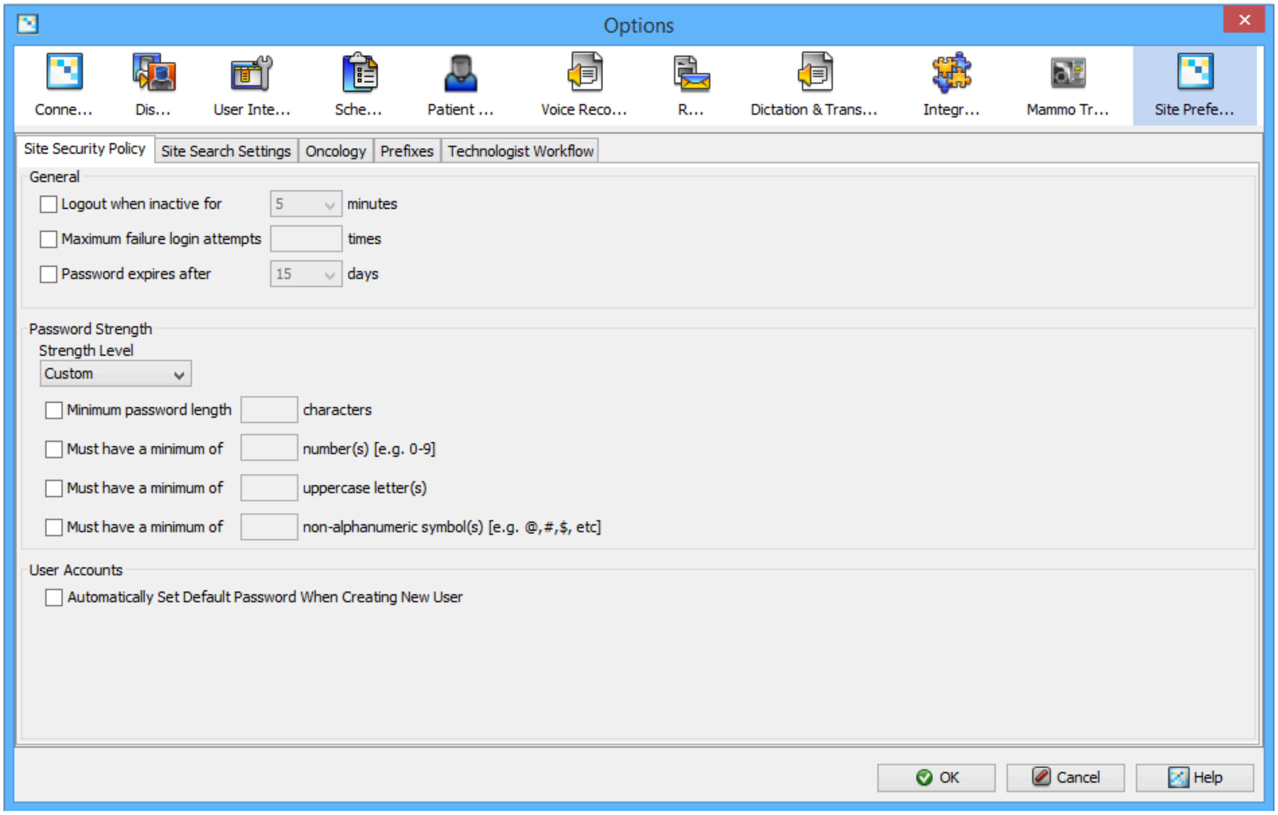
The Transcriptionist role will have access to the radiologist’s dictation data, and access to the structured reporting features of IGRIS.

The following illustrates an account/role layout for IGRIS:

	Front Desk	**Scheduler**	**Technologist**	**Radiologist**	**Transcriptionist**
Access Scheduler interface	X	X	X	X	X
Change Scheduling		X			
Create Patient profile	X			X	
Create Patient account	X				
Delete patient	X				
Create Orders	X	X		X	
cancel order	X				
Delete order	X				
Insurance ver.	X				
Add Procedures	X			X	
Change Procedure State	X	X	X	X	X
Delete procedure	X	X	X	X	X
Cancel procedure	X		X		
Create Appointments	X	X	X		
Cancel appointment	X	X	X		
Create Attachments	X	X	X	X	X
Delete Attachments	X	X	X	X	X
Modalities			X		
Modality Schedules			X		
Access Worklist	X	X	X	X	X
Creating Notes	X	X	X	X	X
Structured Reports				X	X
Using Dictation				X	X
Fax Services	X	X			
Scanned documents	X	X	X	X	X
Import Documents	X			X	X
Export Documents	X				X
Reading Studies				X	
Creating Tasks				X	

Site Security

Administrators will have the capability to enable/disable site security options. These options include inactivity timeouts, maximum login attempts, minimum password lengths and password expiration length.



Technical support Contacts

Candelis Inc.
4701 Von Karman Ave, Suite 200
Newport Beach, CA 92660
support@candelis.com
800-800-8600
949-852-1000 (outside the United States)

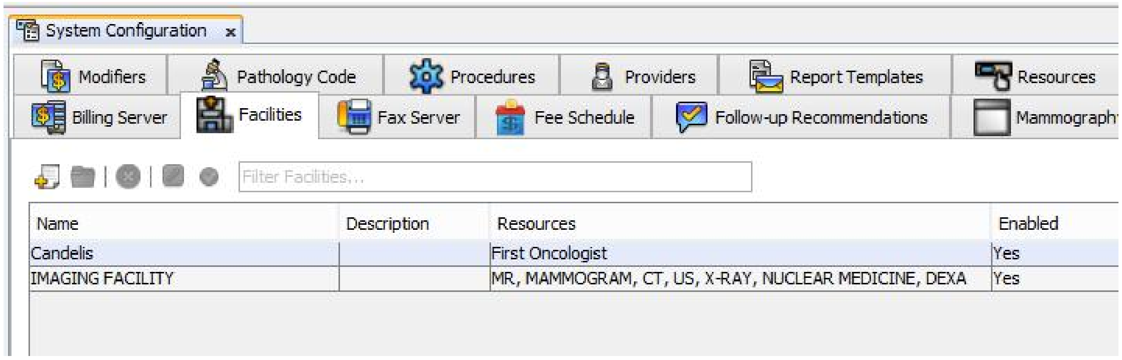
User Management

- User Authentication
- Roles
  - Role Configuration
  - Authorization
- Users
  - User Configuration
  - User Preferences

Facilities

Facilities are artifacts used to designate a location where resources are located, and imaging procedures are conducted.

Configuring Facilities



1. Log into IGPlatform as an administrator.
2. Navigate to Tools System Configuration (or CTRL+D) to access system configuration.
3. Navigate to the “Facilities” Tab.
4. To add a facility
    a. Click the ”Add New Facility” button.
    b. Specify the name of the facility.
    c. Specify the color, description, logo, and contact information (if applicable).
    d. Click the "Save" button when completed.
5. To edit an existing facility
    a. Select an existing entry to edit.
    b. Click the "Open Facility" button.
    c. Edit any fields.
    d. Click the "Save" button when completed.
6. To delete an existing facility
    a. Select an existing entry to delete.
    b. Click the "Delete Facility" button.
    c. A warning dialog will pop up asking you “Permanently delete Facility?” Click “Yes” if you want to permanently delete this facility. Otherwise, click “No”.
7. To disable an existing facility

    Note: By setting a facility to be disabled, you will not be able to use it to create or modify data. Moreover you can disable a facility only if its resources are all already disabled.

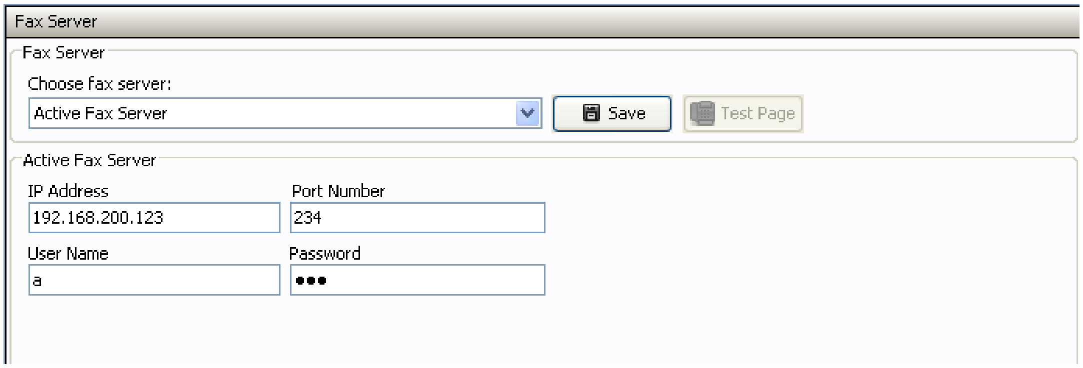
    a. Select an existing facility which is enabled from the facility table.
    b. Click "Disable" button from the table's toolbar.
    c. Click "Yes" in the pop-up dialog to disable the facility. Click "No" to cancel the operation.
8. To enable an existing facility

    Note: By setting a facility to be enabled, you will be able to use it to create or modify data again.

    a. Select an existing facility which is not enabled from the facility table.
    b. Click "Enable" button from the table's toolbar.

Fax Server

Configuring a Fax Server



1. Log into IGPlatform as an Administrator
2. Click the ”System Configuration” button and the ”Fax Server” tab
3. To add a Fax Server
    a. Select the fax server (Active Fax Server, or MyFax server)
    b. Enter the IP address of the device
    c. Enter the Fax server’s Port number
    d. Enter the user name and password of the fax server
    e. Click “Save” to save the configuration
    f. Click “Test Page” to send a test fax page

Physicians

Physicians are artifacts used to designate the radiologist or specialist conducting diagnoses for a procedure.

Configuring Physicians

1. Log into IGPlatform as an administrator.
2. Navigate to Tools->Physicians
3. To add a physician
    a. Click the "Add Physician" button.
    b. Enter the Physician's Name.
    c. If applicable, enter the physician's NPI and UPI numbers, Tax ID, State License Code, Company Name, Provider, and Remark.
    d. Enter the Physician's Tax ID, State License, Code, Company Name, Provider, and Remark (if applicable)
    e. If applicable, use the drop-down list to indicate the physician's specialty.
    f. Under Report Delivery, specify the preferred mode of report delivery.
    g. Click the "Save" button when completed.
4. To edit an existing physician
    a. Select an existing entry to edit.
    b. Click the "Open Physician" button.
    c. Edit any fields.
    d. Click the "Save" button when completed.
5. To delete an existing physician
    a. Select an existing entry to delete.
    b. Click the "Delete Physician" button.
    c. A warning dialog will pop up asking you "Permanently delete Physician?"
       Click "Yes" if you want to permanently delete this physician. Otherwise, click "No".
6. To print physician information
    a. Select an existing entry to print.
    b. Click the "Print Physician" button.
7. To disable an existing physician

   Note: By setting a physician to be disabled, you will not be able to use it to create or modify data.

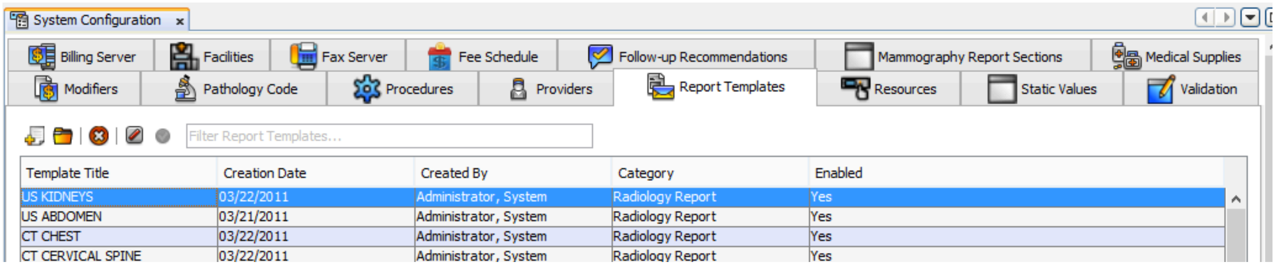
    a. Select an existing physician which is enabled from the physician table.
    b. Click "Disable" button from the table's toolbar.
    c. Click "Yes" in the pop-up dialog to disable the physician. Click "No" to cancel the operation.
8. To enable an existing physician

   Note: By setting a physician to be enabled, you will be able to use it to create or modify data again.

    a. Select an existing physician which is not enabled from the physician table.
    b. Click "Enable" button from the table's toolbar.

Report Templates

Configuring Report Templates



1. Log into IGPlatform as an administrator.
2. Navigate to Tools System Configuration (or CTRL+D) to access system configuration.
3. Navigate to the "Report Templates" Tab.
4. To add a report template
   a. Click the "Add Report Template" button.
   b. Specify the title and category, if applicable.
   c. Make a new report template.
   d. Click the "Save" button when completed.
5. To edit an existing report template
   a. Select an existing entry to edit.
   b. Click the "Open Report Template" button.
   c. Edit the template and category.
   d. Click the "Save" button when completed.
6. To delete an existing report template
   1. Select the desired template to delete.
   2. Click the "Delete Report Template" button.
   3. A warning dialog will pop up asking you "Permanently delete Report Template?" Click "Yes" if you want to permanently delete this report template. Otherwise, click "No".
7. To disable an existing report template

   Note: By setting a report template to be disabled, you will not be able to use it to create or modify data.

   a. Select an existing report template which is enabled from the report template table.
   b. Click "Disable" button from the table's toolbar.
   c. Click "Yes" in the pop-up dialog to disable the report template. Click "No" to cancel the operation.
8. To enable an existing report template

   Note: By setting a report template to be enabled, you will be able to use it to create or modify data again.

   a. Select an existing report template which is not enabled from the report template table.
   b. Click "Enable" button from the table's toolbar.

Dictation and Transcription

Introduction

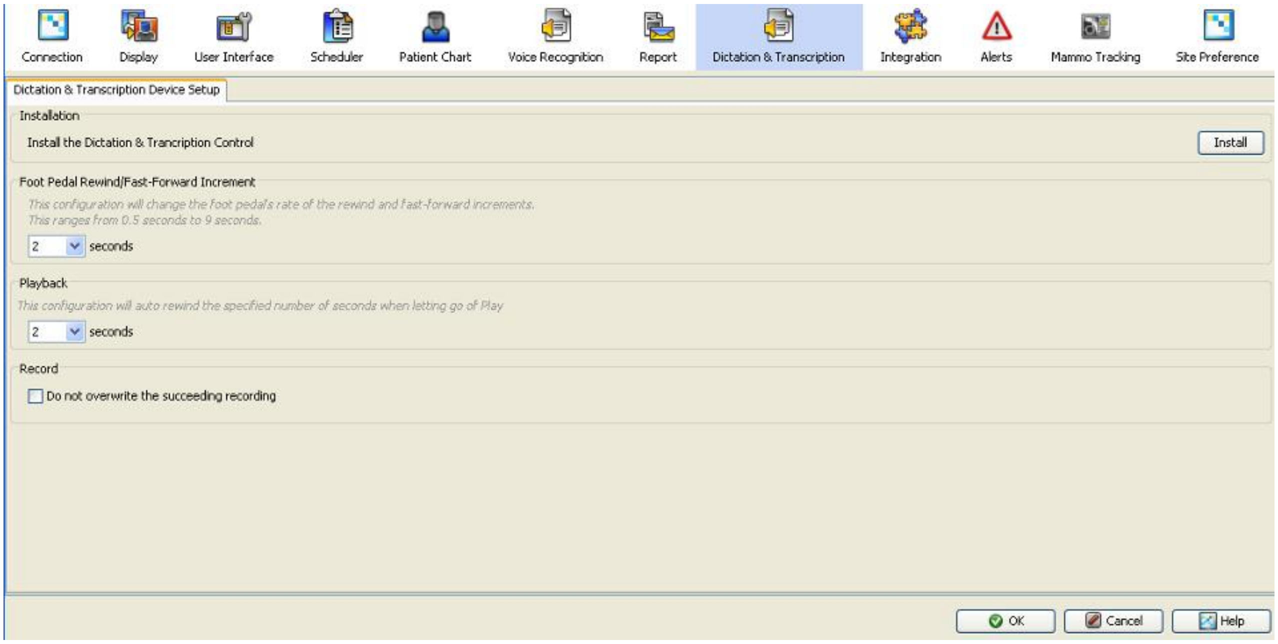
Two of the most interactive features in IGRIS are its Dictation and Transcription services, which are made available for Radiologists and Transcriptionists for the recording of diagnoses, and for the construction and retention of formal reports illustrating the physician's findings. In order to properly operate both functionalities, an IGRIS workstation must have the following configured for use.

For Dictation and Transcription Services

- One Phillips® SpeechMike™ Pro-Plus Dictaphone, with recording and playback capability
- One local or network accessible printer (for structured reports)

By default, dictation services are available to procedures which are either underway or have been completed, but not reported. This is to ensure the integrity of the RIS workflow. When activated the IGRIS will retrieve all recorded dictations made for the corresponding procedure, organized by date.

Dictation & Transcription Device Setup



The Dictation & Transcription Options Tab consists of the setup of the Dictation/Transcription Device Control interface.

The "Install"/"Re-install" button will download and install the necessary components from the ImageGrid to allow the platform full control over the Phillips® SpeechMike™ microphone for dictation, as well as the Phillips® FootPedal for transcription.

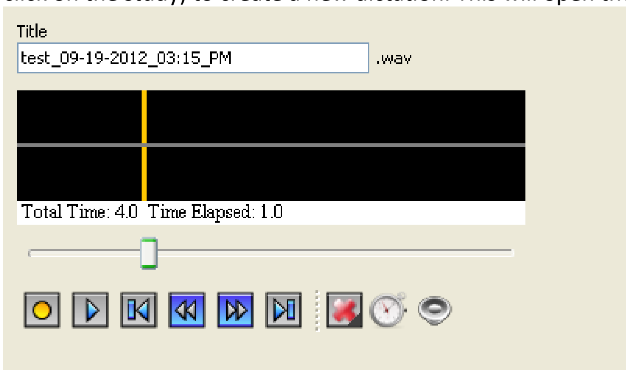
It also includes configuration of:

1. Incremental rewind and fast-forward settings (in seconds) for the Phillips® FootPedal.
2. Auto rewind settings when user playback after pause
3. Setting for overwrite the succeeding audio data during recording
4. Setting a record mode lock

Dictation

To create a dictation

1. Radiologist logs into RIS and retrieves procedures that have just finished in Workflow View; these are indicates by the status “Technologist Completed”.
2. Select the study and click on "Dictate/Create New Report" button, and then on "Dictate New Report" (or double click on the study) to create a new dictation. This will open the dictation creation workspace.



3. When ready, use the Dictation trackball to click on the record button (yellow circle on the far left).
4. Follow the instructions included with the Dictaphone for making a dictation.
5. The waveform interface indicates the fidelity of the recording being made; the more pronounced the waveform is, the greater the level of recording fidelity being made.
6. Try adjusting the volume or distance between the Dictaphone for preferred results.
7. While in the recording state, the record button becomes the "Stop" button (blue square). Click the stop button to end dictation.

- Apply the “Play” button (yellow triangle) to playback the recordings just made. The play back speed can be adjusted through player speed slider
- While playing back dictation, the play button becomes the "Pause" button. Click the pause button to halt the play back. Once paused click the play button to resume play back from the point where play back was halted. When resuming the playback, the system can optionally rewind a specific number of second
- Apply the “Delete” button (red X) to delete part of the audio data.
- In the event that fairly long dictations are made, the Dictation Window provides Fast-Forward, Forward, Reverse, and Fast-Reverse capability. This is especially useful in situations involving multiple dictations for a complex procedure, or where it is necessary to rapidly sample and search through saved dictations.
- To save a dictation, click the “Save” button or CTRL+S key combination.

Dictation Management

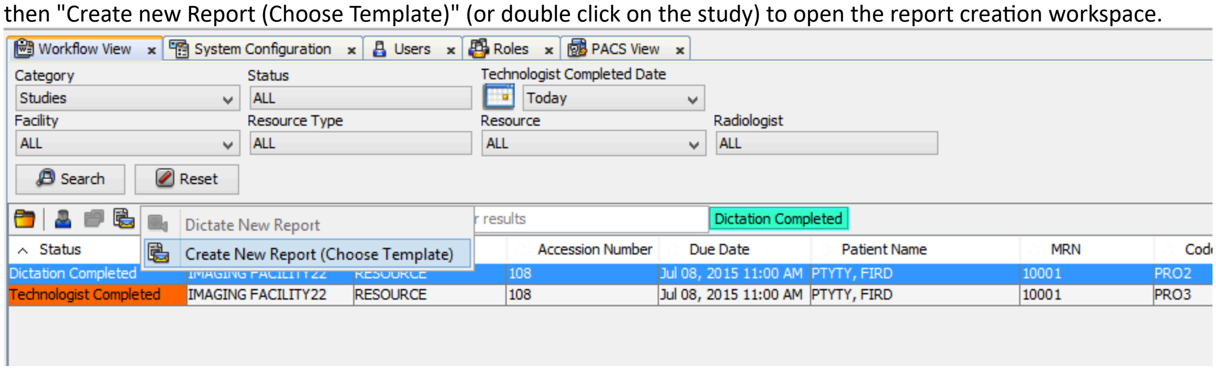
When user tries to create a new dictation for a specific procedure (not "All procedures"), a warning will pop up if a dictation already exists. User can choose to edit it or create a new one. Creating new dictation will delete that existing one.

Transcription

To create a radiology report from dictations

As part of the RIS workflow, IGRIS includes services for the creation and attachment of radiology reports (basically transcriptions of dictations made in the previous steps). This service permits the transcriptionist to locate and playback dictations for completed procedures, and to produce custom reports for later review and approval and appending to the patient's records.

1. Transcriptionist in RIS opens the Workflow View and locates completed procedures under the state "Dictation Completed"; this indicates that its associated studies have been examined and a dictation was already made for it by the radiologist
2. From Workflow View, the transcriptionist can select a study and click on "Create/Dictate New Report" button, and then "Create new Report (Choose Template)" (or double click on the study) to open the report creation workspace.



3. Edit the title of the report (it will be printed at the header)
4. Select an appropriate font, and alignment from the buttons below.
5. To preview the page(s) click the "Print Preview" button.
6. To proceed with Report creation, click the "Save" Button. This action will save the Report.
7. To import images into the report, click the "Import Images" button.
8. To take screenshots of the other workspace monitors, click the "Insert Screenshots" button.

The Report Editor can be used by the Transcriptionist to transcribe the radiologist's dictations into a report; it permits the user to preview the current contents of the report. Macros are also available.

Within the panel are a set of buttons for editing the document and for applying signatures.

The first sets of buttons are for the application of electronic signatures. IGRIS permits structured reports to be converted into PDF format; wherein electronic signatures may be applicable.

The editing workspace is designed to structurally resemble how the reports will be created, with sections for the patient's history, the Physician's findings, examination techniques applied, and the Radiologist's final impressions. Within each of these sections, the transcriptionist will enter the report's contents using the radiologist's dictation as the primary source. Depending upon the size of the dictation, the report may contain multiple pages. It is also within the panel that the transcriptionist may attach the report to the patient's study. Also, the user rights for the application of electronic signatures can be restricted through the System Configuration interface, thus permitting only the Radiologist or other authorized person to approve the reports.

Voice-Activated Platform

A voice-activated platform allows the user to issue commands by voice, eliminating the need for a mouse and keyboard for portions of the workflow. This page will explain the concept of a Context and the available commands for each type of context.

Contexts

A context is the platform's current state. The context will drive the available commands for the user at the moment. There are a handful of contexts in the platform. The platform is context aware and will update the Available Commands accordingly when the context has changed.

Below is a table outlining the contexts within the platform:

Context	Definition	Active
Default	Represents the home-base for the context manager.	When there is no other context active
Studies	Represents the meat of the radiologists workflow	When either the RIS Studies Worklist or PACS View is open and in focus
Report Delivery	Sending reports via Fax or ASTRA	When the Report Delivery Confirmation Dialog is open
Report Signature	Signing radiology report	When the Report Sign Confirmation Dialog is open
Report Templates	Choosing a report template to create new report	When the Choose Report Template Dialog is open
Report Editor (Voice Recognition)	Voice Recognition Mode. Dictating a radiology report	When the report editor is open and visible
Report Editor (Voice Activation)	Voice Activation Command Mode. Only commands are recognized. There is no dictation.	When the report editor is open and visible

Available Commands

Below is a table outlining all the commands, their purpose, and in which context(s) they are available:

Command	What It Does	Context(s)
What Can I Say?	Shows the user the commands that are currently able to be issued.	Always available except for Report Editor (Voice Recognition)
Studies Worklist	Opens the RIS "Studies" Worklist. **RIS License/Permission required**	Default, Studies, Report Editor (Voice Activation)
PACS View	Opens PACS View. **Viewer License/Permission required**	Default, Studies, Report Editor (Voice Activation)
Open Study	Opens the selected study with the Viewer, either from the Studies Worklist or PACS View	Studies
Previous Study	Highlights the study above the currently highlighted study in the table. If no study is selected, highlights the last study in the table.	Studies
Next Study	Highlights the study below the currently highlighted study in the table. If no study is selected, highlights the first study in the table.	Studies
Select Default Template	Opens the highlighted study with the Viewer and creates a new report for the highlighted study: Selects the template that is designated as the default radiology report template. **Note: This command is only active if there is a report template set as default (Tools → Options → Report)**	Studies
Select Template <Template Name>	Opens the highlighted study with the Viewer and creates a new report for the highlighted study: Selects the template	Studies, Report Templates

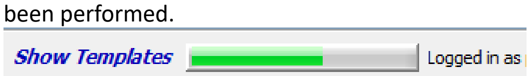
	designated by <Template Name>.	
Show Templates	Opens the highlighted study with the Viewer and displays the Choose Report Template Dialog for the user to choose a template	Studies
Send Report	Sends the report to the selected physicians, as seen in the Report Delivery Confirmation Dialog.	Report Delivery
Sign Report	When the report editor is open and in draft mode, this command will display the Report Signature Confirmation Dialog. When the Report Signature Confirmation Dialog is opened, this command will sign the report.	Report Signature, Report Editor (Voice Recognition), Report Editor (Voice Activation)
Recognition Mode	Switches the context back to **Report Editor (Voice Recognition)**	Report Editor (Voice Activation)
Command Mode	Switches the context back to **Report Editor (Voice Activation)**	Report Editor (Voice Recognition)
Cancel	Cancels the current action that can be performed	Report Signature, Report Delivery, Report Templates

User Interface

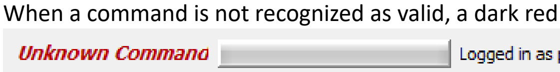
Command Recognition

When the user issues a command, the platform will provide feedback at the bottom right taskbar.

When a command is recognized, it will be displayed in dark blue and will remain there until the corresponding action has been performed.



When a command is not recognized as valid, a dark red "Unknown Command" will be displayed.

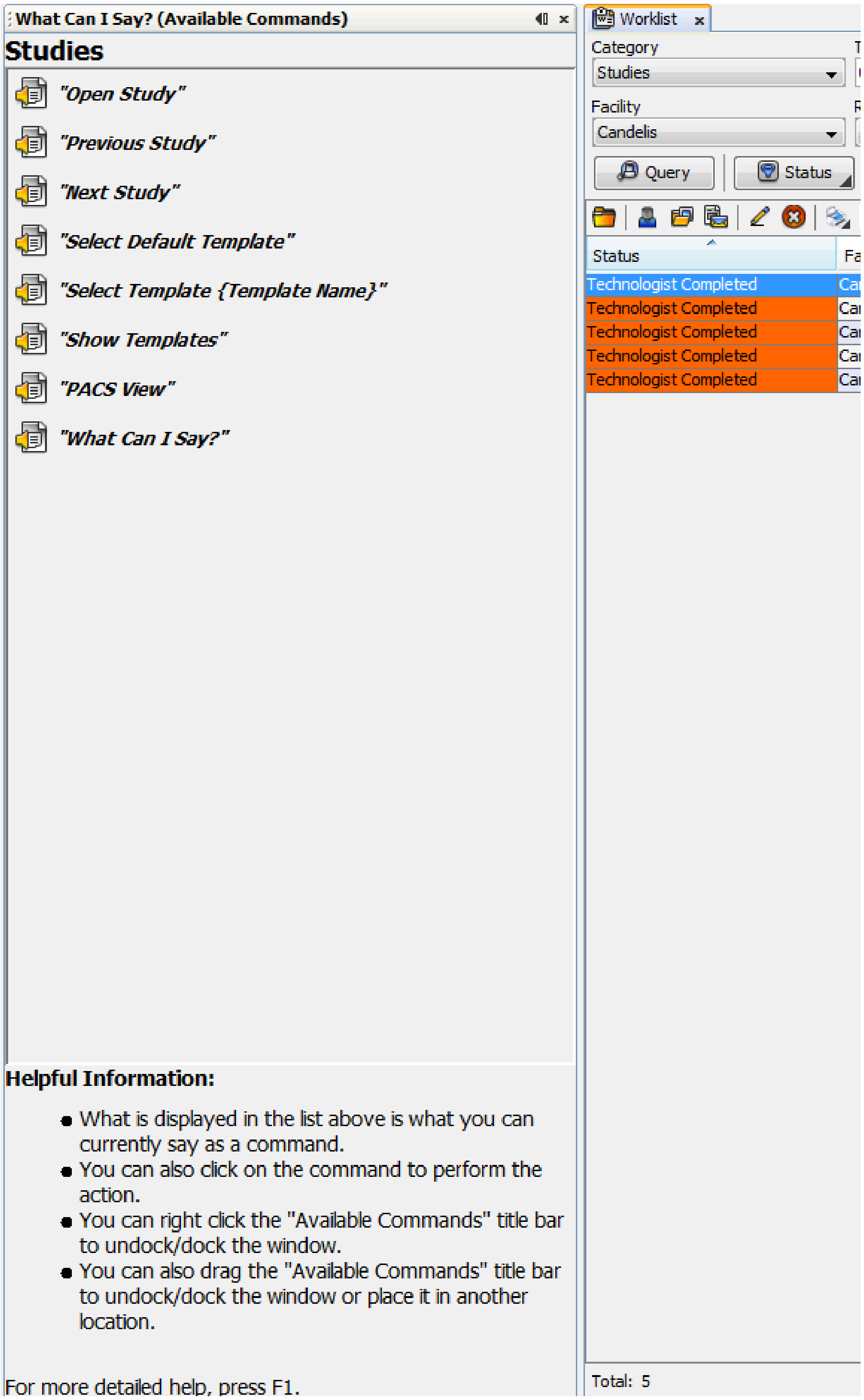


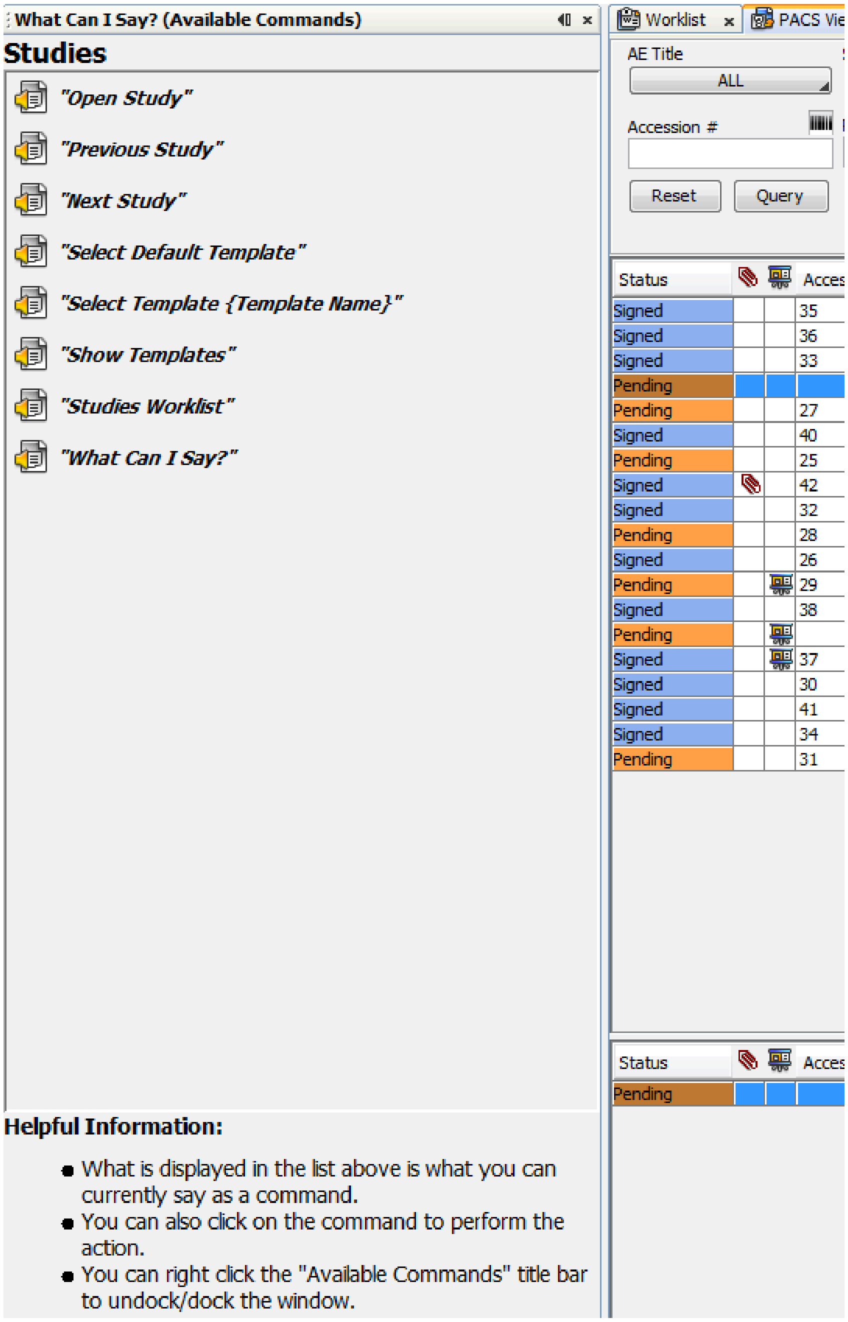
What Can I Say? (Available Commands)

The "What Can I Say? (Available Commands)" page displays the current context's name as well as the currently available commands under that context.

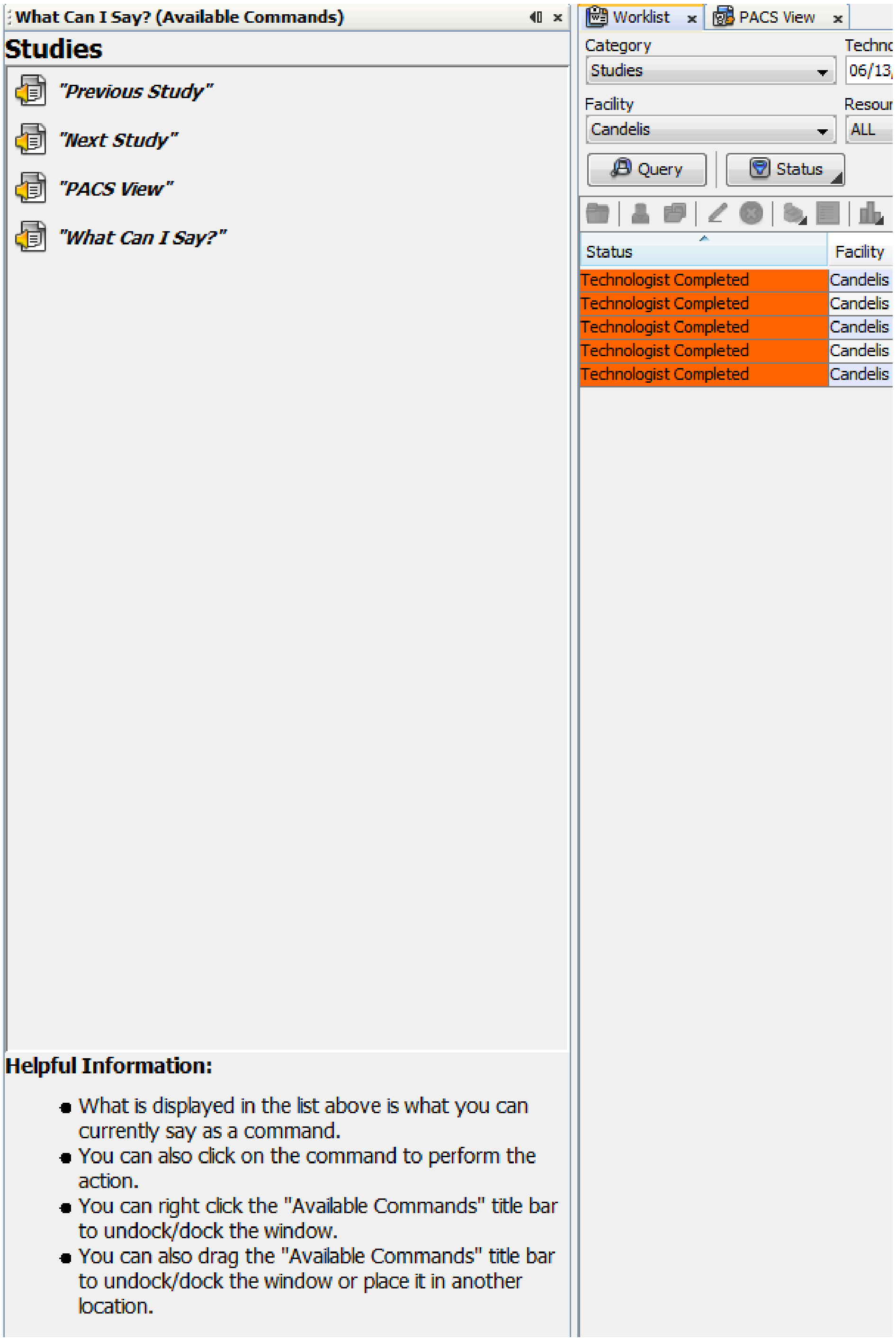
Examples below:

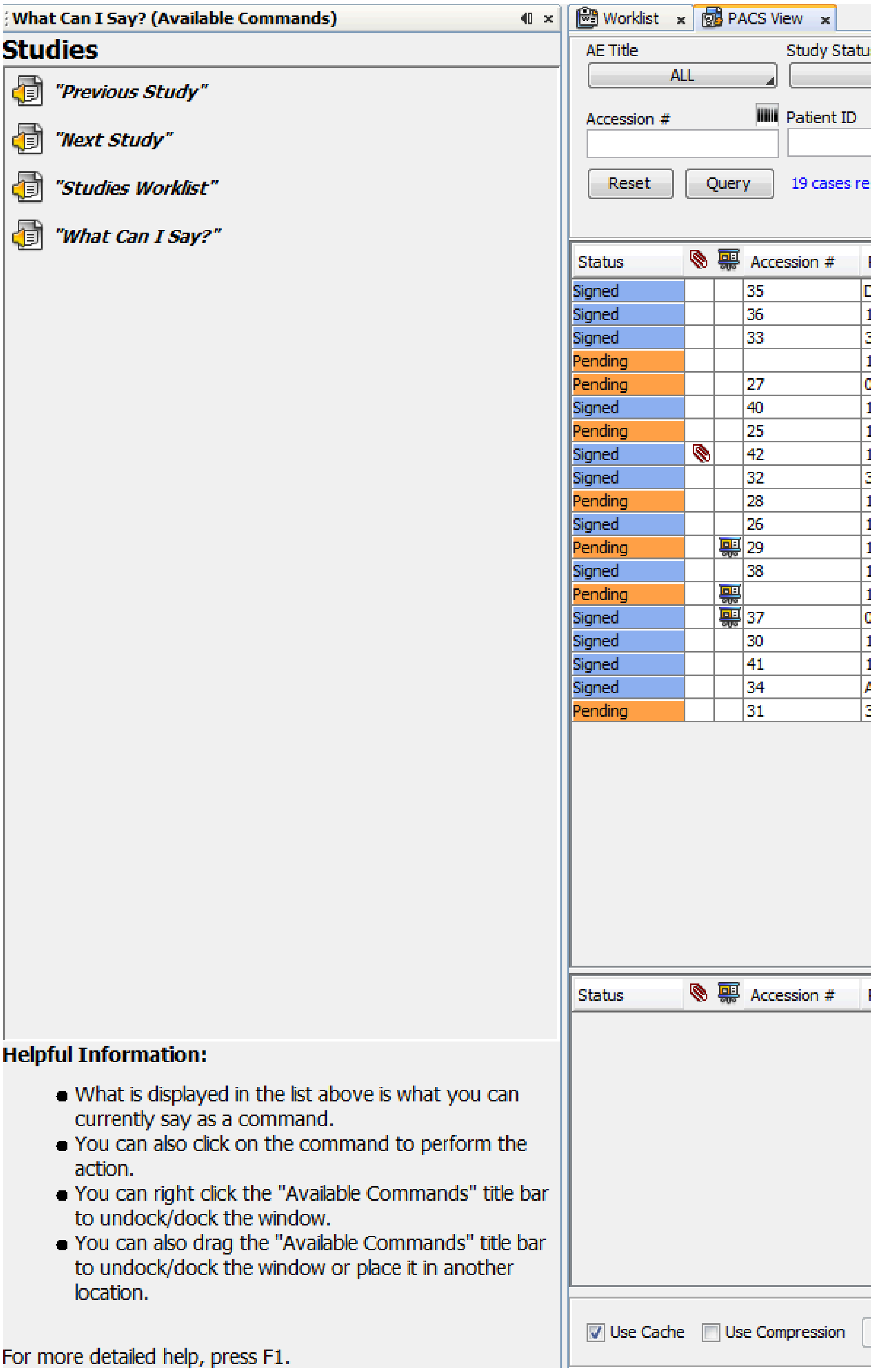
Studies Context (study highlighted)


What Can I Say? (Available Commands)
Studies
"Open Study"
"Previous Study"
"Next Study"
"Select Default Template"
"Select Template {Template Name}"
"Show Templates"
"PACS View"
"What Can I Say?"
Helpful Information:
What is displayed in the list above is what you can currently say as a command.
You can also click on the command to perform the action.
You can right click the "Available Commands" title bar to undock/dock the window.
You can also drag the "Available Commands" title bar to undock/dock the window or place it in another location.
For more detailed help, press F1.
Worklist
Category
Studies
Facility
Candelis
Query
Status
Status
Technologist Completed
Technologist Completed
Technologist Completed
Technologist Completed
Technologist Completed
Total: 5

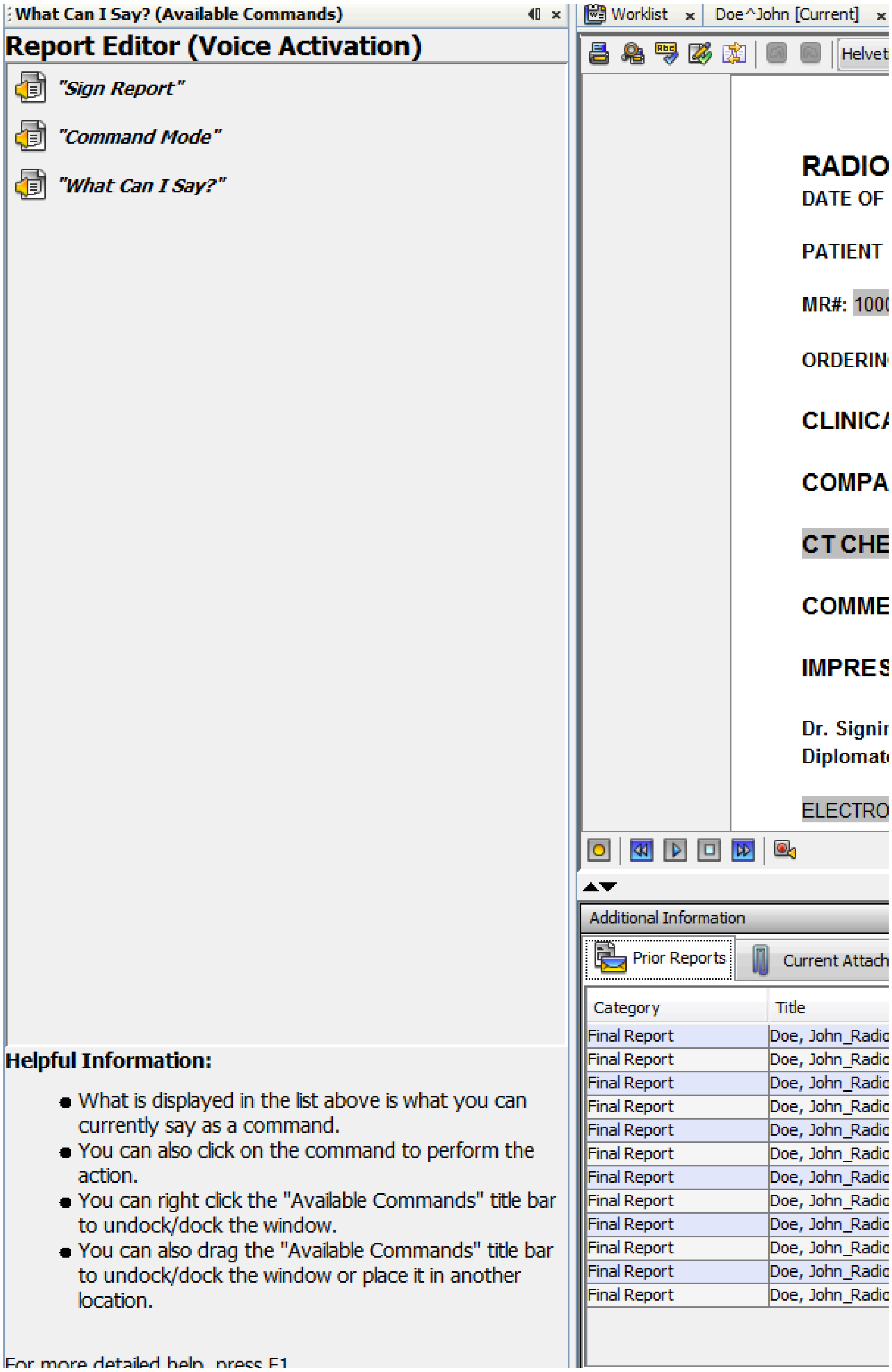


Studies Context (no study highlighted)


What Can I Say? (Available Commands)
Studies
"Previous Study"
"Next Study"
"PACS View"
"What Can I Say?"
Helpful Information:
What is displayed in the list above is what you can currently say as a command.
You can also click on the command to perform the action.
You can right click the "Available Commands" title bar to undock/dock the window.
You can also drag the "Available Commands" title bar to undock/dock the window or place it in another location.
Worklist
PACS View
Category
Studies
Facility
Candelis
Query
Status
Status
Facility
Technologist Completed
Candelis
Technologist Completed
Candelis
Technologist Completed
Candelis
Technologist Completed
Candelis
Technologist Completed
Candelis



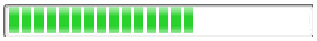
Report Editor (Voice Recognition)


What Can I Say? (Available Commands)
Report Editor (Voice Activation)
"Sign Report"
"Command Mode"
"What Can I Say?"
Helpful Information:
What is displayed in the list above is what you can currently say as a command.
You can also click on the command to perform the action.
You can right click the "Available Commands" title bar to undock/dock the window.
You can also drag the "Available Commands" title bar to undock/dock the window or place it in another location.
For more detailed help, press F1
Worklist
Doe^John [Current]
Additional Information
Prior Reports
Category
Title
Final Report

Audio

Audio Level Indicator

The Audio level Indicator identifies a user's input through a voice input device. While in the recording mode, the indicator can be seen at the right hand corner of the audio tool bar.



Audio controls

1. Record Button
2. Rewind Button
3. Play Button
4. Stop Button
5. Forward Button
6. Audio Wizard Button

Audio Wizard

Audio Wizard is a tool that can be used to adjust the audio to the surrounding environment. It is recommended to run the Audio Wizard if there is a lot of noise or if your dictating environment has changed from the previous one.

Command and Control

With the use of a few pre-defined commands, functionality such as navigation within a document (with the help of Jump Points), selection of a word, inserting auto-texts etc. can be performed. Refer to the list of commands.

Jump Points

Jump Points created using the Report Creation Tool are used to navigate within the documents. Using Voice Recognition, a user can say commands such as *Next Field, Previous Field, Move to [Jump Point Name]* to navigate within the document

Named Jump Points

Jump Points can be named. Commands such as *Move to [Jump Point Name]* or *Jump to [Jump Point Name]* are used to navigate between named jump points.

Unnamed Jump Points

To navigate across jump points that are not named, commands such as *Next Field* or *Previous Field* need to be used.

Sample Report Template with Jump Points:

History: ...

Impressions: ...

Comments: ...

Macros

Macros can be inserted into the report using the *Insert [Macro name]* command.

Select and Correct

The Select and Correct feature lets you to select a word in the *Control mode** and dictate over it in the *Dictation mode***. To select a word/phrase, use the command *Select [Word/Phrase]*. To select the next word which is already selected, use the command *Repeat Selection* or say *Select [Word/Phrase]* again.

Use the command *Control mode* to switch to Control mode and the command *Dictation mode* to switch to the Dictation Mode

NOTE

***** Control Mode: Control mode is primarily for the recognition engine to recognize commands. In this mode there won't be any Speech-to-Text conversion.

****** Dictation Mode: Dictation mode is primarily for Speech-to-Text conversion. Some commands like Scratch That, Insert [Auto text name], Navigation between jump points can be used in the Dictation Mode.

Voice Input Device

Various voice input devices can be used to work with Voice Recognition. The recommended voice input device to use Voice Recognition is SpeechMike PRO. The buttons of the SpeechMike PRO are programmed to be used with Voice Recognition.

Introduction

Voice Recognition is primarily used to create reports using voice. 'Command and control' is also provided as part of voice recognition to ease in document navigation and text editing capabilities.

List of commands

The following provides the list of commands that can be used with Voice Recognition:

Command	Dynamic suffix	What does it do?	Control Mode	Dictation Mode
Select	Text or Phrase	Selects the Text or Phrase	Yes	No
Scratch That	--	Deletes the text until the last punctuation mark	No	Yes
Insert	Macro name	Inserts the text related that macro	No	Yes
Next Field	--	Cursor position moves to the next jump point	Yes	Yes
Previous Field	--	Cursor position moves to the previous jump point	Yes	Yes
Move to	Jump point name	Moves to the named jump point with that name	No	Yes
Control Mode	--	Switches to the Control Mode	Yes	Yes
Dictation Mode	--	Switches to the Dictation Mode	Yes	Yes
Repeat Selection	--	If a word was already selected, saying this command searches for the next occurrence of the selected word and highlights it	Yes	No

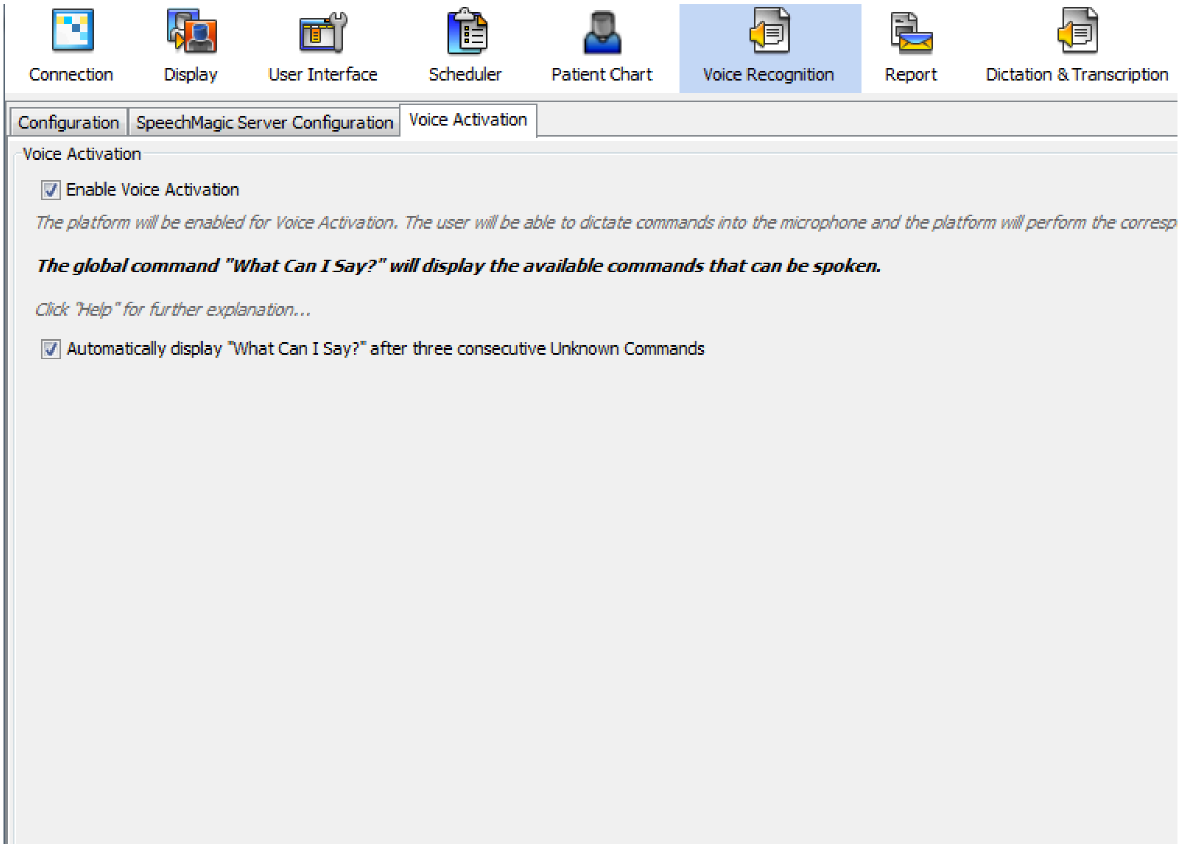
Multiple Documents

A user can edit multiple documents at the same time using Voice Recognition. When two or more documents are open, whenever a user switches to a different document, the voice recognition is performed on the opened document.

Voice Activation

A voice-activated platform allows the user to issue commands by voice, eliminating the need for a mouse and keyboard for portions of the workflow.

The Voice Recognition Options Tab found in Tools → Options contains the "Voice Activation" tab, allowing the user to turn this feature on or off.

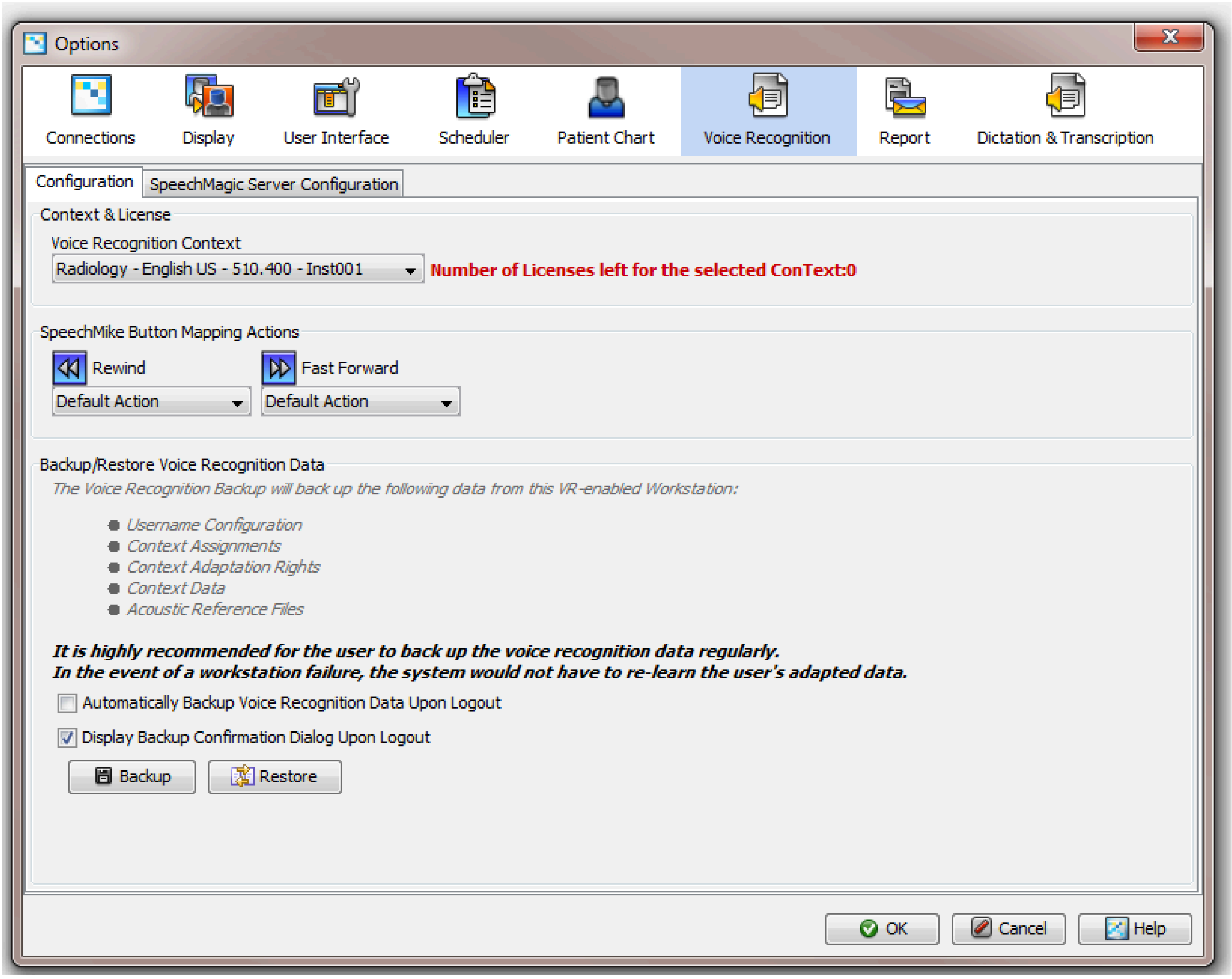


- **Enabling Voice Activation**
  The platform will be voice-activated. After a restart of the platform, the user will be able to issue commands to the platform by voice into the microphone. There is a global command "What Can I Say?" which can be dictated, and this will display the currently available commands that can be spoken.
- **Disabling Voice Activation**
  The platform will not be enabled for Voice Activation. Voice commands will not be recognized.

Go to Voice-Activated Platform for a full overview

Voice Recognition Options

The Voice Recognition Options Tab found in Tools → Options can be used to select a SpeechMagic ConText. It can also be used to configure SpeechMike button mapping actions for spoken commands (e.g. "Next Field" and "Previous Field").

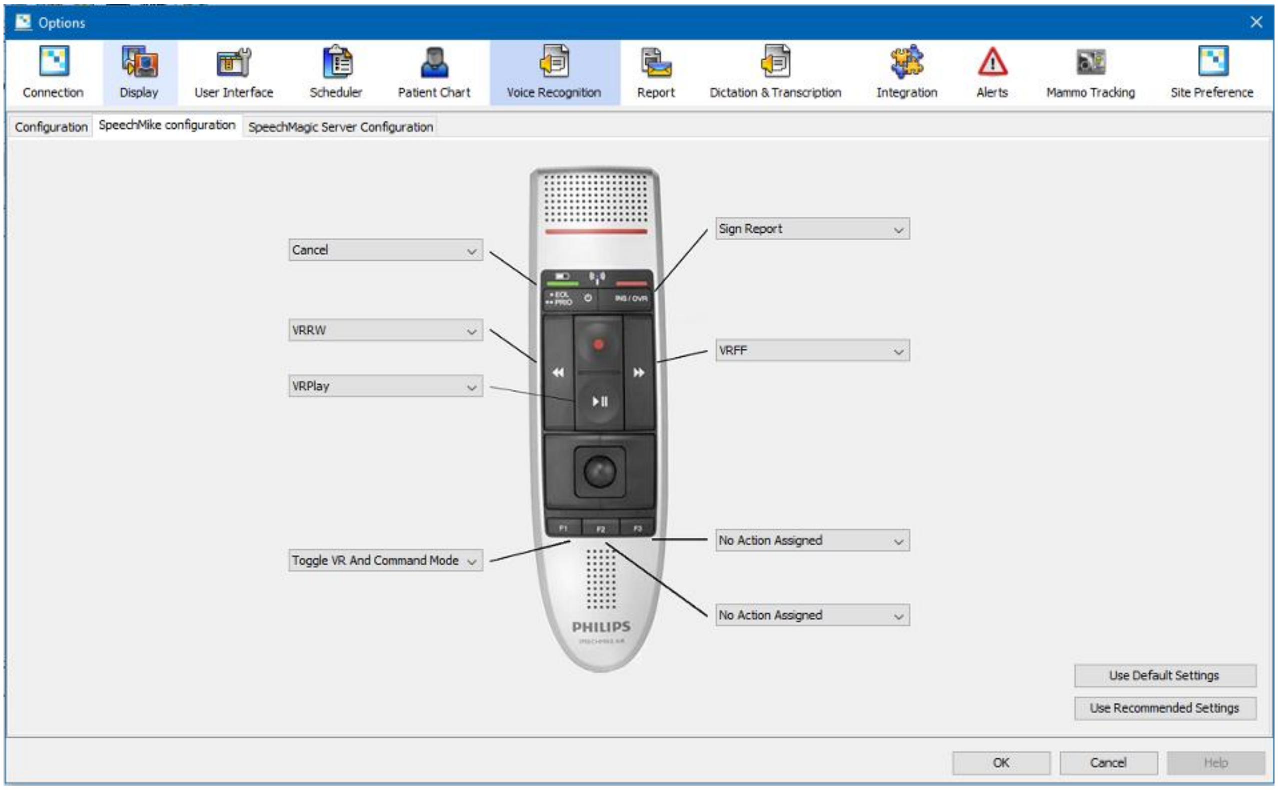


Context

If a SpeechMagic user wants to use another Context other than the default context and if he/she was assigned more than one Context on the SpeechMagic server, user will be able to select that Context.

SpeechMike Button Mapping Actions

Most of the SpeechMike buttons can be mapped to other actions, set to default by clicking "Use Default Settings" button or set to recommended settings by clicking "Use Recommended Settings" button.



Backup/Restore Voice Recognition Data

SpeechMagic™ stores user related data on the local workstation, this data maybe backed up automatically or manually.

Automatic backup

Two options are available:

- **Automatic Backup Voice Recognition Data Upon Logout:** System will perform a backup automatically when user logs out.
- **Display Backup Confirmation Dialog Upon Logout:** System will ask if user would like to perform a backup.

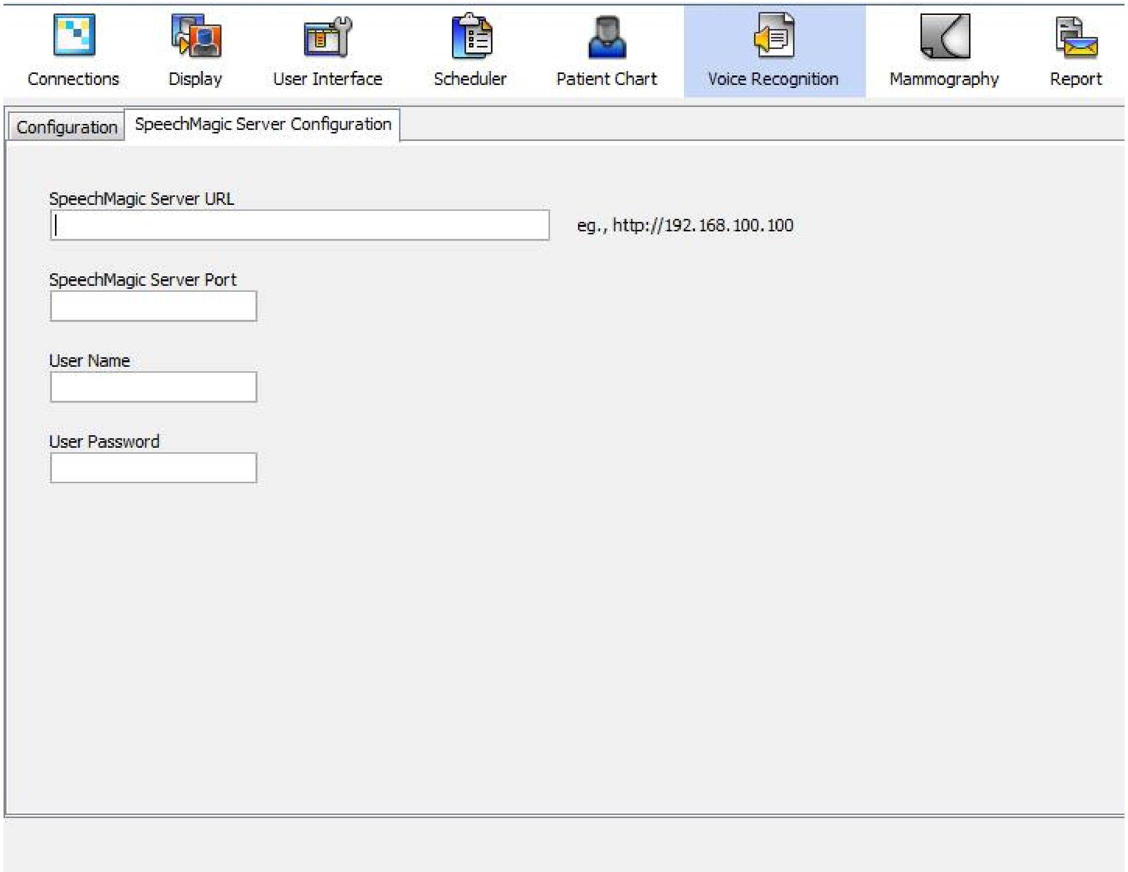
Manual backup, and restore

Users may backup or restore data any time by pressing the corresponding buttons.

SpeechMagic Server Configuration

For a multiple-user Voice Recognition environment, there is a need for a central location that will act as the SpeechMagic server. The benefits of this type of environment allow for the users of the system to go from one workstation to another without losing any of their voice adaptation information. The Speech Recognition engine will have their information stored centrally so that they are not tied to one machine.

The Voice Recognition Options Tab found in Tools → Options can be used to set up this central SpeechMagic Server.



- **SpeechMagic Server URL**
  This is the IP Address of the central server.
- **SpeechMagic Server Port**
  This is the port that will need to be open for the Platform to connect.
- **User Name**
  The user name to authenticate with the SpeechMagic Server
- **User Password**
  The password in correlation with the user name

Acknowledgements

This software uses the FreeImage open source image library. See http://freeimage.sourceforge.net for details. FreeImage is used under the FIPL, version 1.0.

ImageGrid Viewer

About ImageGrid Viewer

The ImageGrid Viewer allows its users to view medical images and studies archived on an ImageGrid PACS Appliance. The application resides on the ImageGrid PACS Appliance and it can make use of a workstation with up to 5 displays to view studies from remote and on-site locations.

Intended Use of this Document

This document is a reference and user’s manual for the ImageGrid Viewer, detailing the software's proper configuration and general usage.

This document is not intended to be used as instructional material for implementing medical procedures. It is not intended to be used as a substitute for live (in-person) instruction by a trained professional.

The ImageGrid Viewer is a software system intended for professional use only.

System Requirements

ImageGrid™ Radiology Viewer/Advanced Viewer/Referring Physician Viewer

Workstation:	Desktop PC
Operating System:	**Windows 7 64-bit Recommended** Windows 7 Windows 8 Windows 8.1 Windows 10
CPU:	Intel Core 2 Duo 2.4 GHz or Better
Memory:	3 GB RAM
Free Disk capacity:	30 GB
Monitor:	19" 1600 x 1200 resolution / 32 bpp monitor
Optional monitors:	Dual 2MP Displays: (1600 x 1200 display resolution)
Video Card:	128 MB PCI-e with DirectX support
Network connectivity:	Gigabit TCP/IP Local Area Network (LAN)
Site Installation:	ImageGrid PACS (preinstalled on site)
Java Runtime Environment	Version 6 Update 7 or higher **Version 7 Recommended**
Internet Browser:	Microsoft Internet Explorer Version 8.0+ or Mozilla Firefox Version 11+

Notes

- More demanding uses of the application might require a workstation with higher specifications. Contact Candelis Technical Support.
- Systems with approved peripheral hardware components (SpeechMike, Foot Pedal etc.) require Windows.

ImageGrid™ MammoTech/3DView

Workstation:	Desktop PC
Operating System:	Windows 7 64-bit Windows 8 64-bit Windows 8.1 64-bit Windows 10 64-bit
CPU:	Intel Core i5 2400 or better
Memory:	8 GB RAM or more
Free Disk capacity:	128 GB of free space, SSD recommended
Monitor:	19" 1600 x 1200 resolution / 32 bpp monitor
Video Card:	DirectX 11 video card
Network connectivity:	Gigabit TCP/IP Local Area Network (LAN)
Site Installation:	ImageGrid PACS (preinstalled on site)

Java Runtime Environment	Version 6 Update 7 or higher **Version 7 Recommended**
Internet Browser:	Microsoft Internet Explorer Version 8.0+ or Mozilla Firefox Version 11+

ImageGrid™ Mammography Viewer

- Candelis Mammography Workstation

ImageGrid™ Radiation Therapy Review

Workstation:	Desktop PC
Operating System:	**Windows 7 64-bit Recommended** Windows 7 Windows 8 Windows 8.1 Windows 10
CPU:	Intel Core 2 Duo 2.4 GHz or Better
Memory:	4 GB RAM
Free Disk capacity:	30 GB of free space, 10K RPM SAS drive or SSD
Monitor:	19” 1600 x 1200 resolution / 32 bpp monitor
Optional monitors:	Dual 2MP Displays: (1600 x 1200 display resolution)
Video Card:	128 MB PCI-e with DirectX support
Network connectivity:	Gigabit TCP/IP Local Area Network (LAN)
Site Installation:	ImageGrid PACS (preinstalled on site)
Java Runtime Environment	Version 6 Update 7 or higher **Version 7 Recommended**
Internet Browser:	Microsoft Internet Explorer Version 8.0+ or Mozilla Firefox Version 11+

Note

The MPR feature will see improved performance if the Hard Drive speed is more than 10000 RPM or if SSD is employed.

Laptop users

In the following table you will see the screen resolutions we recommend for different study configurations:

- 1280x800-1366x768 (1MP)
  - 1 CR series or 2 CT/MR/US series on the screen
- 1440x900 (1.3 MP)
  - 1-2 CR series or 4 CT/MR/US series on the screen
- 1920x1080 (2 MP)
  - 4 CR series or 6 CT/MR/US series on the screen.
- 2880x1800 (5.2 MP)
  - 1 full CR/CT/MR/US study with 1 prior simultaneously showing on the screen

Attachments

The ImageGrid Viewer can manage Attachments in 3 Categories:

1. Attachments - Attachments stored in ImageGrid Database
2. Reports - Draft or signed final reports stored in ImageGrid Database
3. DICOM Attachments - Attachments attached to study as DICOM instance files

Depending on different categories, ImageGrid Viewer can manage Attachments in different ways

Attachments

- Import a file from the workstation
- Scan a physical document
- Create a dictation file
- Create a new note
- Open, Delete and Export
- Attach attachment to Study

Reports

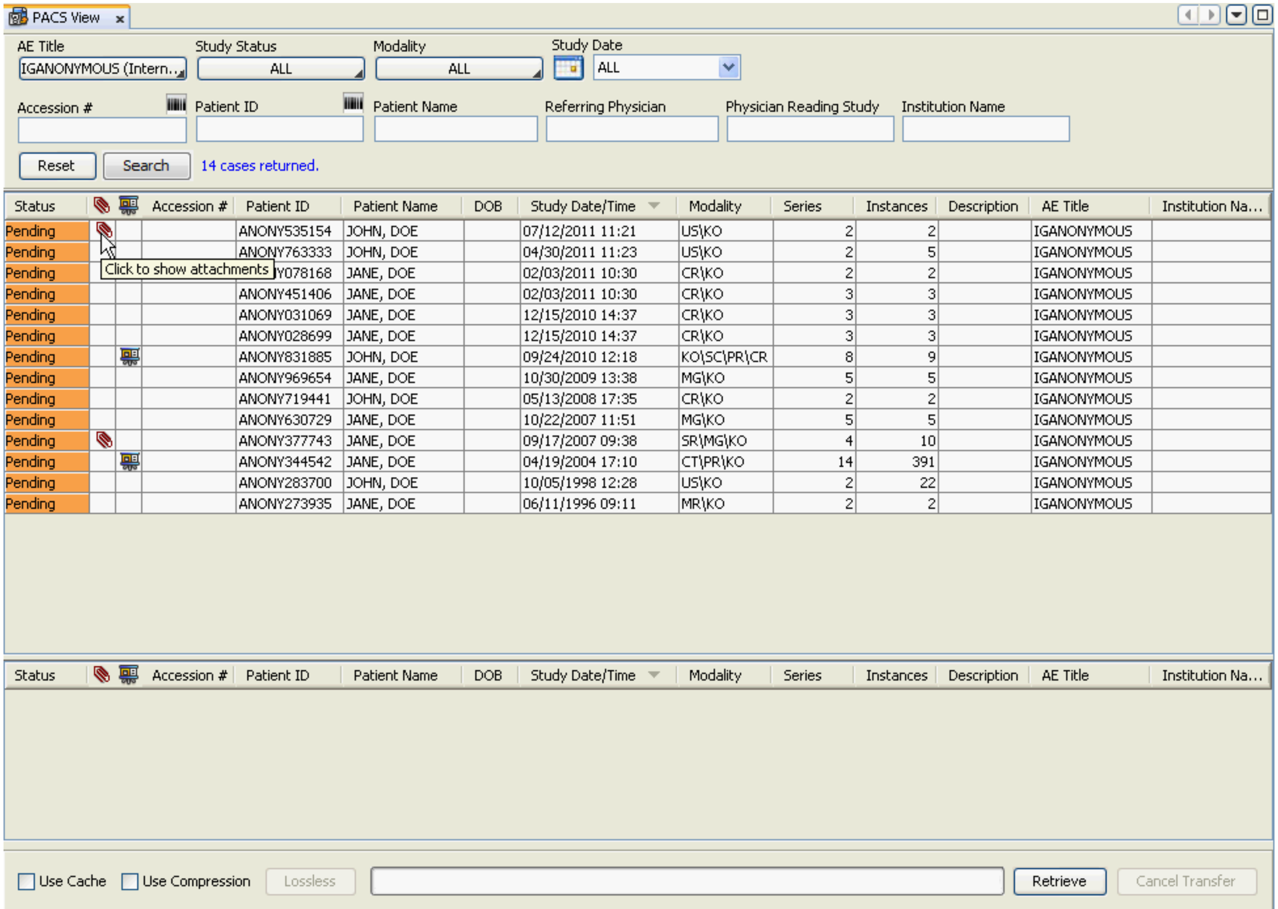
- Create report from template
- Add Addendum to Report
- Import a file from the workstation
- Scan a physical document
- Create a dictation file
- Open, Delete and Export
- Attach report to Study
- Deliver attachment to referring physician

DICOM Attachments

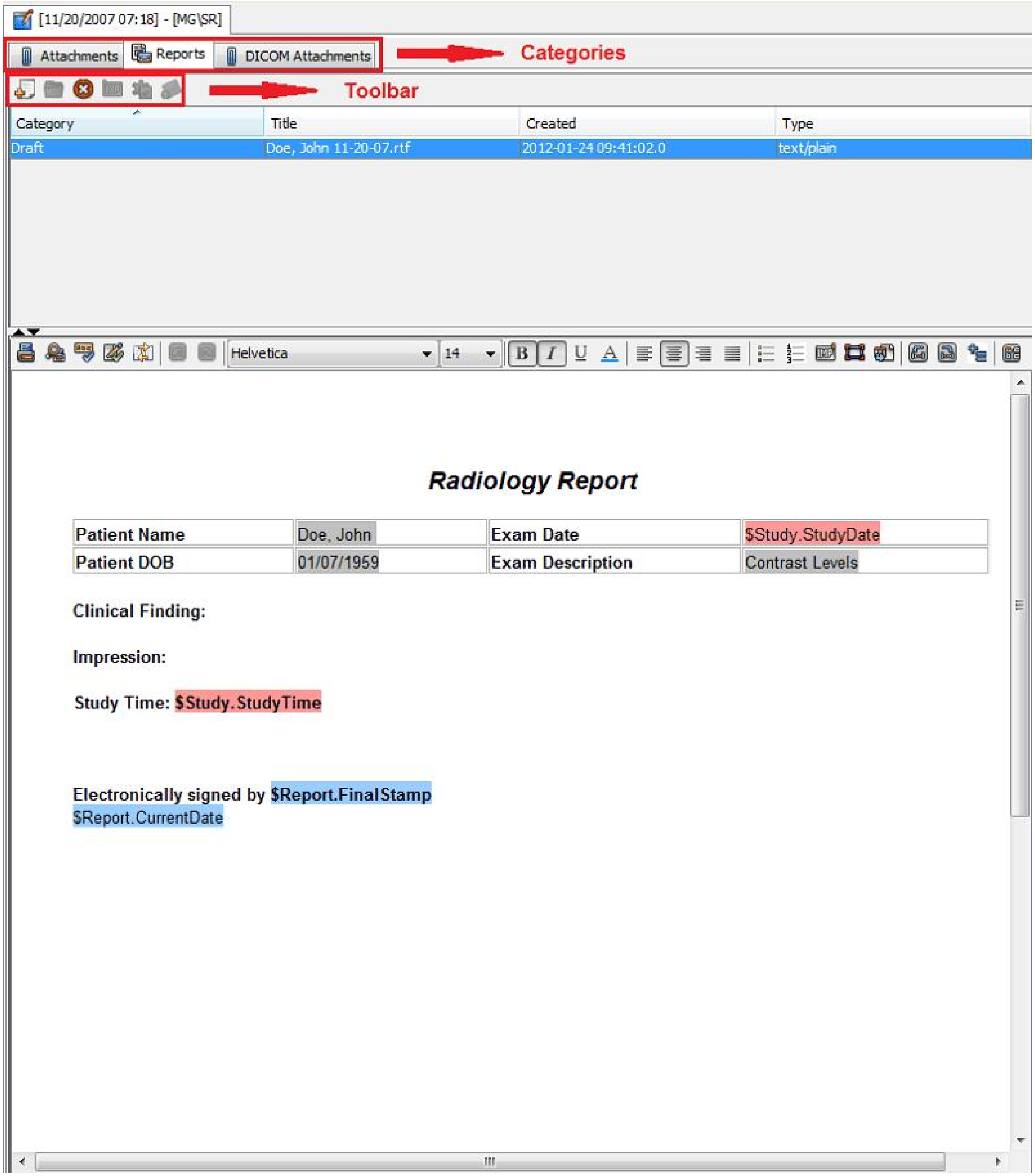
- Open
- Export

To open the Attachment window, go to the main window where the studies from a given AE Title have been searched and click on the second column (the one to the right of the Status column), in the study you would like to work with.

Note: Those studies that already have document attached will show the following icon ( ) in the same column. If the column is empty, it means no attachment is present in that study.



The Attachment window will be opened. If there are attachments, they will automatically show up in the Attachment list. If not, the list will be empty. To open those attachments simply click on them.



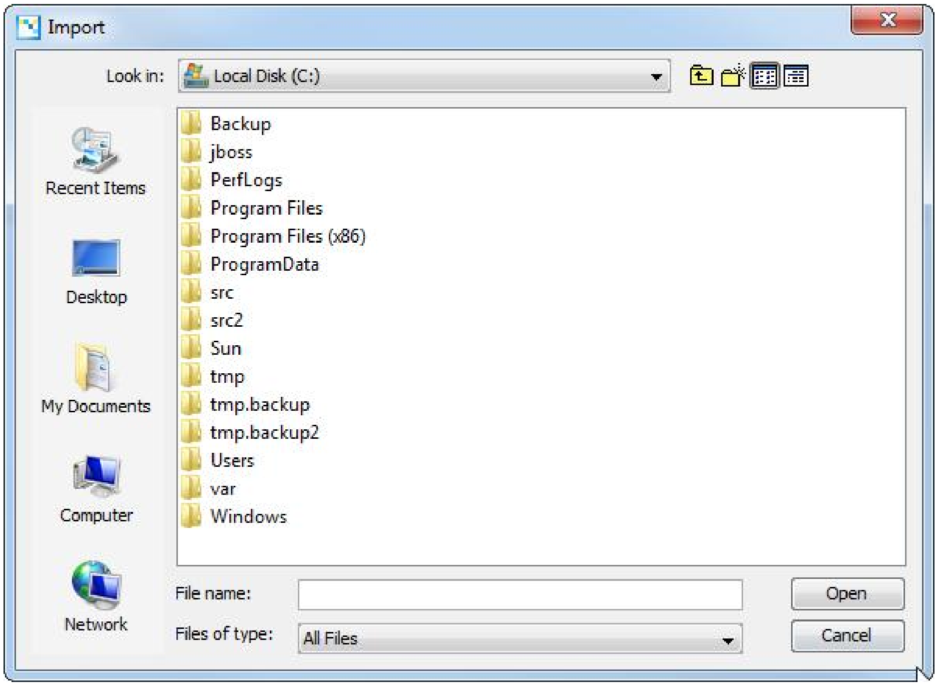
The toolbar above the table represents different options you have to manage Attachments.

Creates a new attachment/report:

Click on this icon to bring up a popup menu with following options

Import a file from the workstation

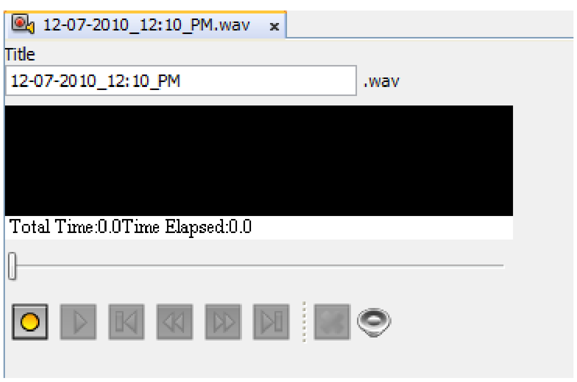
If you click on this icon the following window will open:



From here, you can search through your workstation to find the document you would like to import as an attachment. Imported attachments can be in any format. Once the document has been selected click "Open" and it will automatically be attached to the study and appear in the Attachment list. Once an attachment is in the Attachment list, you can open it by simply clicking on it.

Dictating a Sound File

Clicking on this icon opens the "Dictation Window".



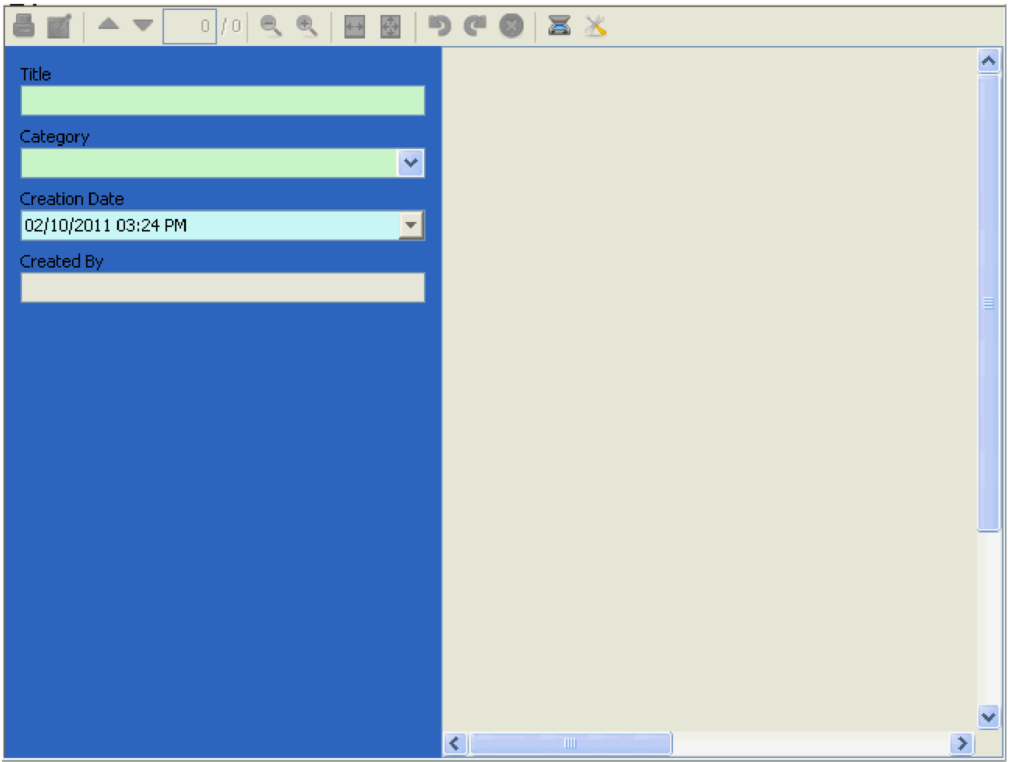
If a microphone is connected to your computer, you can create a .wav file by clicking on the record button ( ). Once something has been recorded, the other buttons are enabled and you can play ( ), stop ( ), go to the beginning of the recording ( ), rewind ( ), fast forward ( ), go to the end of the recording ( ), clear the recording ( ) and manage the volume of the reproduction ( ).

Scanning Physical Document

Clicking on this icon opens the Scan panel.

To scan a document you can use both the Scan ( ) and the Advanced Settings ( ) buttons. Please note that Advanced Settings will vary depending on what scanner you have connected to your workstation.

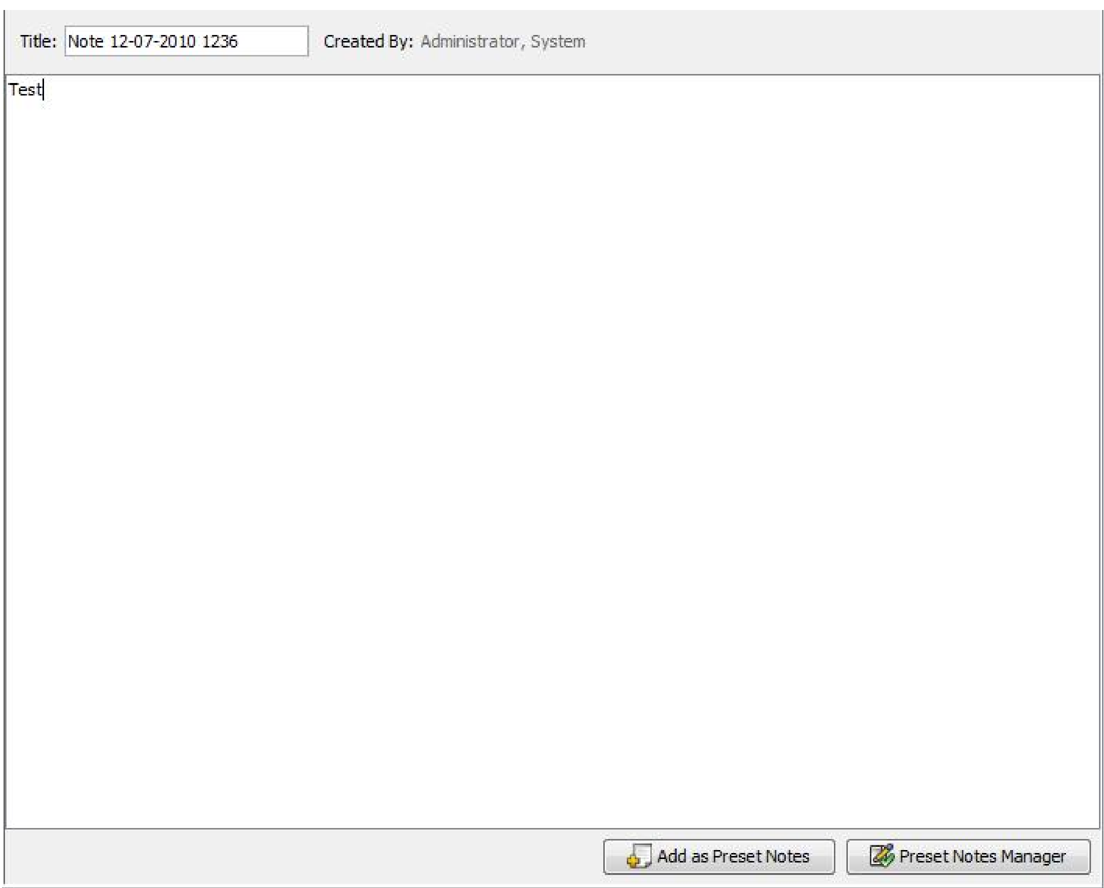
To setup a scanner, please go to Tools -> Options -> Connections -> ImageGrid Server Settings and pick a scanner in the scanner field.



Once you have scanned your document you can zoom in (), zoom out (), rotate to the left (), rotate to the right (), delete current page(), fit the page to width () or fit to all ().

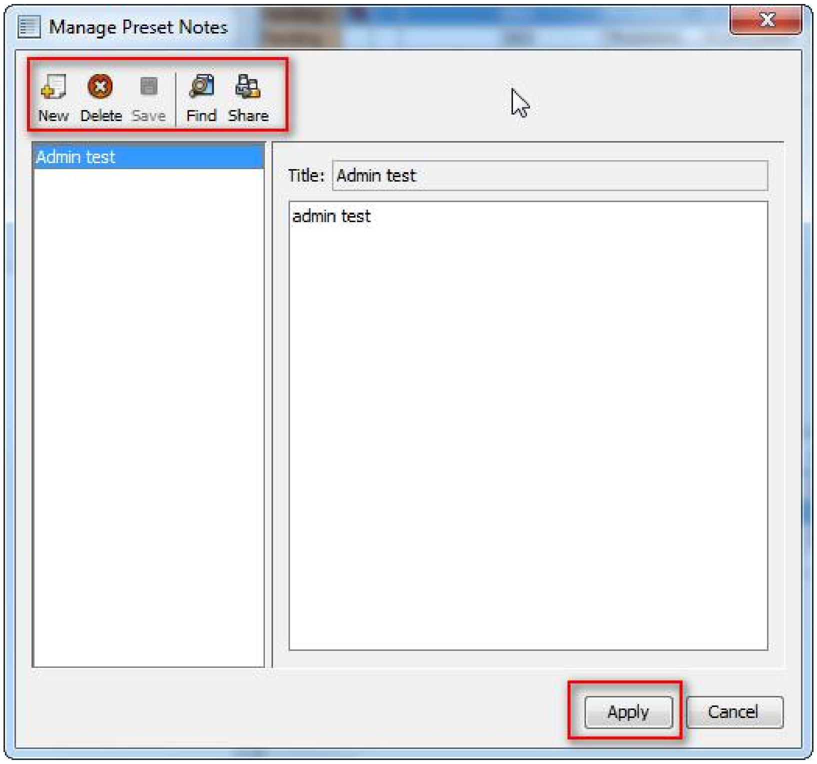
Creating Notes

Clicking on this icon opens the notes panel.



Once you have typed the information, you can save the Note by clicking "Save" ( ) on top left corner and a plain text file will be added.

Each user may define several preset notes to save time when creating notes. These preset notes can be used by clicking on the "Preset Notes Manager" button. The preset notes manager will be shown as below:



The buttons on the toolbar perform the following actions:

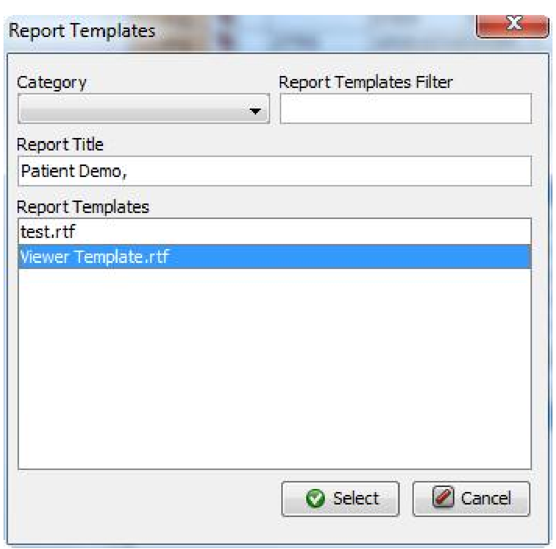
- **New** - Create a new preset note
- **Delete** - Delete the selected preset note
- **Save** - Save preset note

- **Find** - Find other user's shared preset notes, with the option of importing them.
- **Share** - Share your preset note with other selected users. For more details, refer to Shared Files.

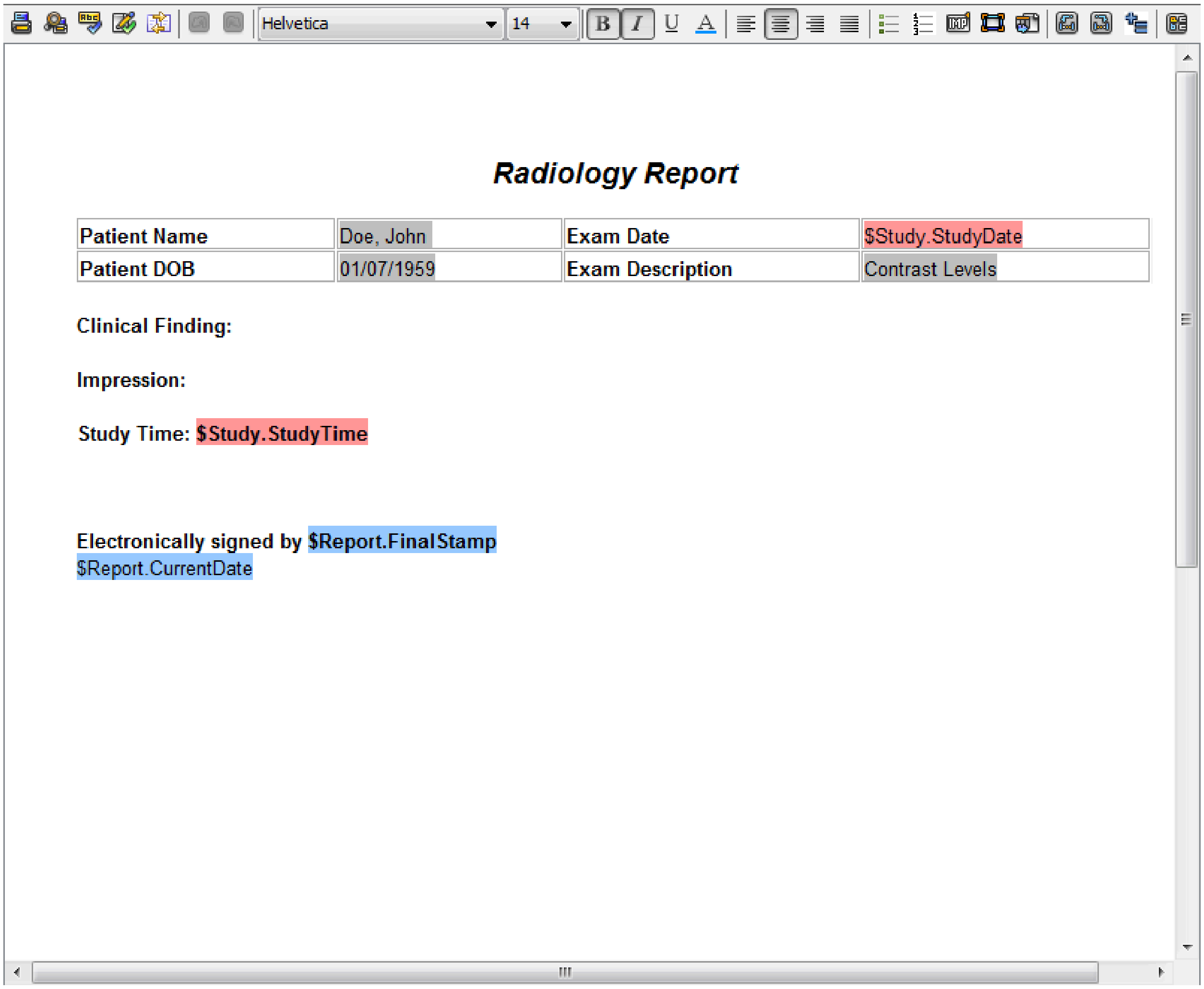
To apply, select a preset notes from the list and click "Apply" button

Create a new report

Clicking on this icon opens the report template dialog. For creating template, see Report Template Creation for more information.



Select the template from the list. Then click "Select". The report panel will be loaded with pre-defined template



Refer to Report Creation for more details.

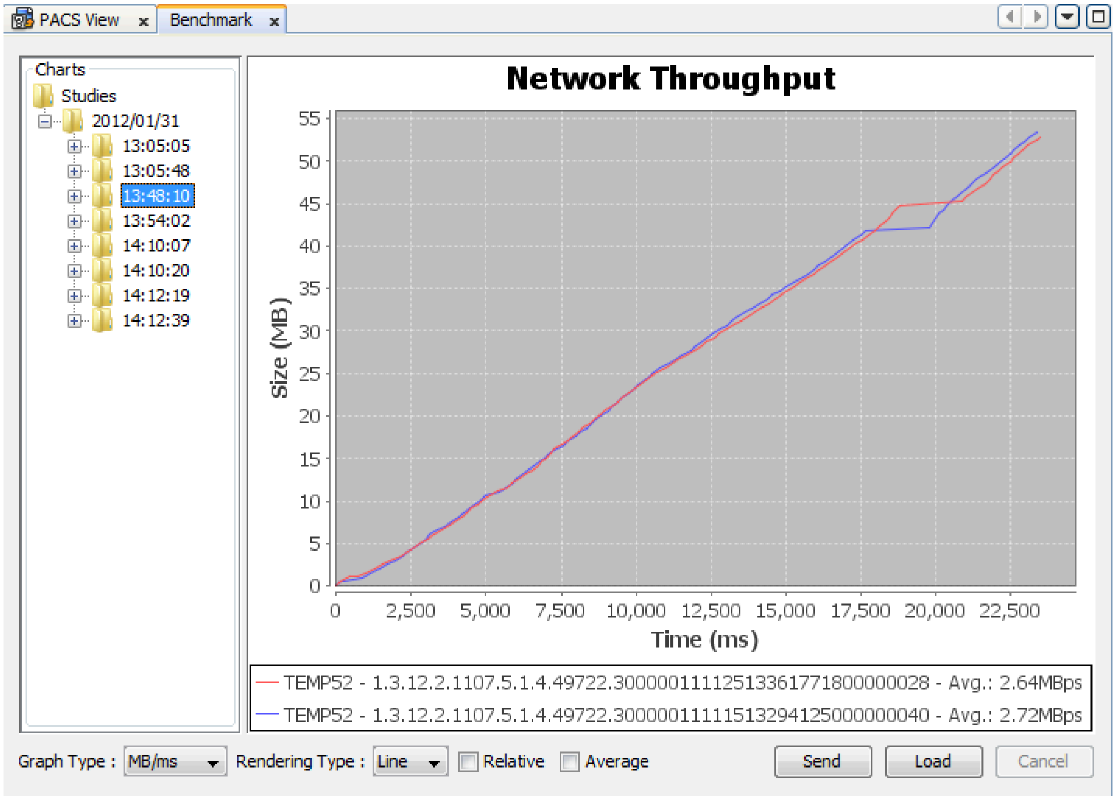
DICOM Attachments

We support the following options for DICOM Attachments:

- **Open** - Open DICOM Attachment with local program depending on the file extension
- **Export** - Export DICOM Attachment and save to your workstation.

Introduction

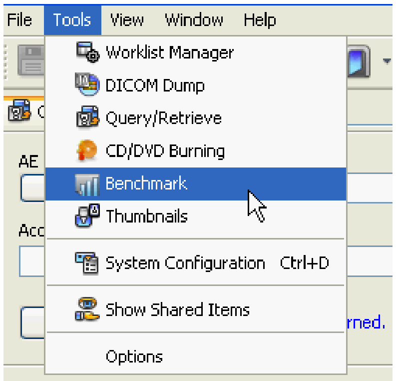
The benchmark tool provides the ability to view throughput information of the local machine. This tool organizes the network traffic in a timeline and displays the information in a graph.



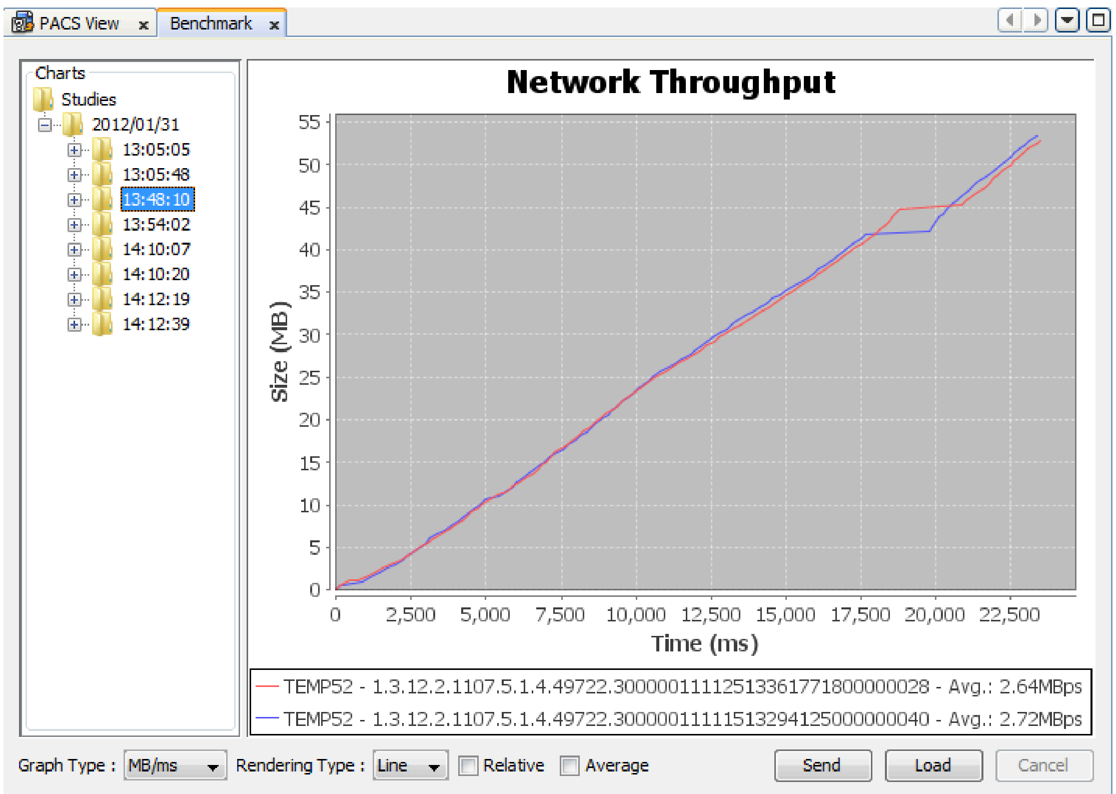
Benchmark Tool

This tool will help you analyze network throughput of the local machine.

To open the Benchmark tool, select Benchmark under Tools in the main window.



The Benchmark Tool will be displayed.



You may select the date and time of downloaded studies to be displayed in the graph.

Display parameters

The following parameters are used to graph information to the user:

- Graph Type: Cumulative (MB/ms) or Differential (MBps/ms)
- Rendering Type: Line or Point
- Relative: Displays all selected graphs with common origin
- Average: Displays average throughput

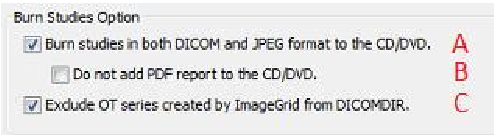
Throughput information is stored locally. The user can store/load benchmark data to the ImageGrid by clicking the Send/Load button.

CD/DVD Burning

Burning Options

This feature provides various options to burn one or multiple studies and related files to a CD/DVD.

There are 3 checkboxes in the Tools-Options-Connection-Download Settings-Burn Studies Option panel: Checkbox "Burn studies in both DICOM and JPEG format to the CD/DVD" (checkbox A), checkbox "Do not add PDF report to the CD/DVD" (checkbox B) and checkbox "Exclude OT series created by ImageGrid from DICOMDIR" (checkbox C).



By default, checkbox A is checked. In this case, DICOM images, JPEG images and a program to retrieve a compact viewer will be burnt into the CD/DVD. If it is unchecked, only DICOM images will be burnt into the CD/DVD.

Checkbox B depends on checkbox A. It is enabled once checkbox A is checked. It is cleared and disabled once checkbox A is unchecked. If checkbox B is checked, the RIS signed reports in PDF format will not be burnt into the CD/DVD. The corresponding OT series in the study will not be affected.

Checkbox C is independent of checkbox A and B. OT series created by ImageGrid in any of the following ways will be excluded from the DICOMDIR (one file located at the root of the CD/DVD) once it is checked.

- RIS signed report.
- Viewer signed report.
- Attachments imported in Viewer and attached to study.
- Attachments imported in RIS and attached to study.
- Attachments imported in WebGUI and attached to study.

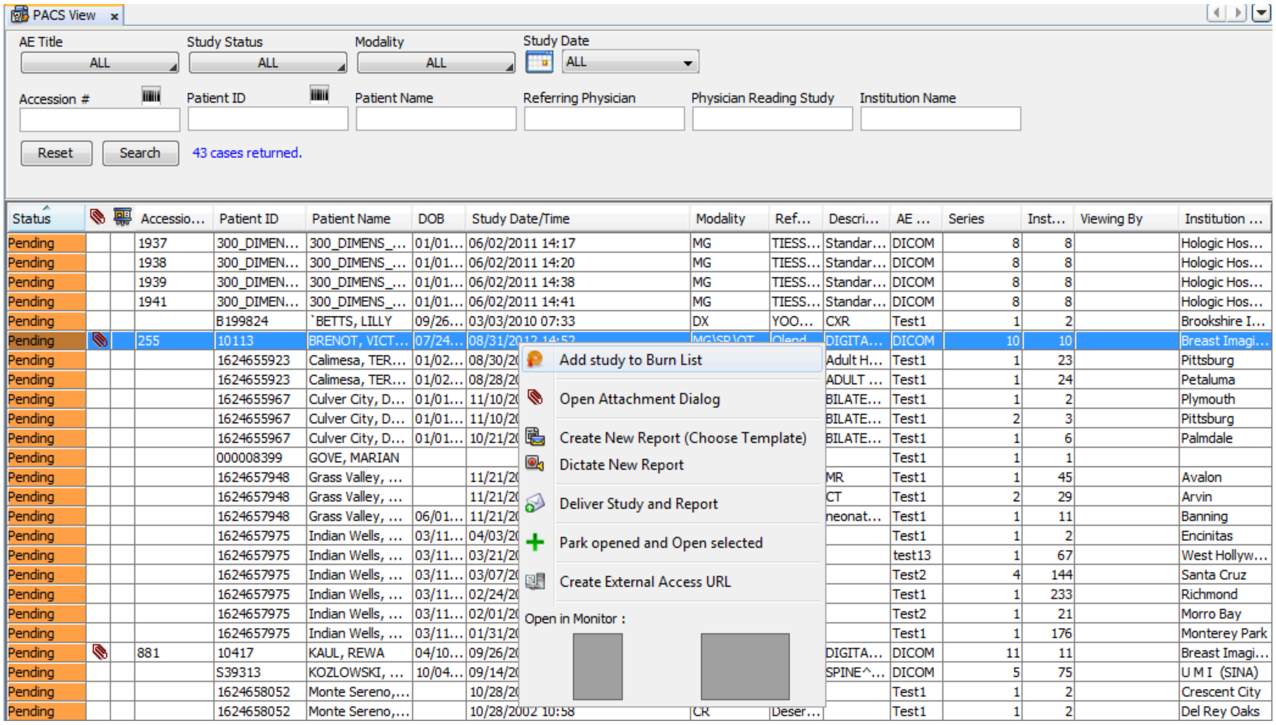
The corresponding OT series in the study will still be burnt into the CD/DVD when checkbox C is checked. But if later the study in the CD/DVD needs to be opened/imported by another software, it is recommended to scan the whole CD/DVD folder for DICOM files instead of using the DICOMDIR, so that the OT series can still be shown/imported

Please note that checkbox C is not applicable to studies that have a modality of OT only.

Burning Steps

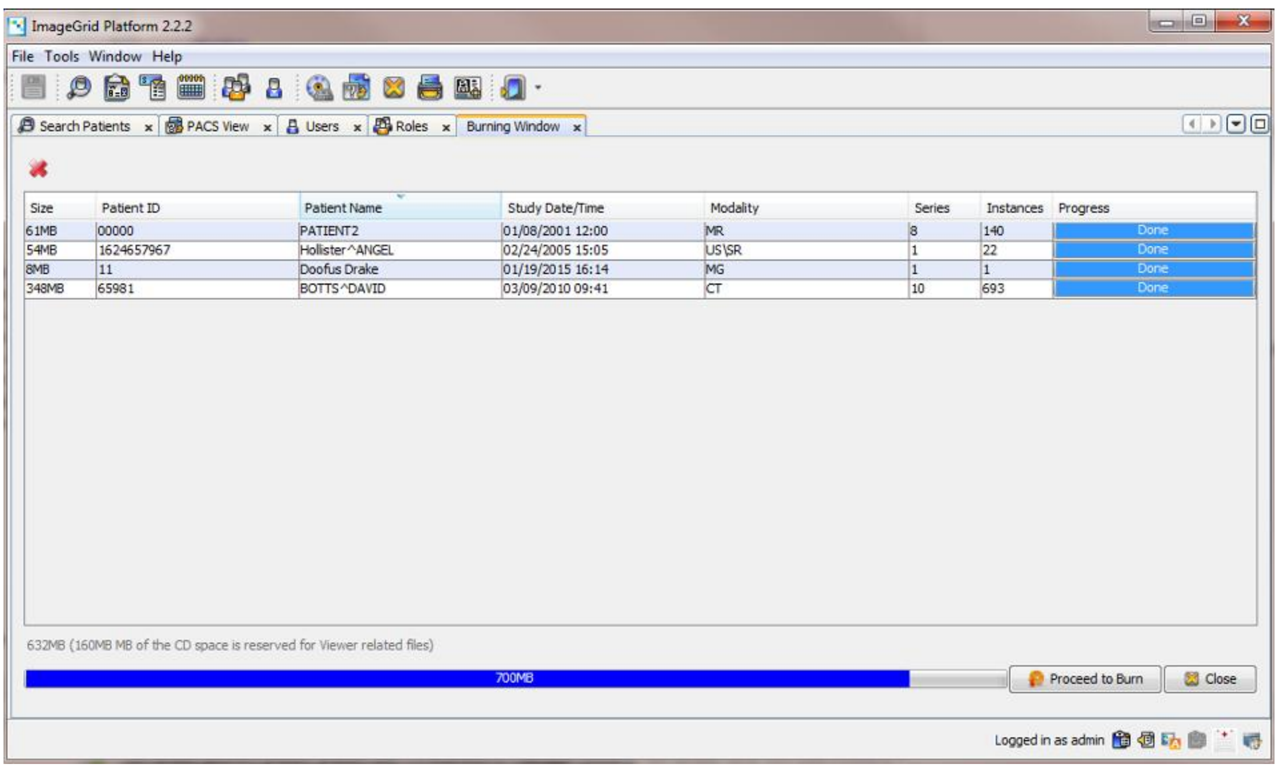
Begin by searching an AE Title to obtain a list of studies.

Right click on the study you want to add to the removable medium and select "Add study to Burn List".

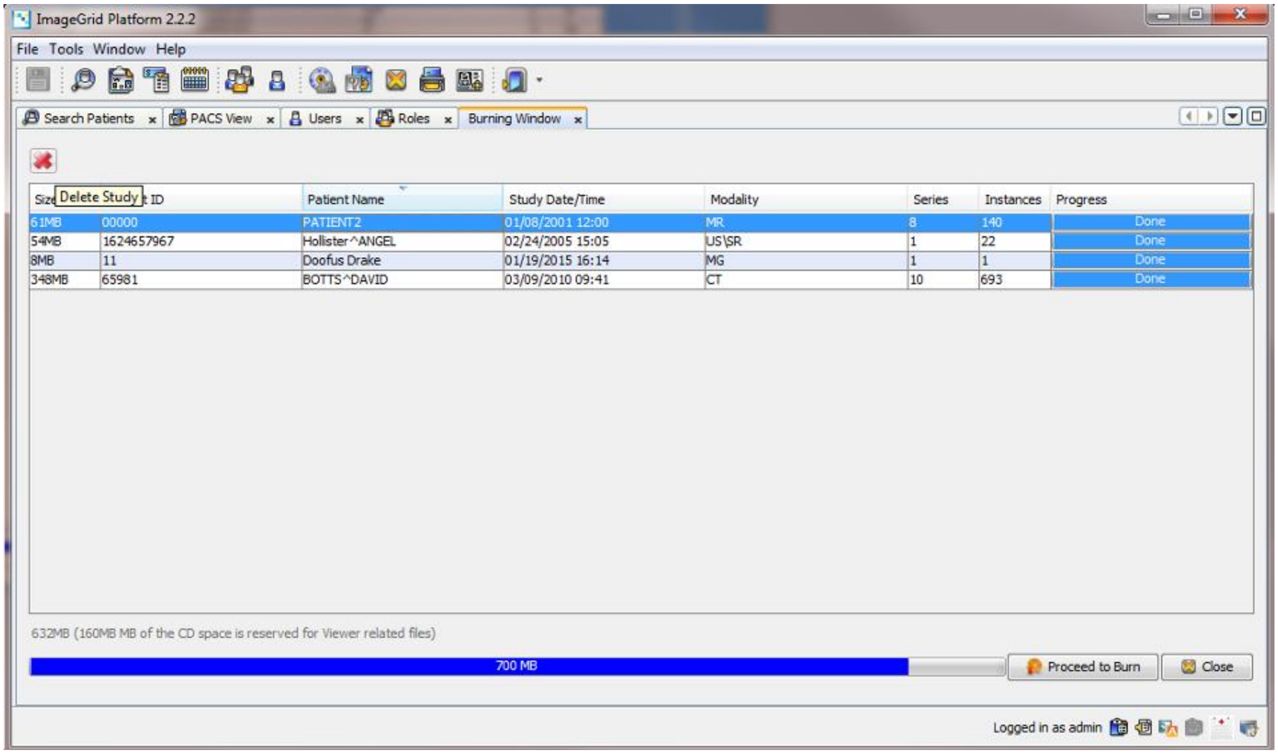


The Burning window will be displayed:

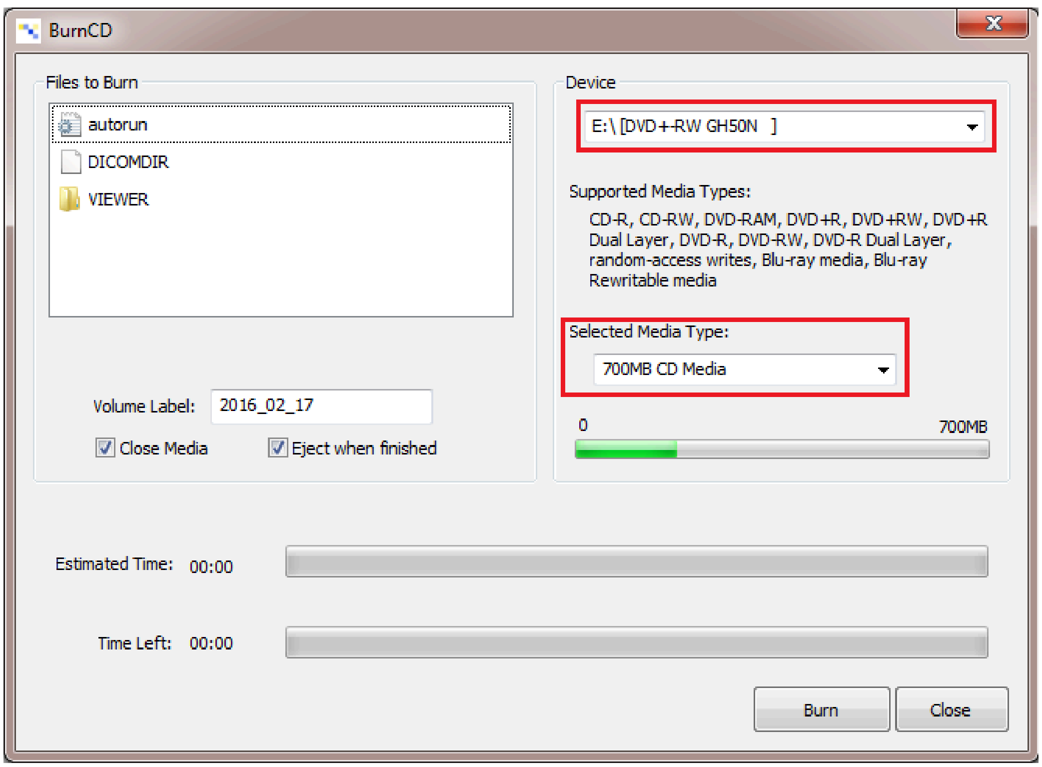
Keep adding studies to the burn list. The disc usage will be updated accordingly. The viewer currently supports 700MB for CD and 4.7GB for DVD, but this depends on the device capabilities.



To remove a study, select one study (highlighted) and click the remove button



Click next to bring up the device and media selection dialog shown as follows:



The following files will be written to the root folder of a CD/DVD when the "CD/DVD-Burn studies in both DICOM and JPEG format" is checked: an autorun inf file, a DICOMDIR file a folder called "VIEWER".

The autorun inf file is used to read the disc and run the compact viewer automatically when the autorun is enabled.

The DICOMDIR is a file that contains index and summary information for all the DICOM files on the media.

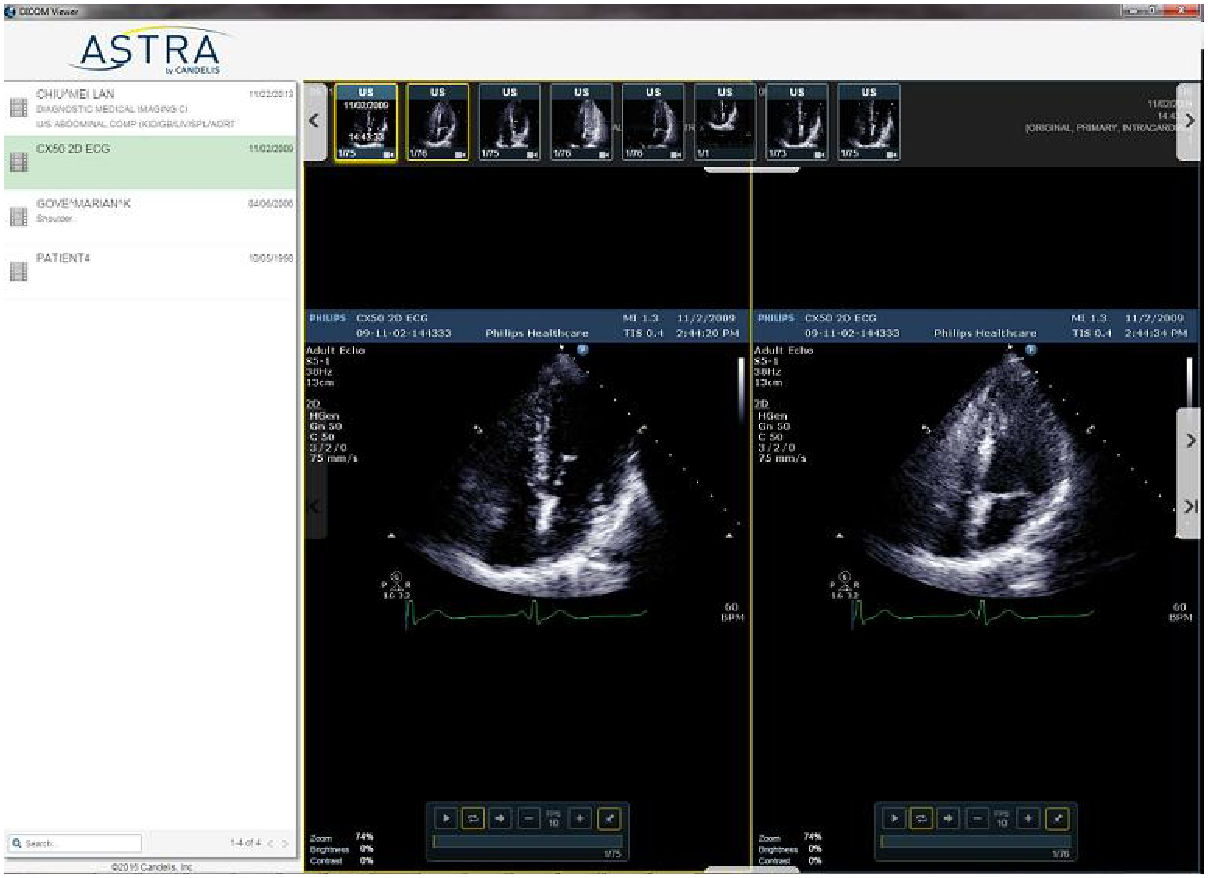
The VIEWER folder includes the following files:

- DICOMDIR.xml: an xml file that contains study metadata and the path to each study.xml and radiology final report.
- IMAGES: a folder that contains DICOM format images.
- RENDERED: a folder that contains JPEG images and a study.xml file for each study.

- REPORT: a folder that contains radiology final reports in PDF format.
- Multiple files related to the compact viewer.

When the "CD/DVD-Burn studies in both DICOM and JPEG format" is not checked, only the IMAGES folder and the DICOMDIR file will be burnt into the CD/DVD.

Select the device and media, then click "Burn" to start burning.



Please note that though very rare, some studies do not have date/time. In this case, "00/00/0000" will be displayed on the web-based viewer as the date.

ASTRA Plus System Requirements

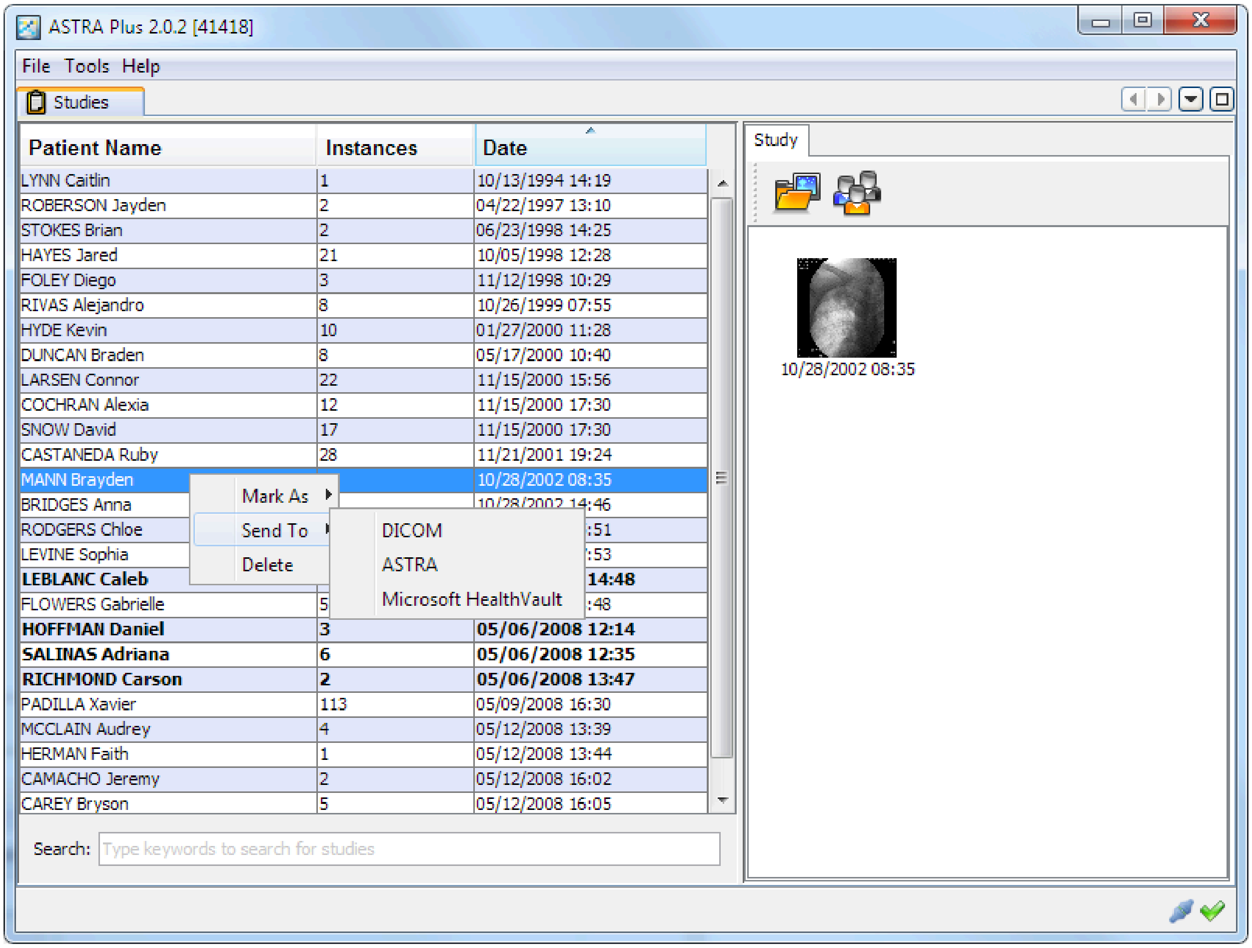
More demanding uses of the application might require a workstation with higher specifications.

- CPU: Intel Core 2 Duo 2.4 GHz or better
- Memory: 3 GB RAM or more
- Hard Drive Capacity: 30GB or more
- One 1600 x 1200 32 bpp monitor
- Network connectivity

ASTRA Plus Studies List

The Studies List shows all locally available studies.

To perform study actions you can use right-click menu.

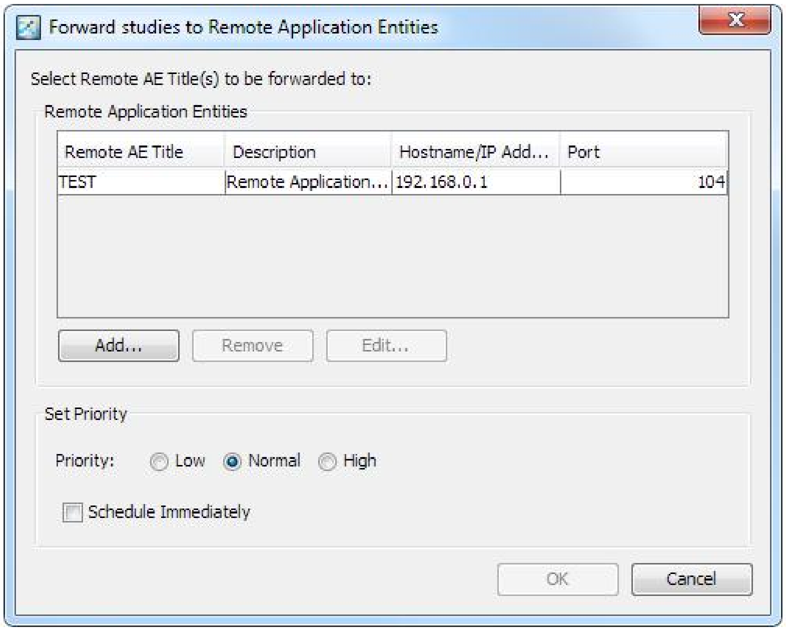


Study name font weight indicate if the item has been read or not. To change the status manually, use [Mark As] submenu.

To delete selected studies, click [Delete] and confirm deletion in the pop-up dialog.

To send selected studies, use [Send To] submenu. Each menu item brings up correspondent dialog which will guide you through the process.

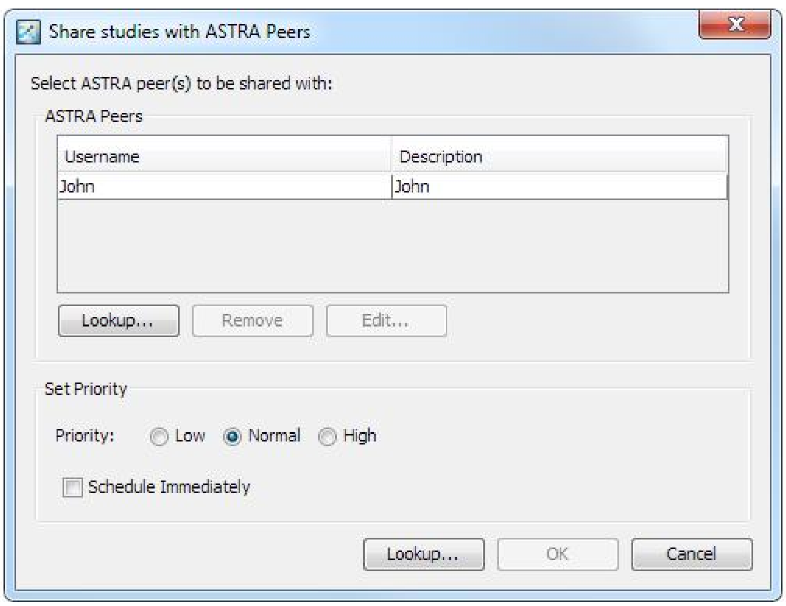
Send to DICOM



Select Remote Application Entities from the list. You can set the priority to [Low], [Normal] and [High].

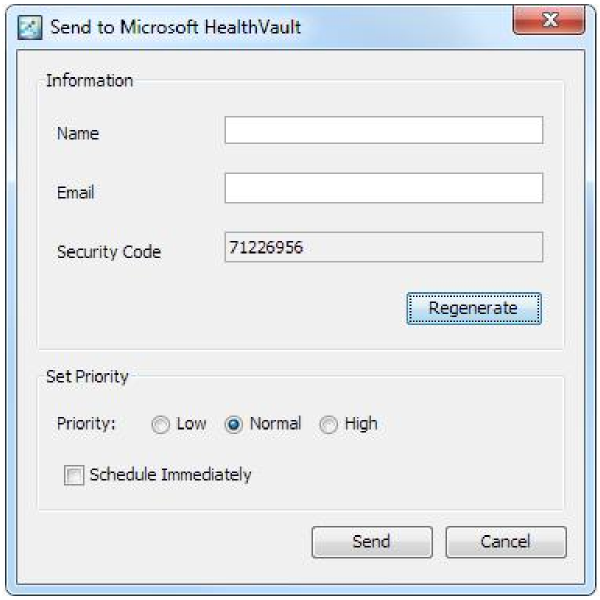
If [Schedule Immediately] is checked, jobs will be processed immediately even with sending time window enabled.

Send to ASTRA



Select destination ASTRA Peer from the list. Click [OK] button to send study to the selected ASTRA peer.

Send To Microsoft HealthVault

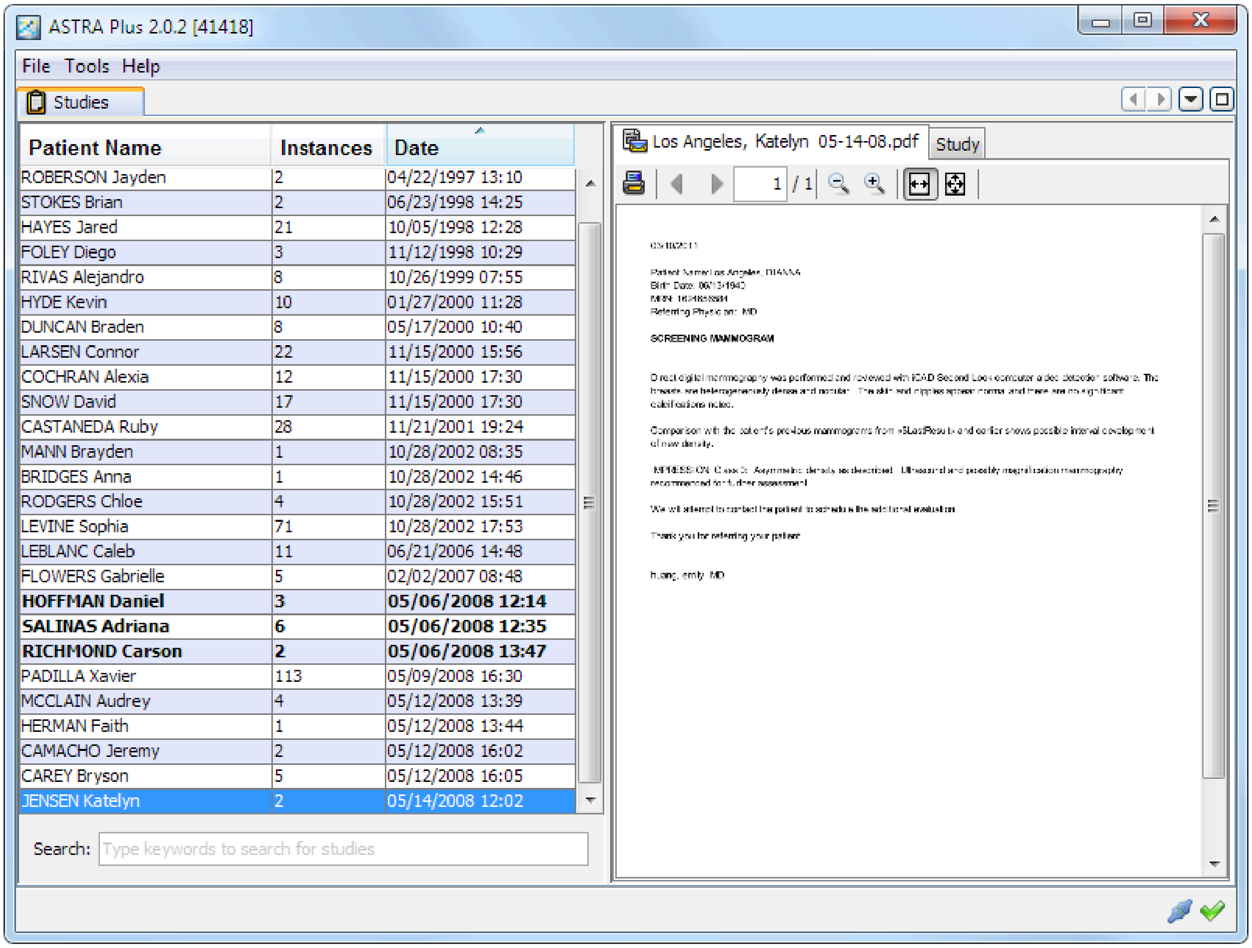


Type destination name and email. Click [Send] button to send the study.

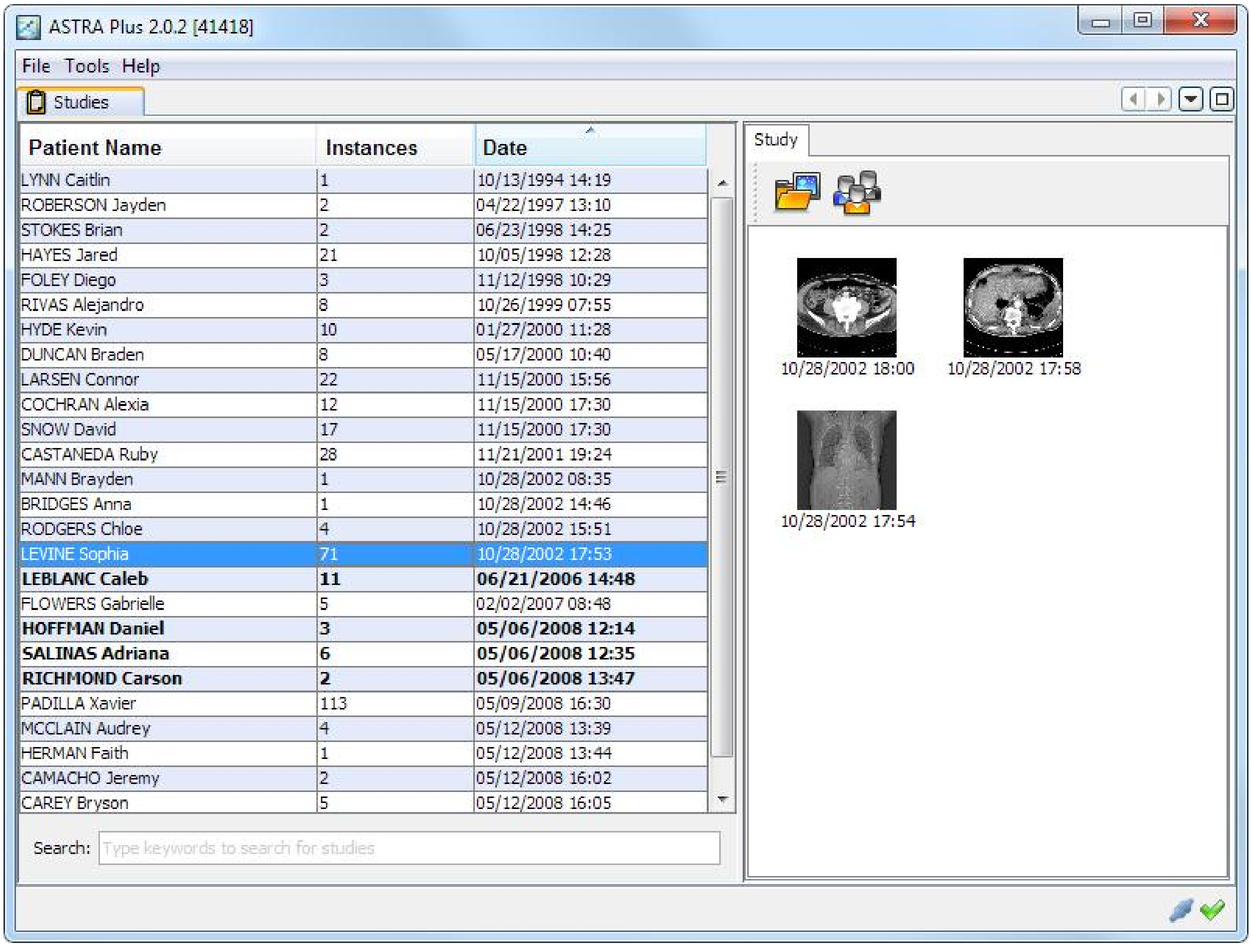
ASTRA Plus Local Studies

Local Studies provides the ability to view, delete and forward studies.

Select a study from the left-hand side panel. The selected study and reports belonging to it will be opened in separate tabs.



All series belonging to the selected study will be displayed under Study tab.



Double clicking on a series folder icon will open that series under a separate tab.

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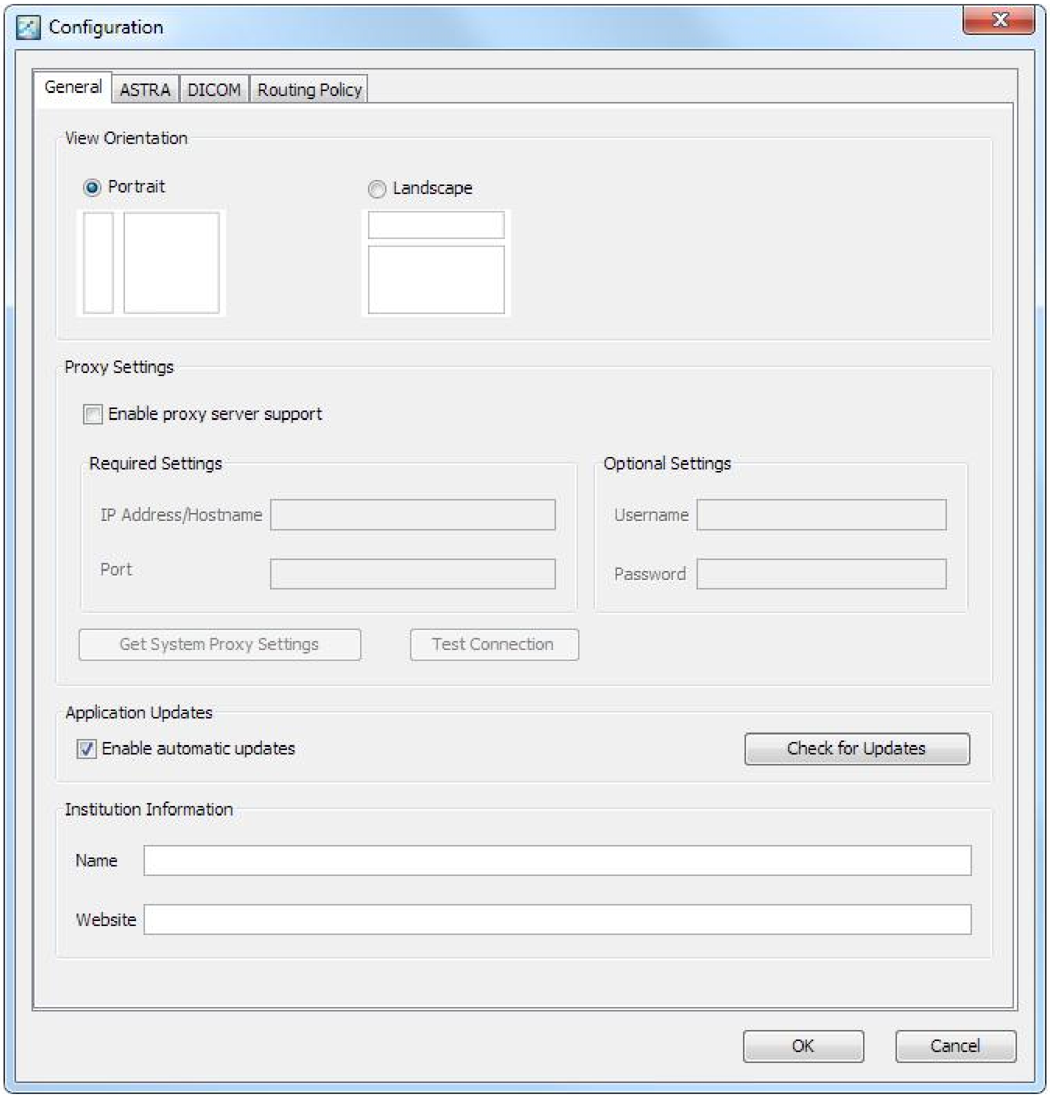
ASTRA Plus Configuration

The configuration dialog provides the ability to change settings for ASTRA Plus.

To bring up the configuration dialog, select [Tools] from the top drop-down menu, then select [Configuration].

General Settings

The [General] tab helps you to set up: View Orientation, Proxy Settings, Automatic Updates, and Institution Information.



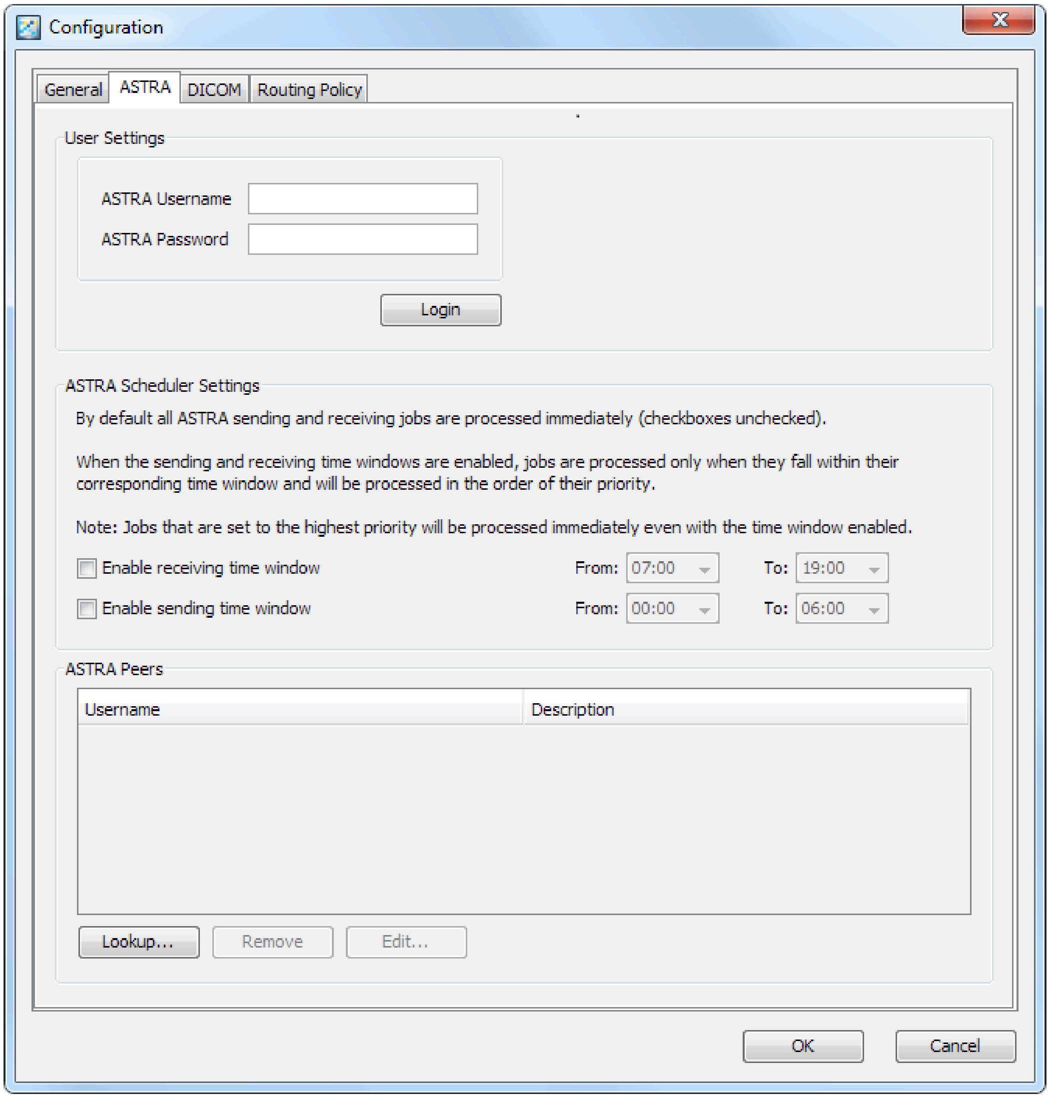
If your system has proxy settings, check [Enable proxy server support] and click [Get System Proxy Settings].

Your system proxy settings will be populated in IP Address/Hostname and Port.

Clicking [Test Connection] will test whether the ASTRA Plus on your machine can connect to Candelis ASTRA Server.

ASTRA Settings

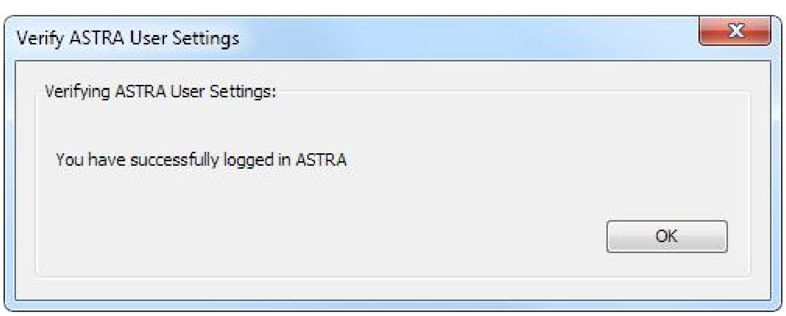
The [ASTRA] tab helps you to set up ASTRA service settings.



User Credentials

Enter your ASTRA User name and password here.

Click [Login] to verify the settings with Candelis ASTRA Server. After verification, the following dialog will appear on the screen.

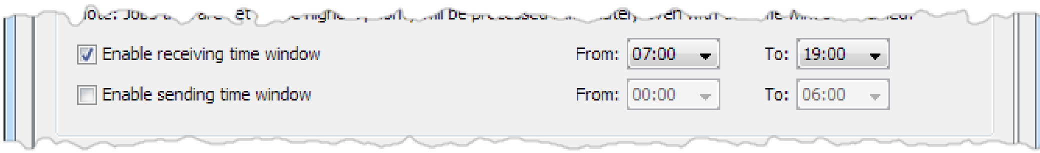


ASTRA Scheduler

By default all ASTRA sending and receiving jobs are processed immediately.

When the sending and receiving time windows are enabled, jobs are processed only when they fall within their corresponding time window and will be processed in the order of their priority.

For example, if you want to receive studies from 7:00AM to 7:00PM, use the following settings.

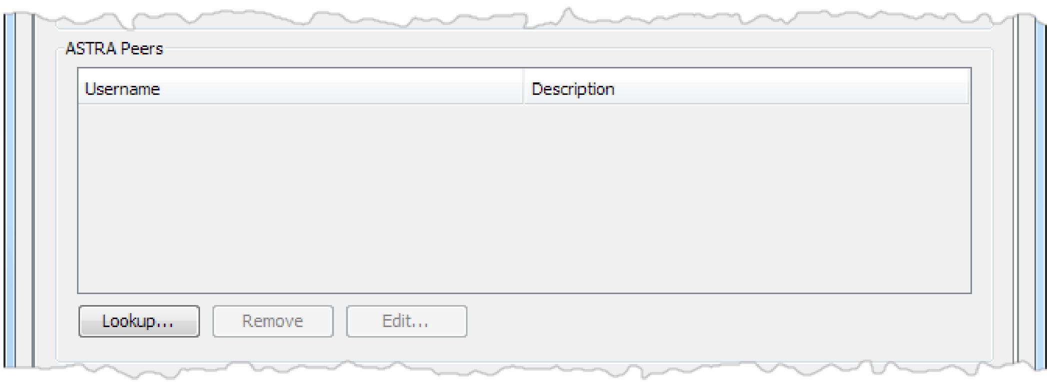


Note: Jobs that are set to the highest priority will be processed immediately even with the time window enabled.

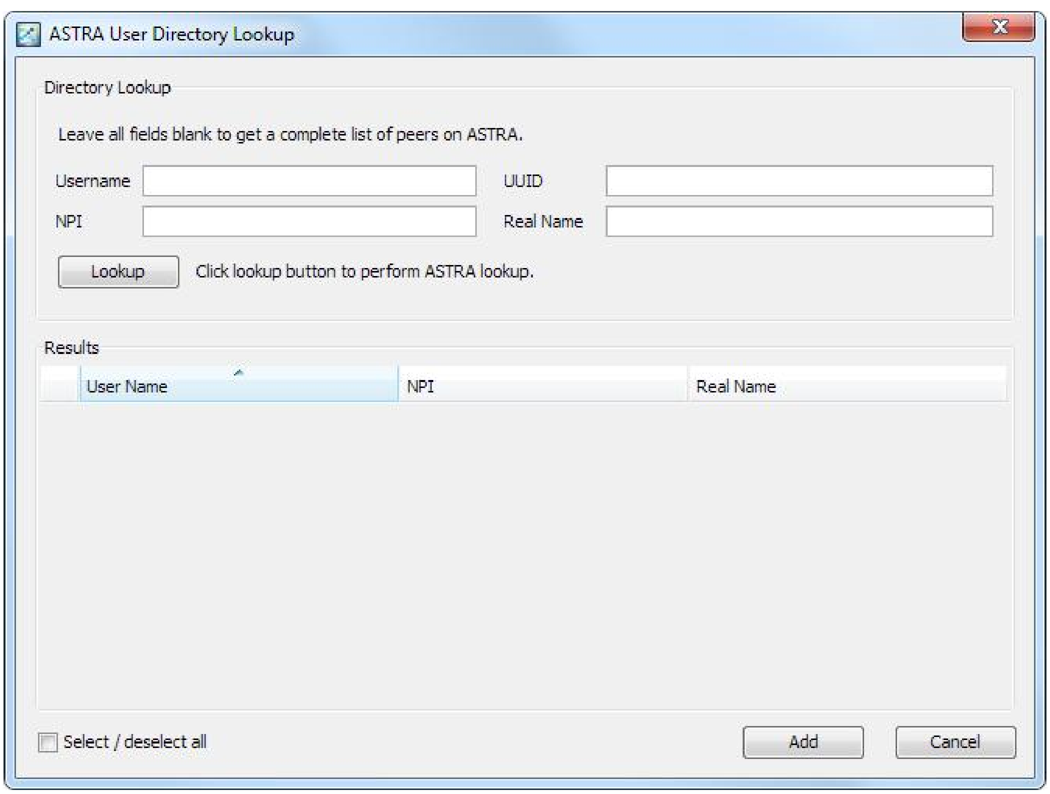
ASTRA Peers

If an ASTRA peer is added, all receiving jobs from this peer will be authorized automatically.

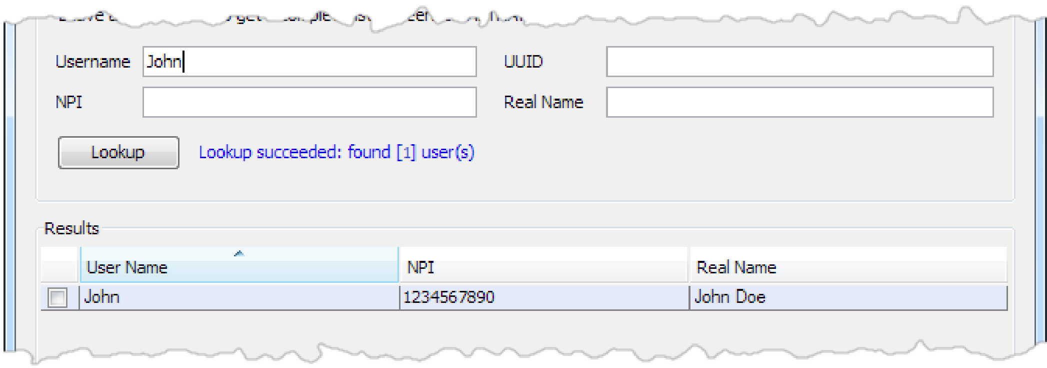
To *add a new ASTRA peer*, click [Lookup] button.



An [ASTRA User Directory Lookup] dialog will appear on the screen.

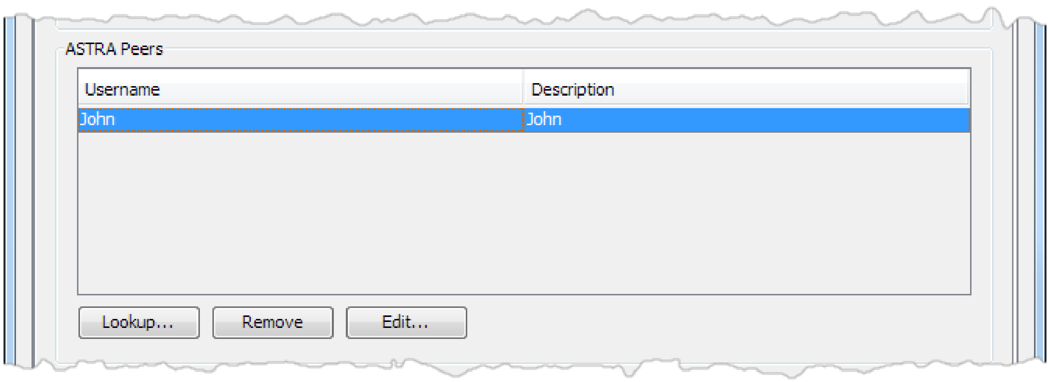


Enter any combination of the peer's username, user id, NPI number, and real name, then press the [Lookup] button to perform the directory lookup.

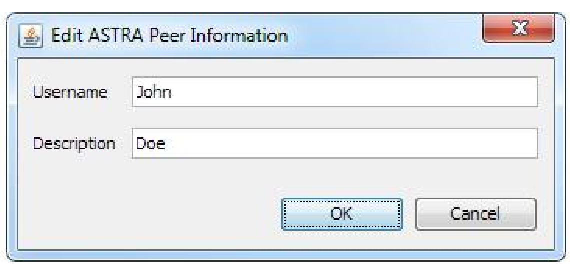


After results have been returned from ASTRA, select the peers you want to add, then click [Add] to add them to your ASTRA Peers list.

To *edit an ASTRA peer*, first select a peer in [ASTRA Peers] list, then click [Edit] button.

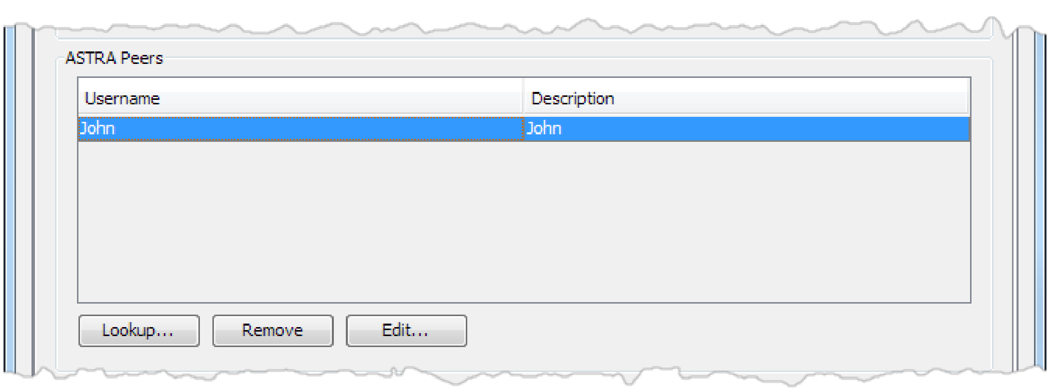


An [Edit ASTRA Peer Information] dialog will appear on the screen.



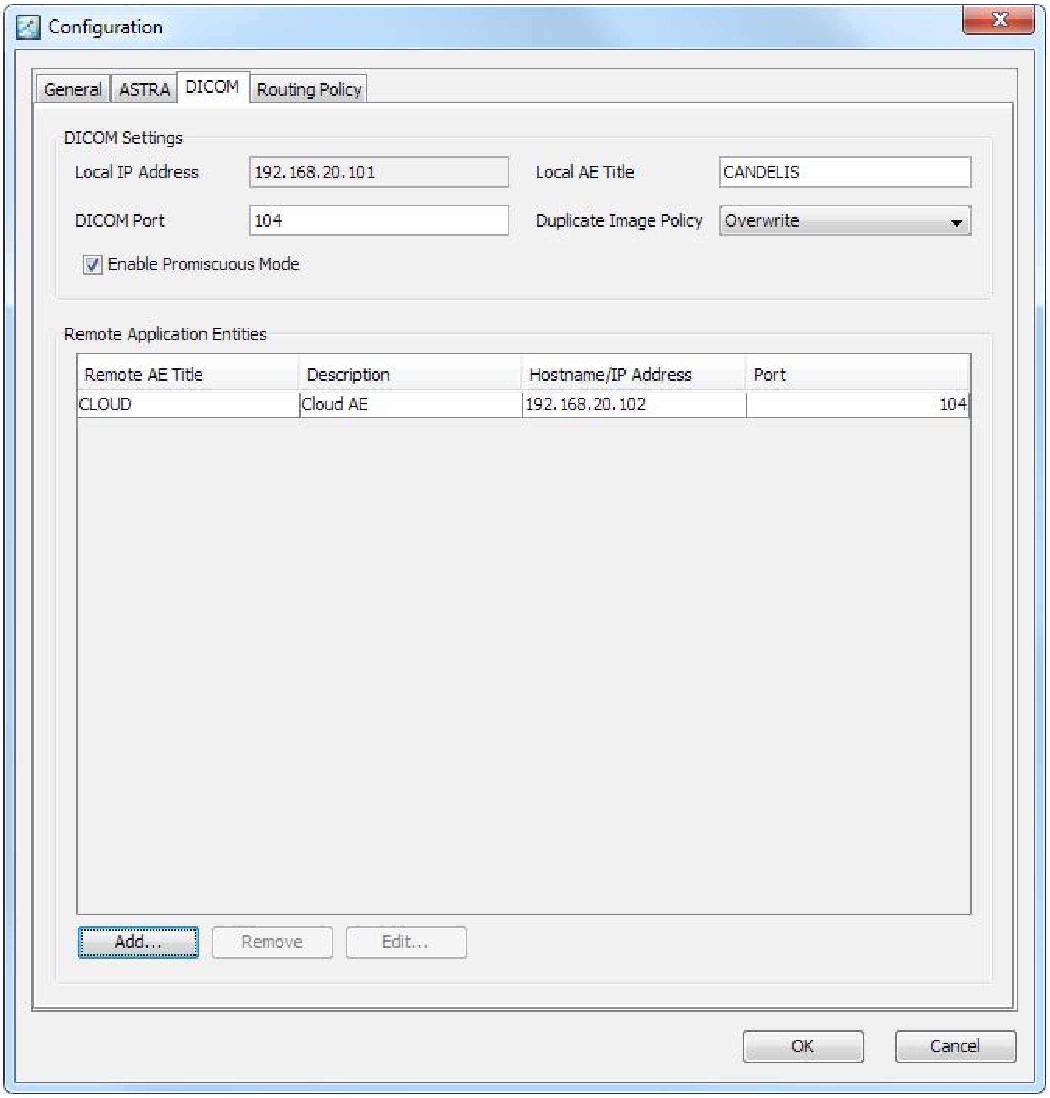
Change [Username] and [Description], then click [OK] button.

To *delete an ASTRA peer*, first select a peer in [ASTRA Peers] list, then click [Remove] button.



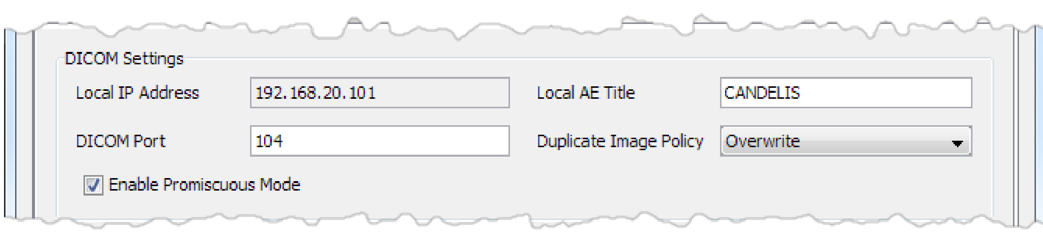
DICOM Settings

The [DICOM] tab helps you to set up DICOM service settings.



Configuration

Change your DICOM Port, Local AE Title and Duplicate Policy here. Duplicate Policy will be applied when a duplicate study is received.

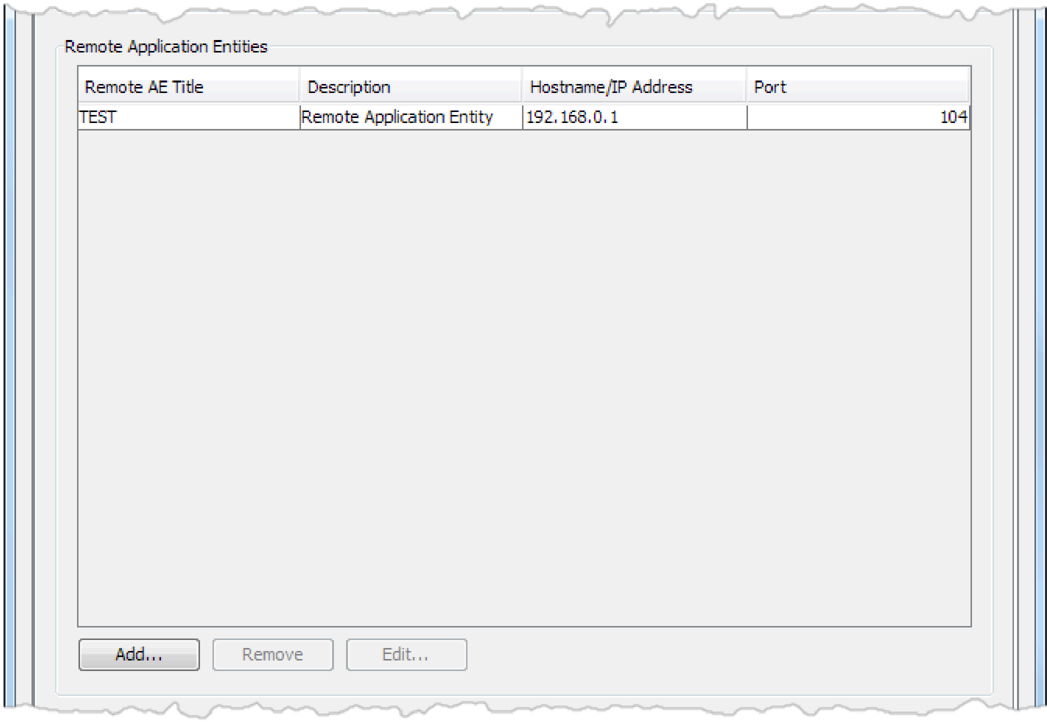


Remote Application Entities

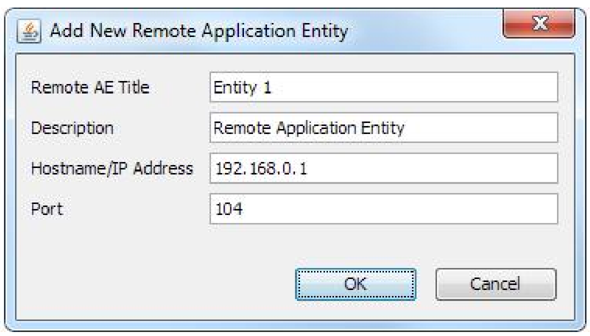
A remote application entity is a product located on a remote host to which you can send and from which you can receive studies.

Note: Application Entities configured here will not be used for communicating with ASTRA.

To *add a new remote application entity*, click [Add] button.

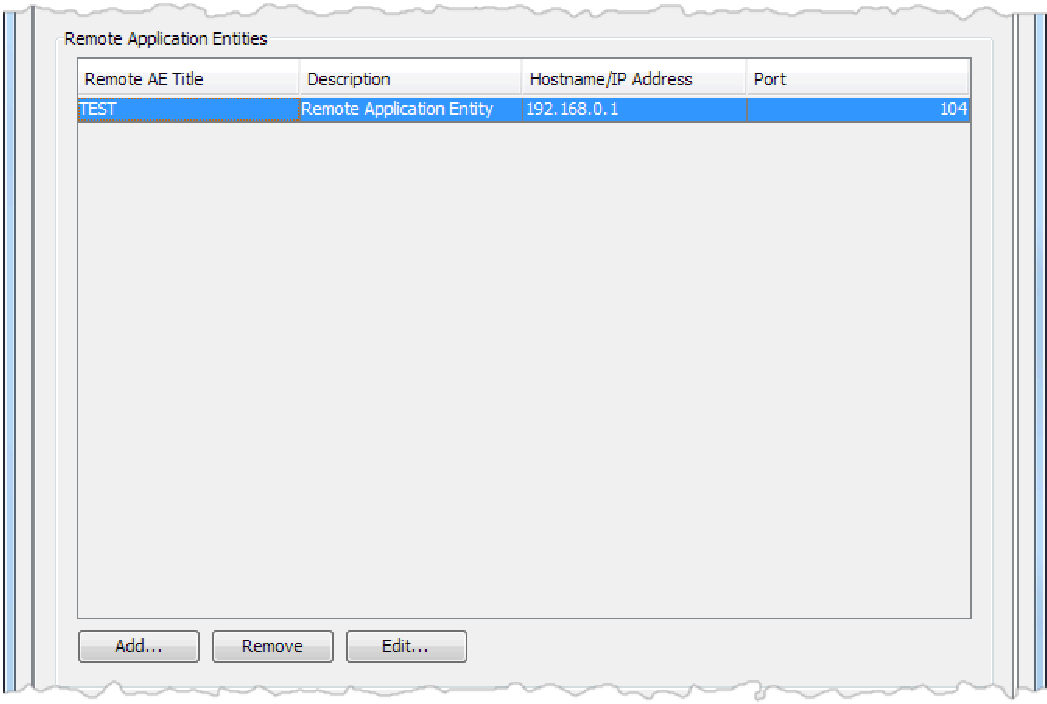


An [Add New Remote Application Entity] dialog will appear on the screen.

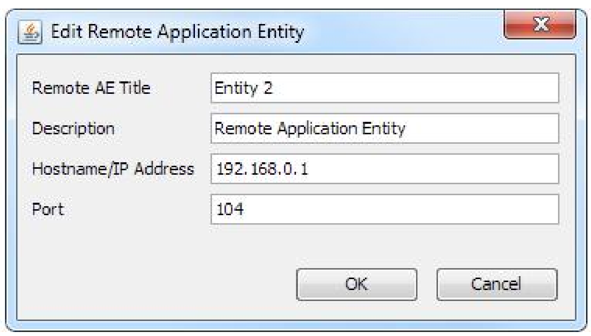


Enter [Remote AE Title], [Description], [Hostname/IP Address] and Port, then click [OK] button.

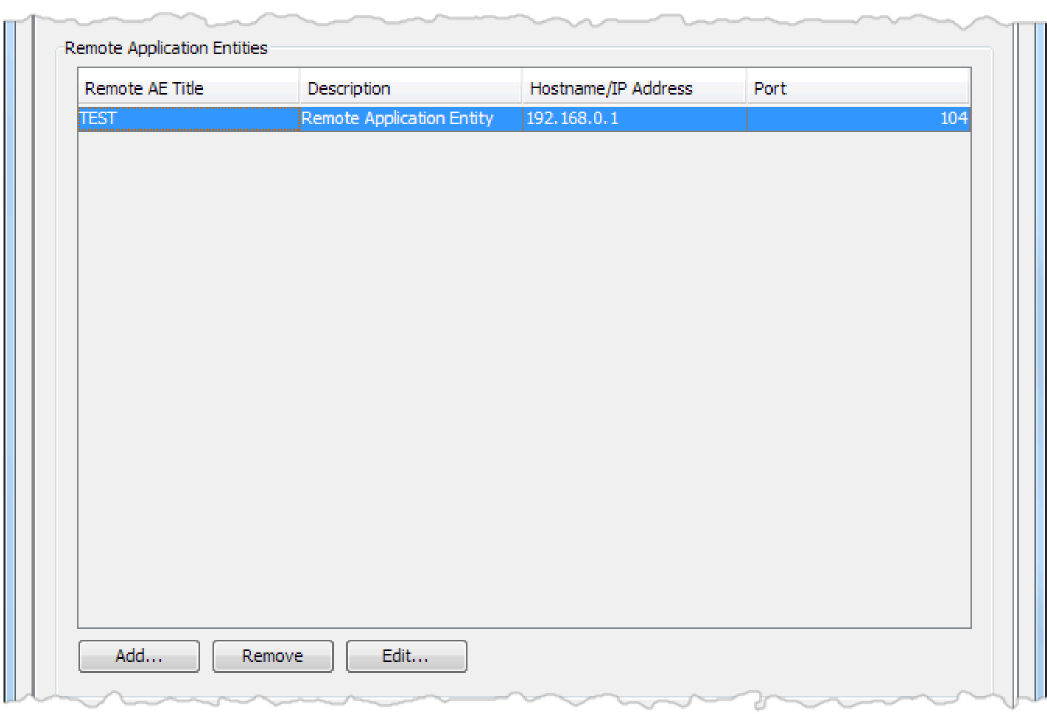
To *edit a remote application entity*, first select a remote application entity in [Remote Application Entities] list, then click [Edit] button.



An [Edit Remote Application Entity] dialog will appear on the screen.



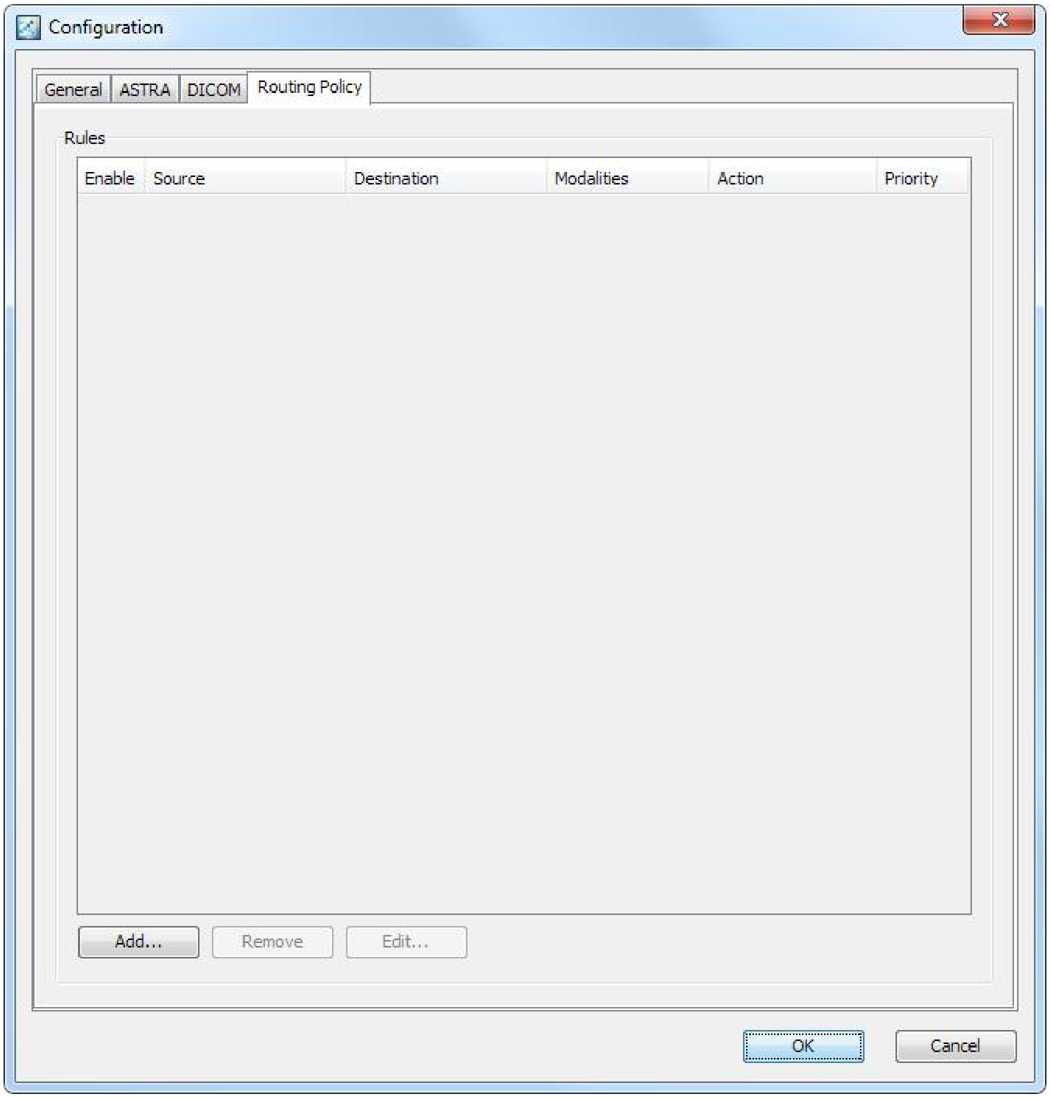
Change [Remote AE Title], [Description], [Hostname/IP Address] and Port, then click [OK] button.



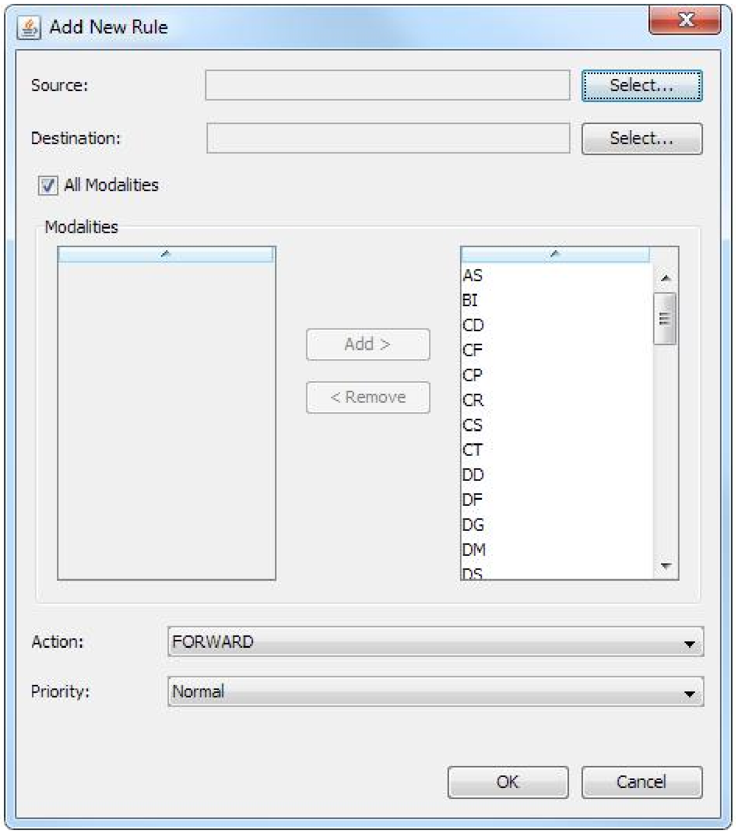
To *delete a remote application entity*, first select a remote application entity in [Remote Application Entities] list, then click [Remove] button.

Routing Policy

The [Routing Policy] tab helps you to define the routing rules.

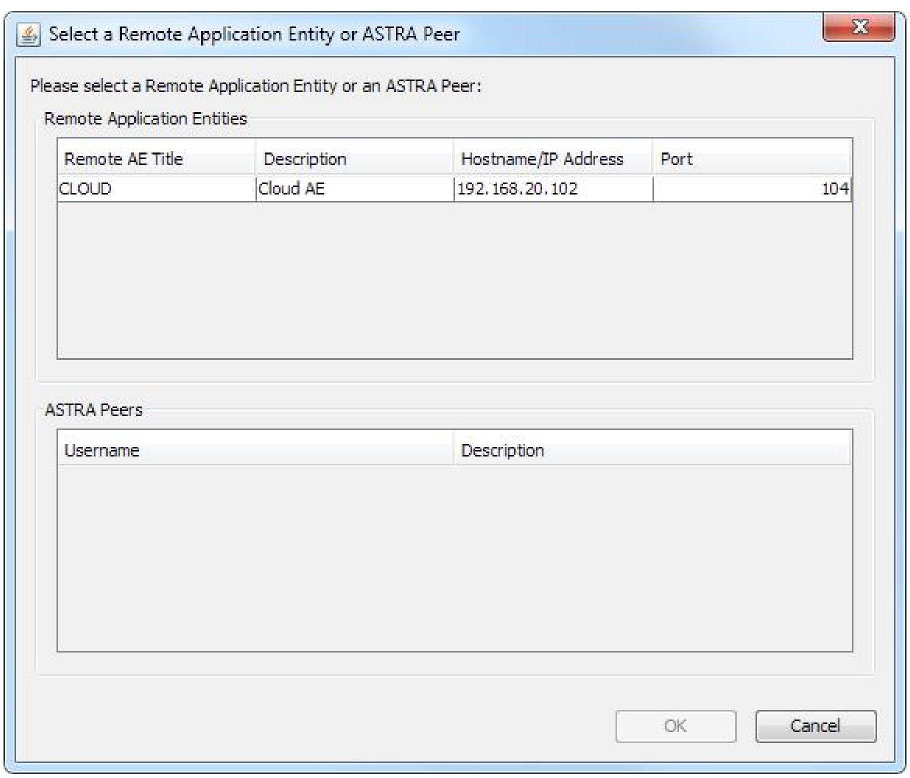


To *add a new rule*, click the [Add] button. An [Add New Rule] dialog will appear on the screen.

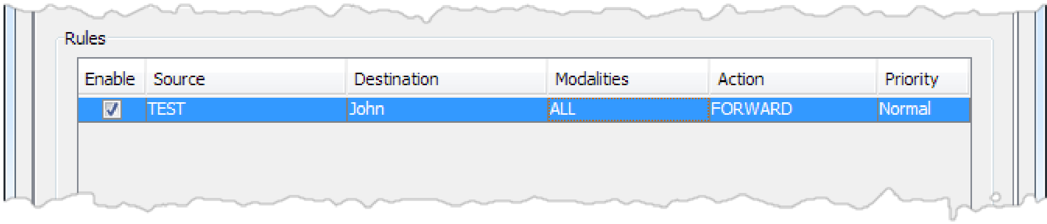


- [Source] is where the study comes from.
- [Local AE Title] is the name of the DICOM AE Title that the ASTRA Plus application uses to receive from and send to other DICOM nodes. This may be configured under Tools->Configuration->DICOM.
- [Destination] is where the study will be routed to.
- [Action] is used to enable or disable this rule. Select [Forward] to enable the rule and select [Disabled] to disable the rule.
- [Priority](1-10) defines the order in which rules are evaluated. A rule with a higher priority is evaluated before a rule with a lower priority.

To add [Source] or [Destination], click on the [Select] button next to the field and the following window will pop-up, allowing you to choose either a Remote Application Entity or an ASTRA Peer.

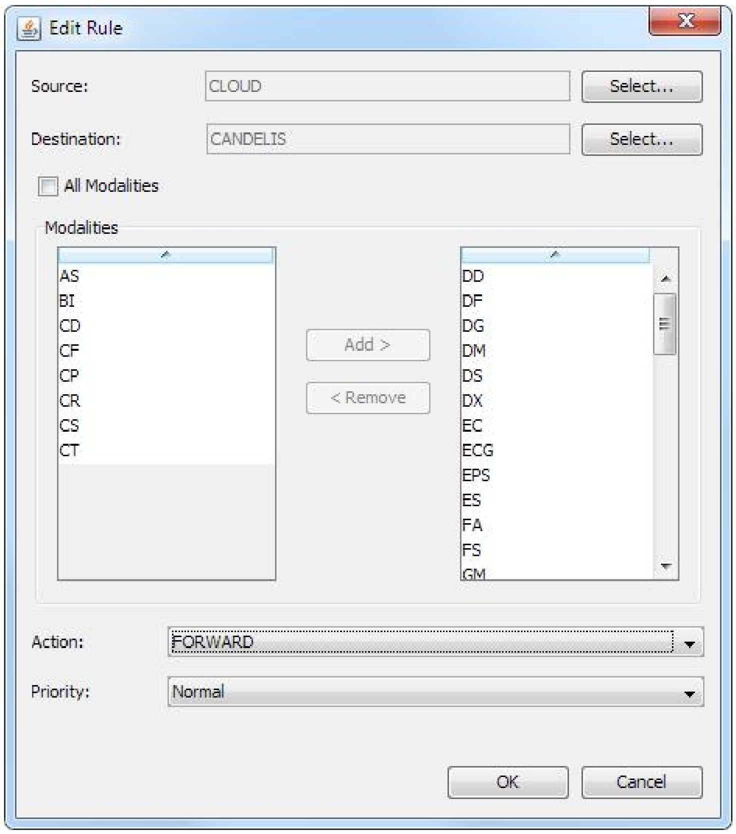


Here is an example. Studies received from [TEST] will be forwarded to [John] ASTRA Peer.



To *edit a rule*, first select the rule from [Rules] list, then click the [Edit] button.

An [Edit Rule] dialog will appear on the screen.



Change [Source], [Local AE Title], [Destination], [Action] and [Priority], then click [OK] button.

To *delete a rule*, first select a rule from [Rules] list, then click the [Remove] button.

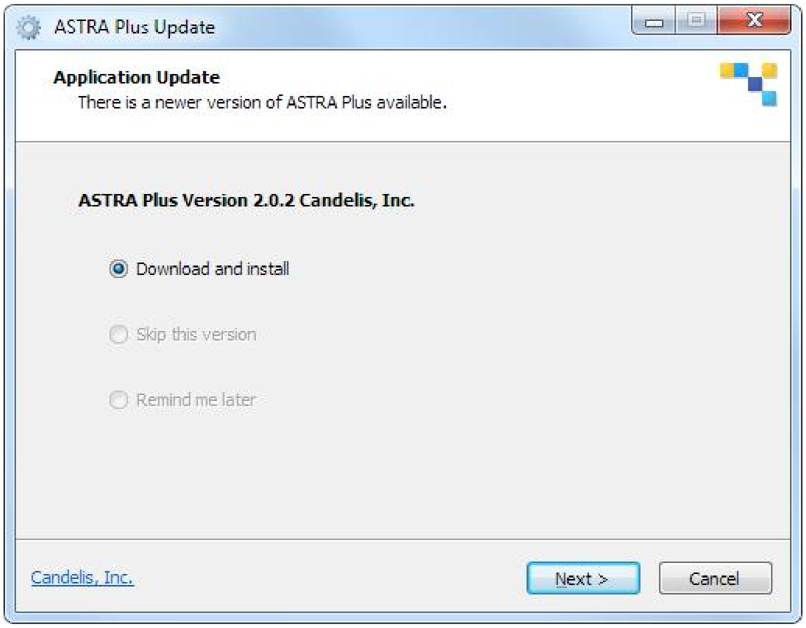
ASTRA Plus Updates

ASTRA Plus provides various ways to keep your software up-to-date.

Manual Updates

To check for new updates online, select [Help] from the ASTRA Plus main menu, then click [Check for Updates].

If there is an update, ASTRA Plus will bring up the following dialog.



This dialog will guide you through the update process.

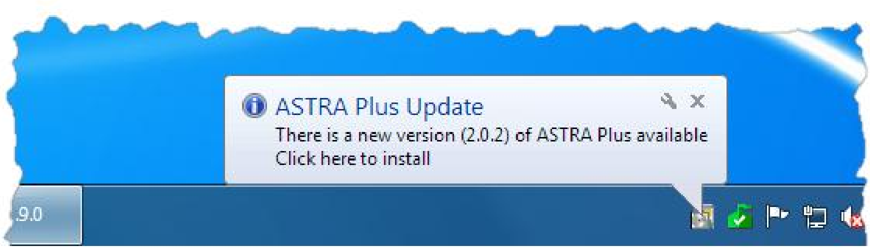
You can also use Check for Updates shortcut from the program start menu.

Automatic Updates

To enable automatic updates, first select [Tools] from the top drop-down menu, then click [Configuration].

Click [General] tab and make sure the [Enable automatic updates] checkbox is selected.

You will be notified of the new available update automatically.

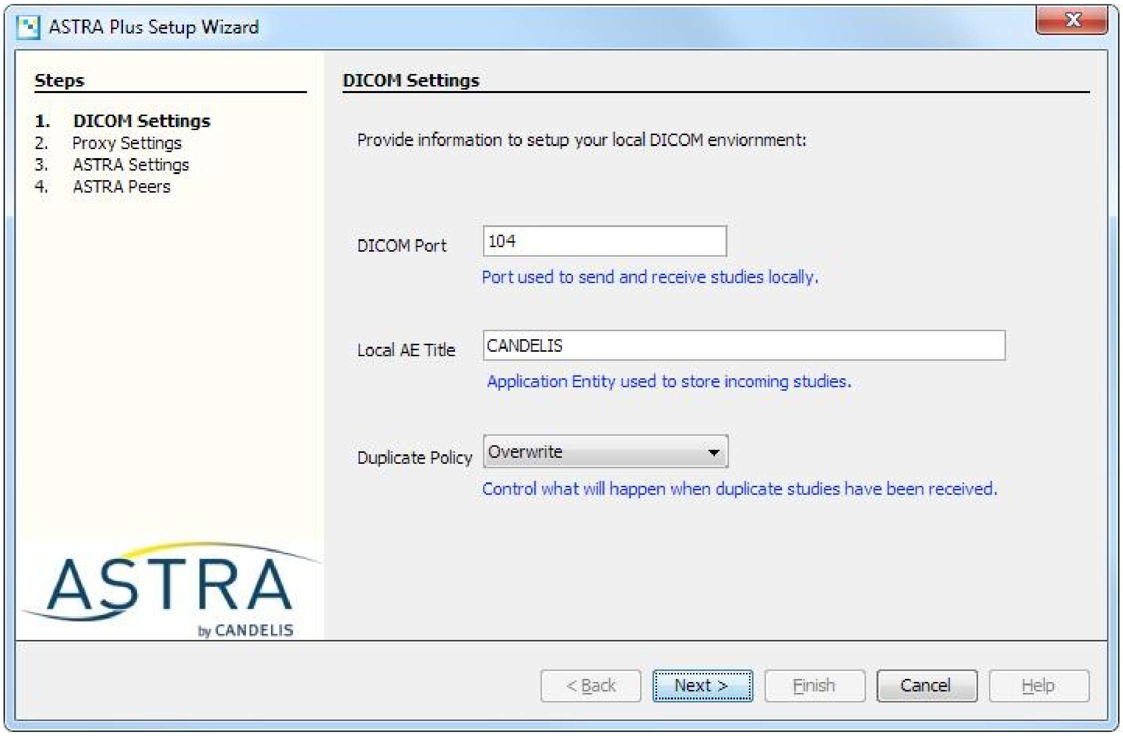


Astra Plus Setup Wizard

A wizard is provided to help you configure the most basic settings for DICOM and ASTRA.

Note: A valid ASTRA username and password are required for ASTRA based services. Please contact Candelis Support if you don't have one.

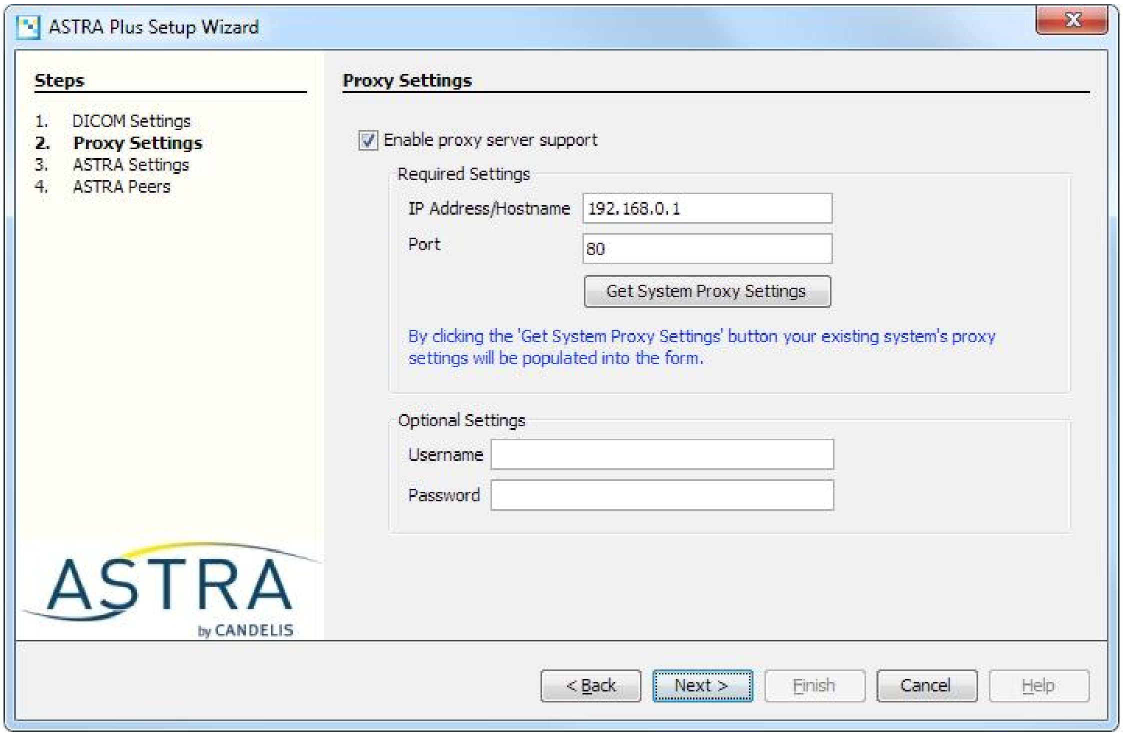
DICOM Settings



Enter your DICOM Port, Local AE Title and Duplicate Policy here. Duplicate Policy will be applied when a duplicate study is received.

To continue, click [Next].

Proxy Settings

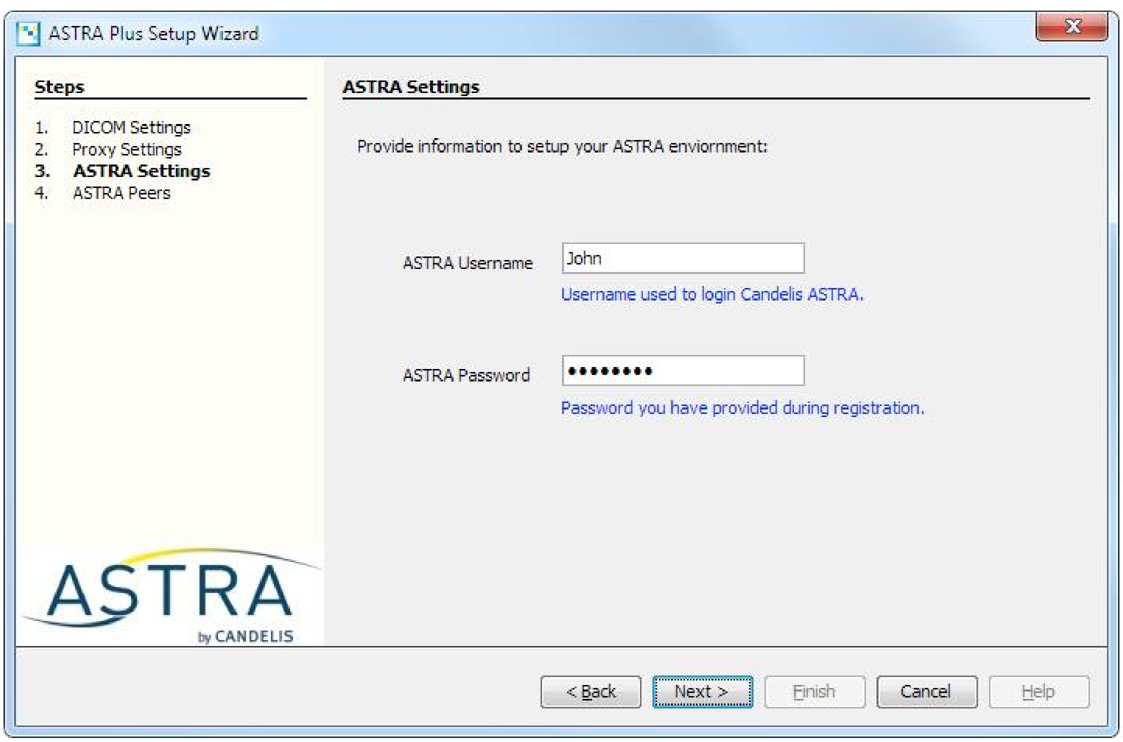


If your system has proxy settings, the IP Address/Hostname and Port will be automatically populated. If your system proxy settings have been changed after [ASTRA Plus Setup Wizard] starts, your new proxy settings can be populated into the form by clicking [Get System Proxy Settings].

Check [Enable proxy server support] to enable proxy server support.

To continue, Click [Next].

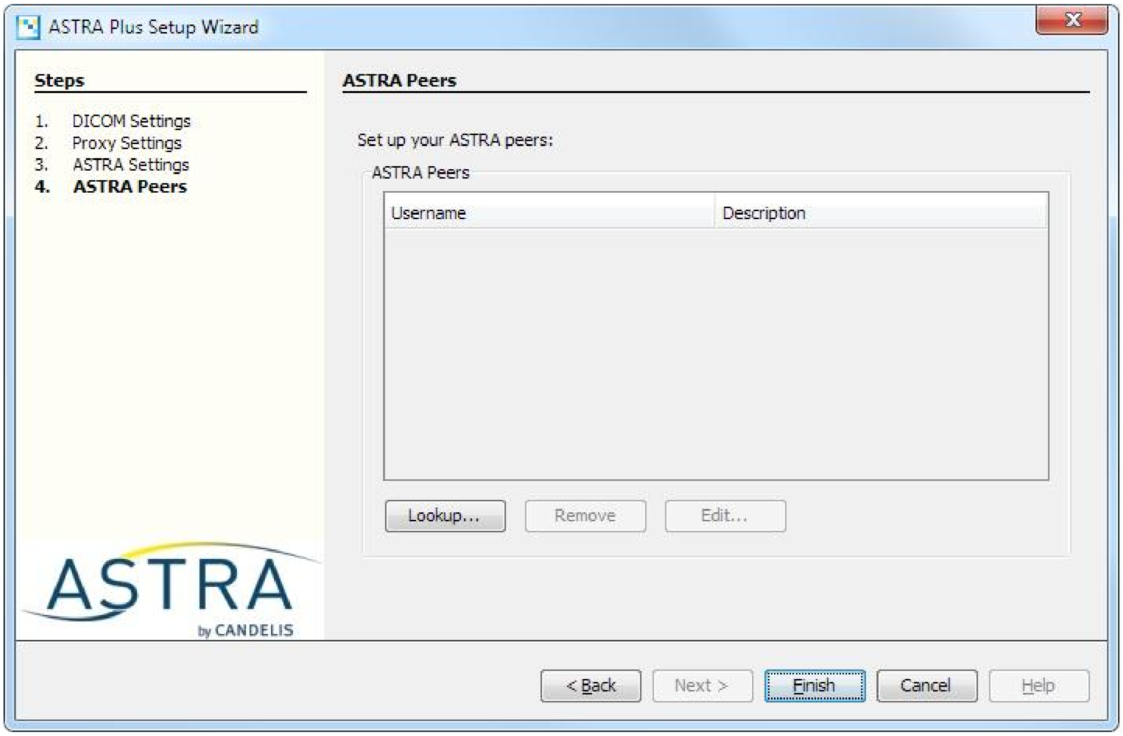
ASTRA Settings



Enter your ASTRA Username and Password here.

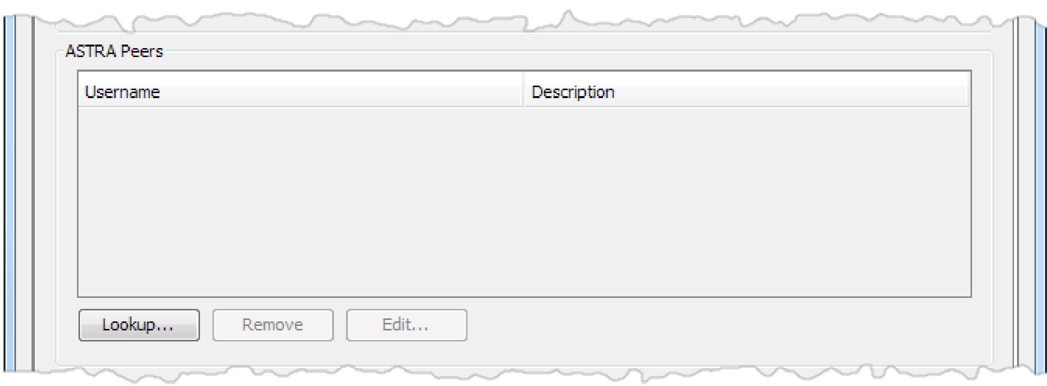
To continue, Click [Next].

ASTRA Peers

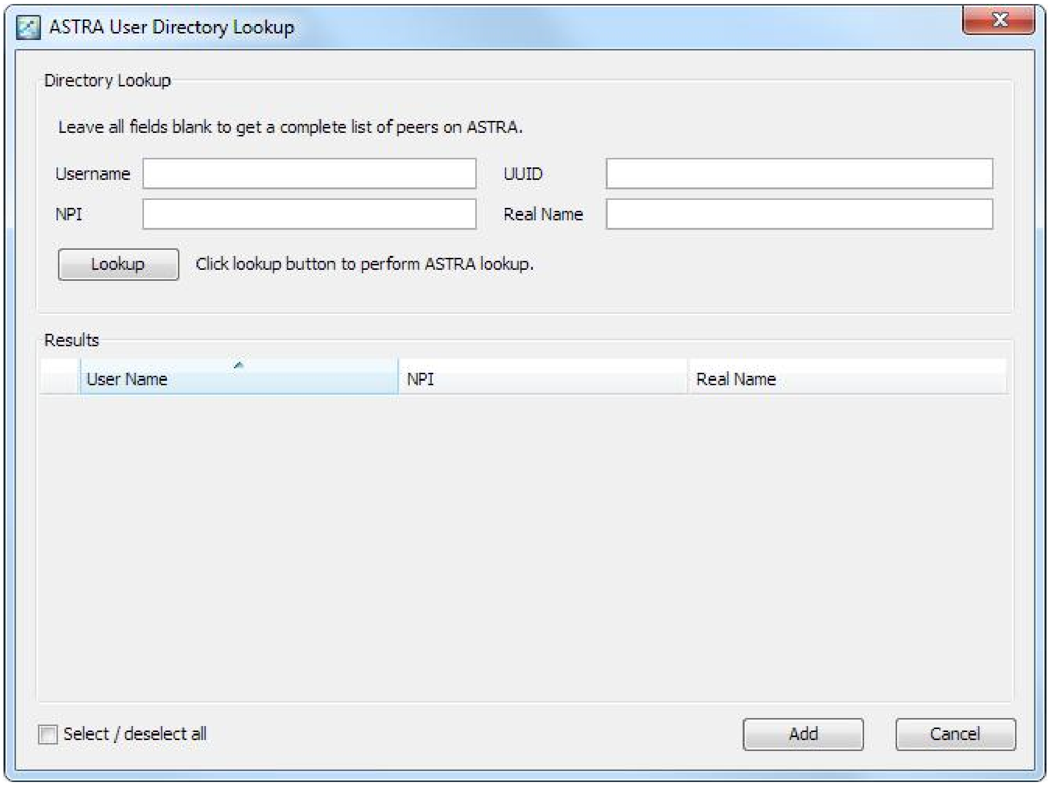


Add a new ASTRA Peer

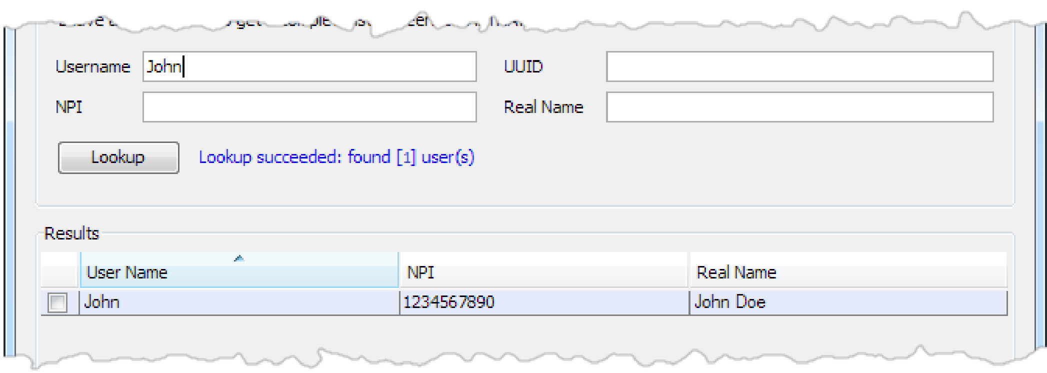
To add a new ASTRA peer, click [Lookup] button.



An [ASTRA User Directory Lookup] dialog will appear on the screen.



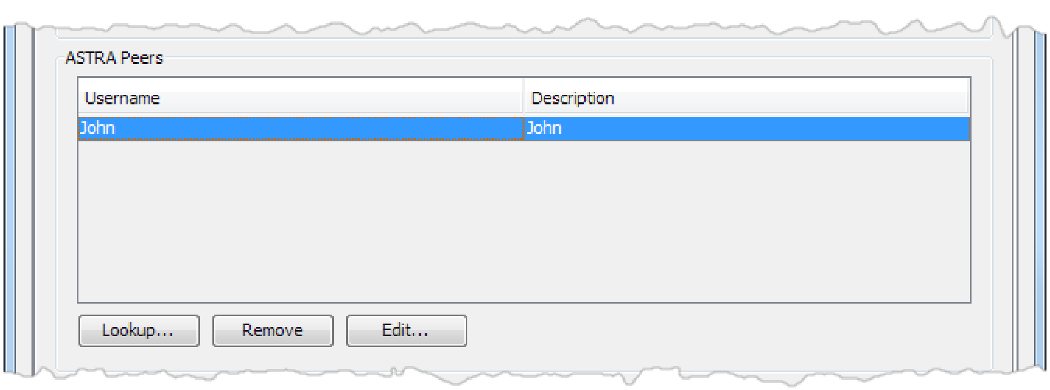
Enter any combination of the peer's username, user id, NPI number, and real name, then press the [Lookup] button to perform the directory lookup.



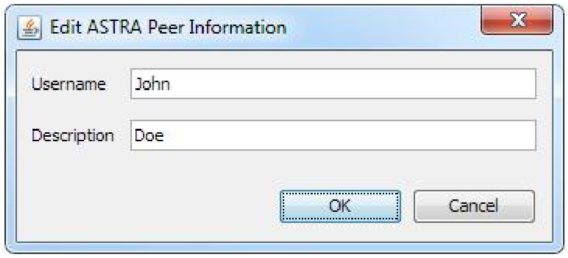
After results have been returned from ASTRA, select the peers you want to add, then click [Add] to add them to your ASTRA Peers list.

Edit an ASTRA Peer

To edit an ASTRA peer, first select a peer in [ASTRA Peers] list, then click [Edit] button.



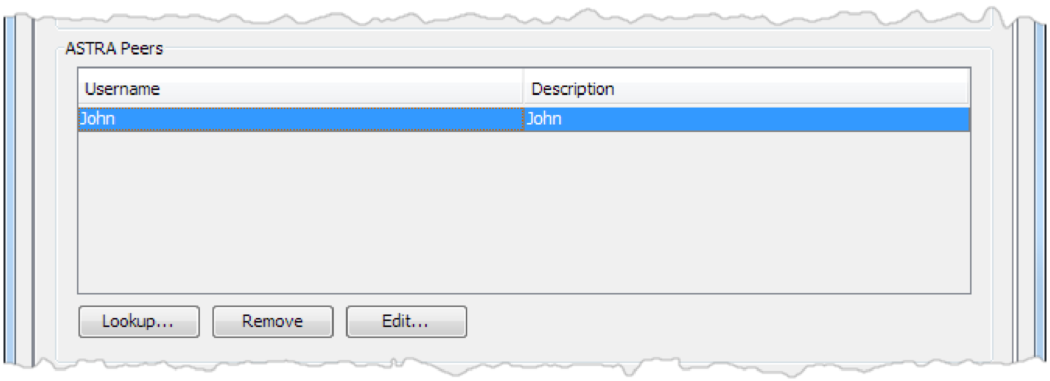
An [Edit ASTRA Peer Information] dialog will appear on the screen.



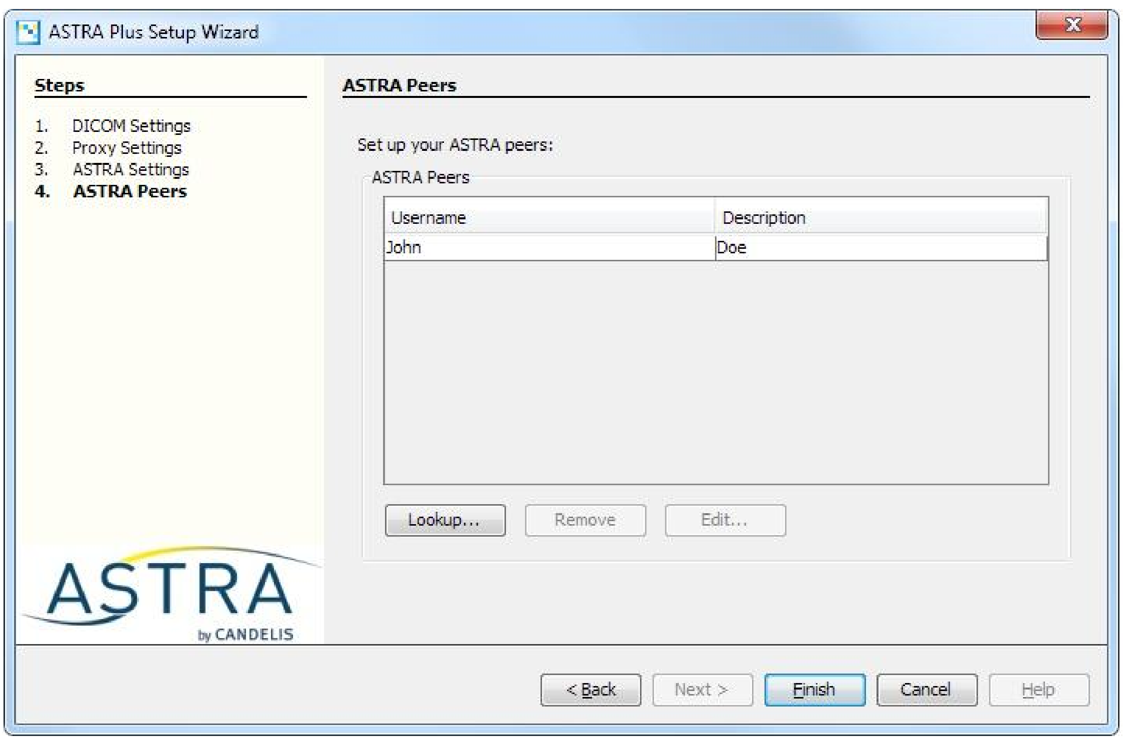
Change [Username] and [Description], then click [OK] button.

Delete an ASTRA Peer

To delete an ASTRA peer, first select a peer in [ASTRA Peers] list, then click [Remove] button.

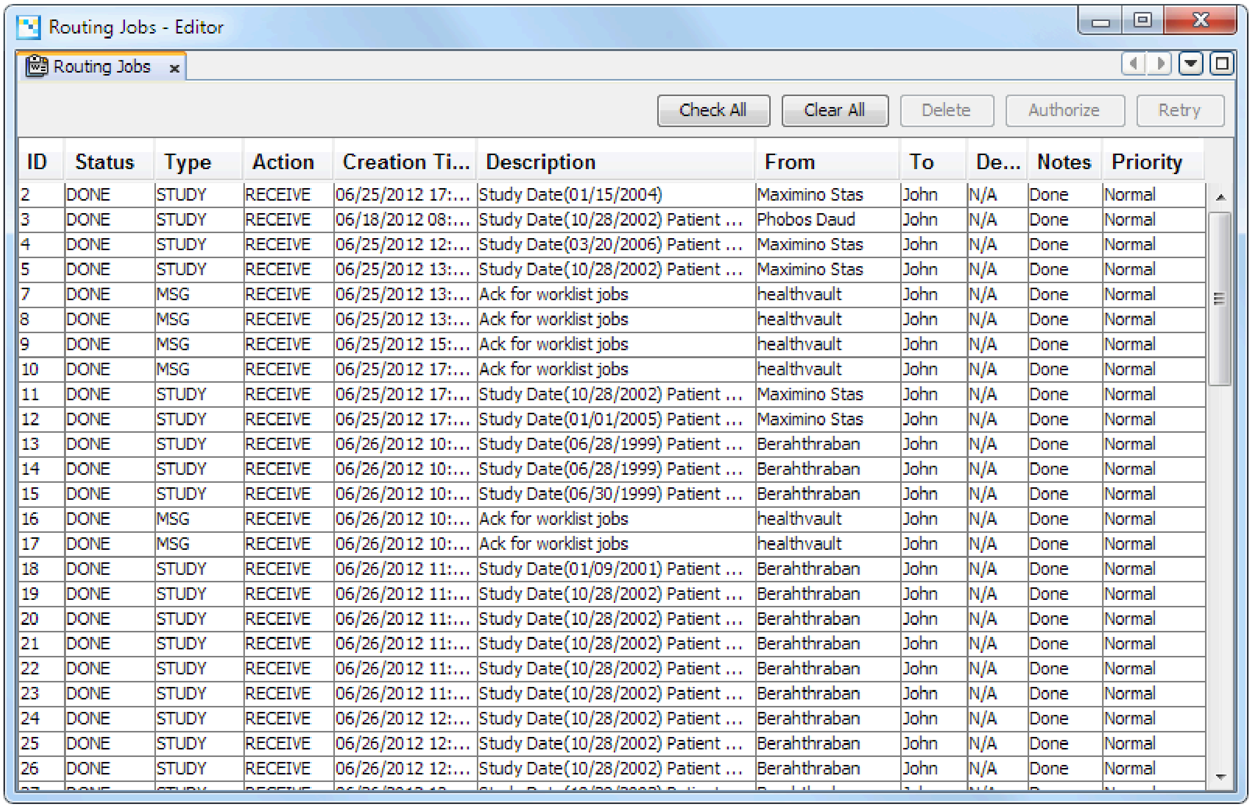


To complete the setup of ASTRA Plus click [Finish].



ASTRA Plus Routing Jobs

Routing Jobs provides the ability to view, delete and retry the routing jobs.



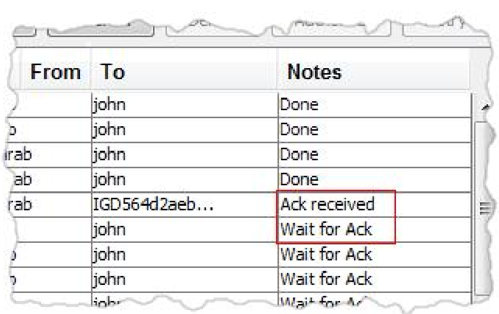
ID	Status	Type	Action	Creation Ti...	Description	From	To	De...	Notes	Priority
2	DONE	STUDY	RECEIVE	06/25/2012 17:...	Study Date(01/15/2004)	Maximino Stas	John	N/A	Done	Normal
3	DONE	STUDY	RECEIVE	06/18/2012 08:...	Study Date(10/28/2002) Patient ...	Phobos Daud	John	N/A	Done	Normal
4	DONE	STUDY	RECEIVE	06/25/2012 12:...	Study Date(03/20/2006) Patient ...	Maximino Stas	John	N/A	Done	Normal
5	DONE	STUDY	RECEIVE	06/25/2012 13:...	Study Date(10/28/2002) Patient ...	Maximino Stas	John	N/A	Done	Normal
7	DONE	MSG	RECEIVE	06/25/2012 13:...	Ack for worklist jobs	healthvault	John	N/A	Done	Normal
8	DONE	MSG	RECEIVE	06/25/2012 13:...	Ack for worklist jobs	healthvault	John	N/A	Done	Normal
9	DONE	MSG	RECEIVE	06/25/2012 15:...	Ack for worklist jobs	healthvault	John	N/A	Done	Normal
10	DONE	MSG	RECEIVE	06/25/2012 17:...	Ack for worklist jobs	healthvault	John	N/A	Done	Normal
11	DONE	STUDY	RECEIVE	06/25/2012 17:...	Study Date(10/28/2002) Patient ...	Maximino Stas	John	N/A	Done	Normal
12	DONE	STUDY	RECEIVE	06/25/2012 17:...	Study Date(01/01/2005) Patient ...	Maximino Stas	John	N/A	Done	Normal
13	DONE	STUDY	RECEIVE	06/26/2012 10:...	Study Date(06/28/1999) Patient ...	Berahthraban	John	N/A	Done	Normal
14	DONE	STUDY	RECEIVE	06/26/2012 10:...	Study Date(06/28/1999) Patient ...	Berahthraban	John	N/A	Done	Normal
15	DONE	STUDY	RECEIVE	06/26/2012 10:...	Study Date(06/30/1999) Patient ...	Berahthraban	John	N/A	Done	Normal
16	DONE	MSG	RECEIVE	06/26/2012 10:...	Ack for worklist jobs	healthvault	John	N/A	Done	Normal
17	DONE	MSG	RECEIVE	06/26/2012 10:...	Ack for worklist jobs	healthvault	John	N/A	Done	Normal
18	DONE	STUDY	RECEIVE	06/26/2012 11:...	Study Date(01/09/2001) Patient ...	Berahthraban	John	N/A	Done	Normal
19	DONE	STUDY	RECEIVE	06/26/2012 11:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal
20	DONE	STUDY	RECEIVE	06/26/2012 11:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal
21	DONE	STUDY	RECEIVE	06/26/2012 11:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal
22	DONE	STUDY	RECEIVE	06/26/2012 11:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal
23	DONE	STUDY	RECEIVE	06/26/2012 11:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal
24	DONE	STUDY	RECEIVE	06/26/2012 12:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal
25	DONE	STUDY	RECEIVE	06/26/2012 12:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal
26	DONE	STUDY	RECEIVE	06/26/2012 12:...	Study Date(10/28/2002) Patient ...	Berahthraban	John	N/A	Done	Normal

There are five control buttons on the top right corner:

- [Check All] - Select all routing jobs on the list;
- [Clear All] - Deselect all routing jobs on the list;
- [Delete] - Delete selected routing jobs;
- [Authorize] - Authorize senders;
- [Retry] - Reset FAILED jobs to the NEW state;

Acknowledgement Messages

For SEND jobs, automatic acknowledge confirmation will be sent once the remote peer retrieves the study.



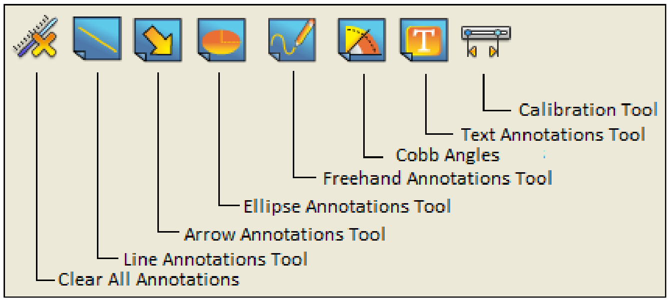
From	To	Notes
	john	Done
	john	Done
rab	john	Done
ab	john	Done
rab	IGD564d2aeb...	Ack received
	john	Wait for Ack
	john	Wait for Ack
	john	Wait for Ack

The acknowledgement message will update the corresponding SEND job from "Wait for Ack" to "Ack Received".

Annotations / GSPS

Annotation Tools

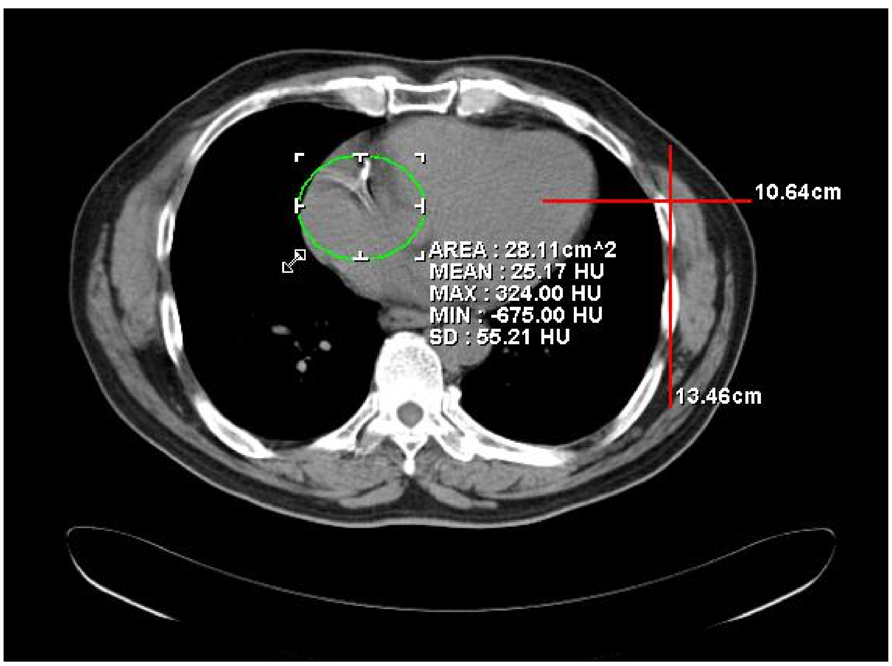
Annotation tools are accessed via the imaging toolbar:



- Clear All Annotations - Removes all unsaved annotations in the active display.
- Line Annotations Tool - Allows drawing of lines by dragging with the right mouse button.
- Arrow Annotations Tool - Allows drawing of arrows by dragging with the right mouse button.
- Ellipse Annotations Tool - Allows drawing of ellipse by dragging with the right mouse button.
- Freehand Annotations Tool - Allows drawing of freehand shapes by dragging with the right mouse button.
- Cobb Angles - Renders intersecting lines with the angles between them when turned on.
- Text Annotations Tool - Adds a text annotation when clicked with the right mouse button at the desired location on the image.
- Calibration Tool - Calibrates the underlying image by selecting a line and specifying the length in centimeters.

Drawing shapes

With the line, arrow, ellipse or freehand annotations tool selected, depress the corresponding mouse button and drag. A shape will be added to the active image. Release the mouse button to finish drawing.



To move a shape, depress and drag the opposite mouse button of the drawing button on that shape. To resize a shape, depress and drag the opposite mouse button of the drawing button at one of its endpoints.

The selected shape is highlighted in green by default. This color can be customized from the options panel. To delete the selected shape, press the Delete key on the keyboard.

Cobb Angles

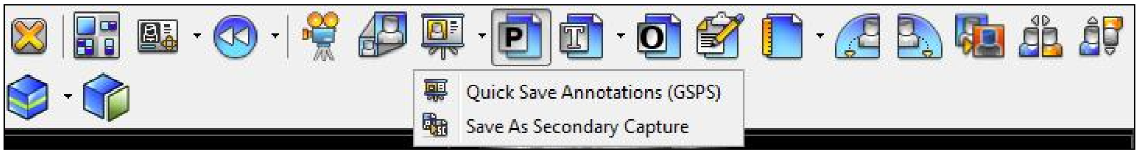
The state of the Cobb Angles button is maintained between user sessions, i.e., if a user logs out, the state of this button (ON or OFF) is saved and it is restored when the same user logs in again.

Saving Annotations

Saving Annotations as GSPS

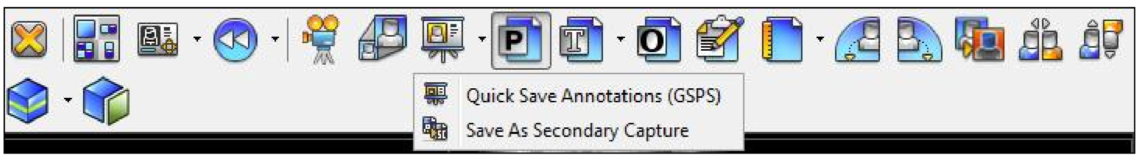
Annotations may be saved as a Grayscale Softcopy Presentation State (GSPS). These files contain information about shapes and text added to the image, and are send to the ImageGrid and stored for later viewing.

To quickly save annotations, use the keyboard shortcut (by default CTRL+Q), or select "Quick Save Annotations (GSPS)" from the drop down menu next to the Save Annotations (GSPS) icon on the imaging toolbar:



Saving Secondary Capture Images

To save a secondary capture image of the selected display, select "Save As Secondary Capture" from the drop down menu next to the Save Annotations icon on the imaging toolbar:

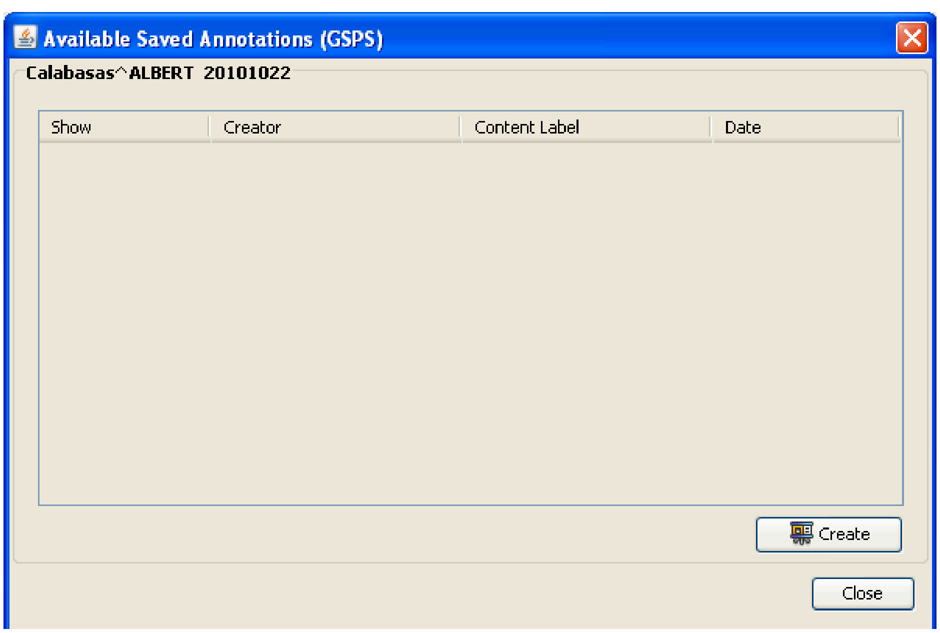


The secondary capture image will be added to the study as a new series and saved to the ImageGrid.

Viewing Saved Annotations (GSPS)

To view the saved annotations (GSPS) contained in the active study, click on the Save Annotations (GSPS) icon on the imaging toolbar:

The Available Saved Annotations (GSPS) dialog will be shown:



This dialog allows the user to create new annotation using the button shown.

In addition, each Presentation State may be shown or hidden by clicking the appropriate check box in the left-most column of the table.

Basic Image Processing Tools

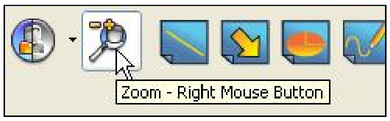
Pan

To pan an image, click the Pan button on the imaging toolbar:

Dragging with the corresponding mouse button depressed will now move the selected image around.

Zoom

To zoom an image, click the Zoom button on the imaging toolbar:



Dragging upwards on an image with the corresponding mouse button depressed will now zoom in, and similarly, dragging downwards will zoom out.

Flip & Rotate

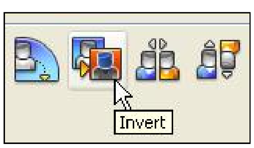
The flip and rotate buttons are located on the imaging toolbar:

From left to right, clicking each of these icons will achieve the following:

- Rotate the selected image left by 90° to the left.
- Rotate the selected image left by 90° to the right.
- Flip the selected image horizontally.
- Flip the selected image vertically.

Invert

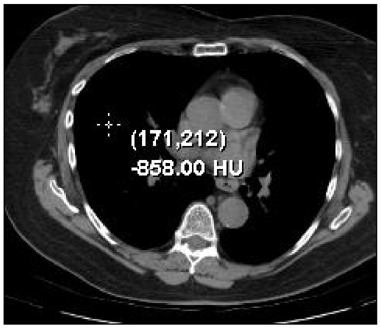
To invert the selected image, click the invert button on the imaging toolbar:



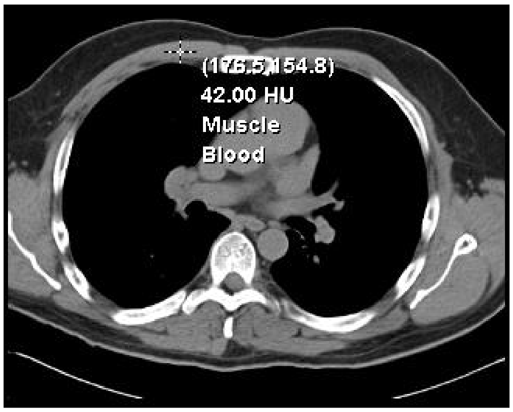
Probe Tool

To probe pixel intensities or, in the case of CT images, Hounsfield values of the active image, click the Probe button on the imaging toolbar:

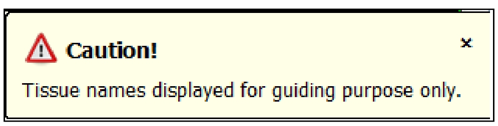
Now dragging the mouse on an image will display pixel intensities at the position of the mouse cursor.



In the case of CT images, tissue names that the Hounsfield values refer to will be displayed under the Hounsfield values:



A warning message shows up at the bottom right of the monitor as the follows when the probe button is clicked:

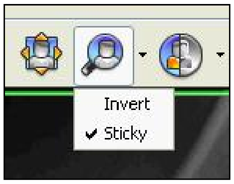


The calculation is based on the following typical values for different elements and tissues. Please note that the tissue names are displayed for guiding purpose only.

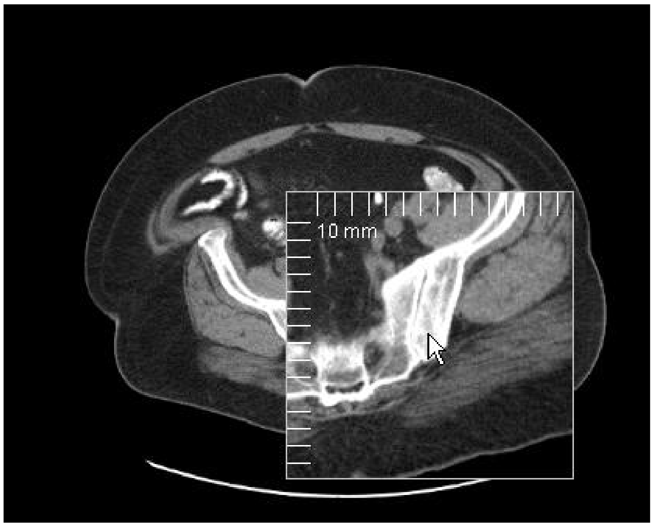
Substance	Hounsfield Values
Air	-1000
Lung	-700
Fat	-84
Water	0
Cerebrospinal Fluid	15
Blood	+30 to +45
Muscle	+40
Soft Tissue	+100 to +300
Cancellous Bone	+700
Dense Bone	+3000

Magnification Tool

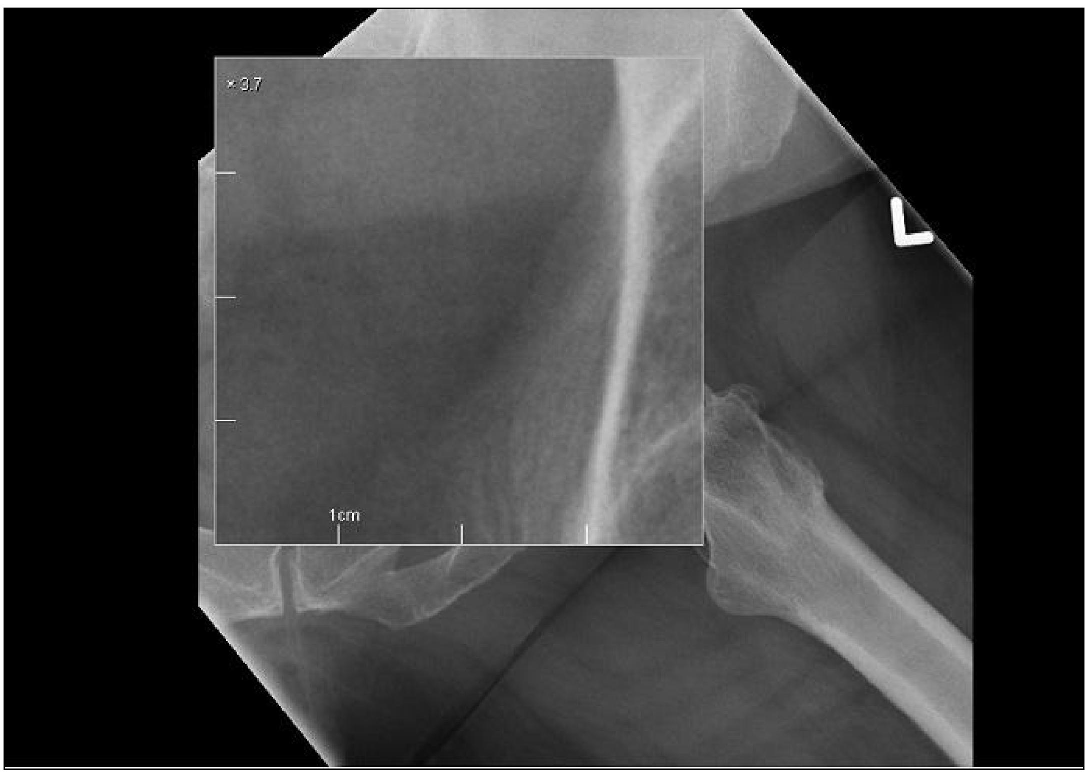
To magnify a portion of an image, select the magnification tool on the imaging toolbar. To invert or make the magnifier sticky, click on the arrow next to the magnifier icon and then choose an option:



Now dragging the mouse on an image will display a magnified version of the image centered on the mouse cursor:



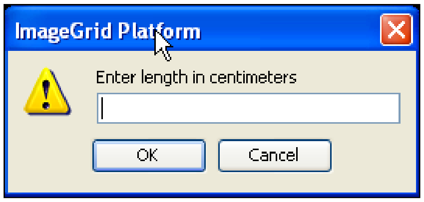
If the magnifier is set to "Sticky", dragging the mouse up inside the magnification square will increase the zoom factor. Dragging the mouse down will decrease the zoom factor.



Calibration Tool

To calibrate an image, select the calibration tool on the imaging toolbar. Then left click on the annotation line to be calibrated:

A dialog will pop up to allow you to input the length of the annotation line in Centimeters:



Reset Image Settings

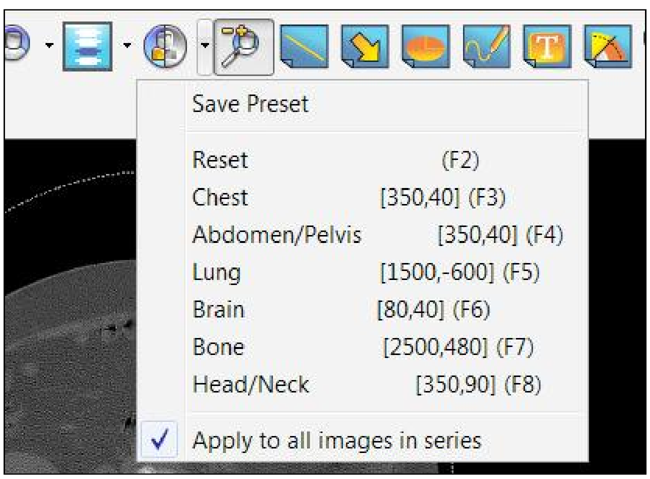
To reset all image settings to their original values, click the Reset button on the imaging toolbar:

Window/Level

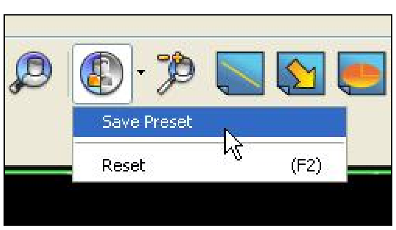
To change an image's window and level, click the Window/Level button on the imaging toolbar:

Dragging up and down on an image will change its brightness (level), and dragging left and right will change the contrast (window).

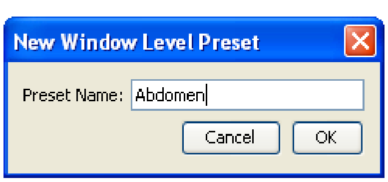
The drop-down menu next to the window/level toolbar button contains configurable window/level presets:



These can be changed in the Display -> Layout page of the application options dialog. Alternatively, save the current window level as a preset by selecting "Save Preset" from the window/level drop down menu:



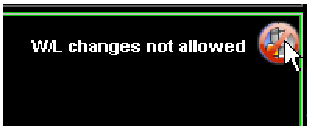
You will be prompted to specify a name for the preset:



Clicking OK will save the current window and level to the list of presets for the active modality. Your preset will be available on the drop-down menu as before.

Note: Some Image Formats (for instance, images that have Palette Color as Photometric Interpretation) do not allow changes in the Window/Level. If the user tries to modify the Window/Level of those images, two messages will pop up:

- An icon and tool-tip on top of the actual image.

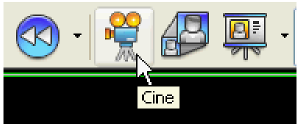


- A status line on the main window.

To disable the window/level synchronization of all the instances in the same series, uncheck the "Apply to all images in series" button in the window/level drop down menu. The window/level change will be only applied to the active instance in the series when the option is disabled.

Cine Tool

To use the cine tool, click the cine tool icon on the imaging toolbar:



A cine icon will be displayed in containers whose images support multiframe playback:

Activate the Cine Panel by moving the mouse to the bottom of the viewport:

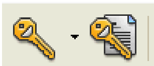
A multiframe image can be viewed forwards or backwards, and playback is started by clicking once on one of the two buttons shown. Clicking a second time pauses playback. Also, only for multi-frame instances, manually scrolling through all the frames can be done using the slider.

The text box next to the slider show the frame-rate suggested by the DICOM tags.

Before or during playback, the frame-rate can be changed using the "+" and "-" buttons. The actual frame rate during playback is displayed in the text box in between these two buttons.

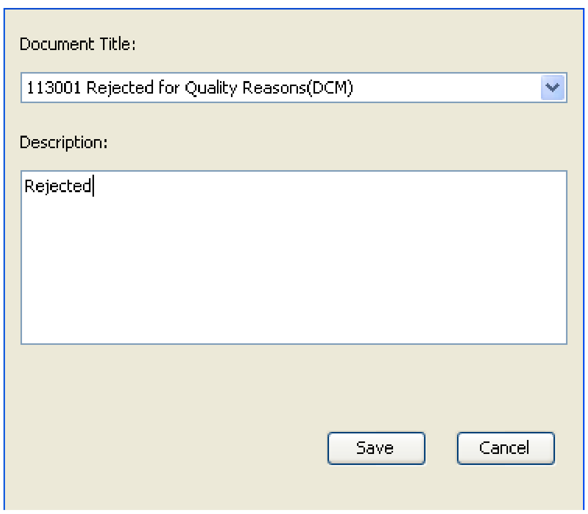
Mark Key Images

Users can mark any image as a key image for future reference. To mark an image as a key image, open the study and select the image to be marked. There are two buttons on the toolbar to mark an image as a key image: "Mark key image" and "Mark key image with note".



"Mark key image" will immediately mark the currently selected image. When the process is done, a key icon will appear at the top right corner of the viewport.

"Mark key image with note" allows the user to create a note along with the key image. The user can choose a title from the drop-down and type a description.



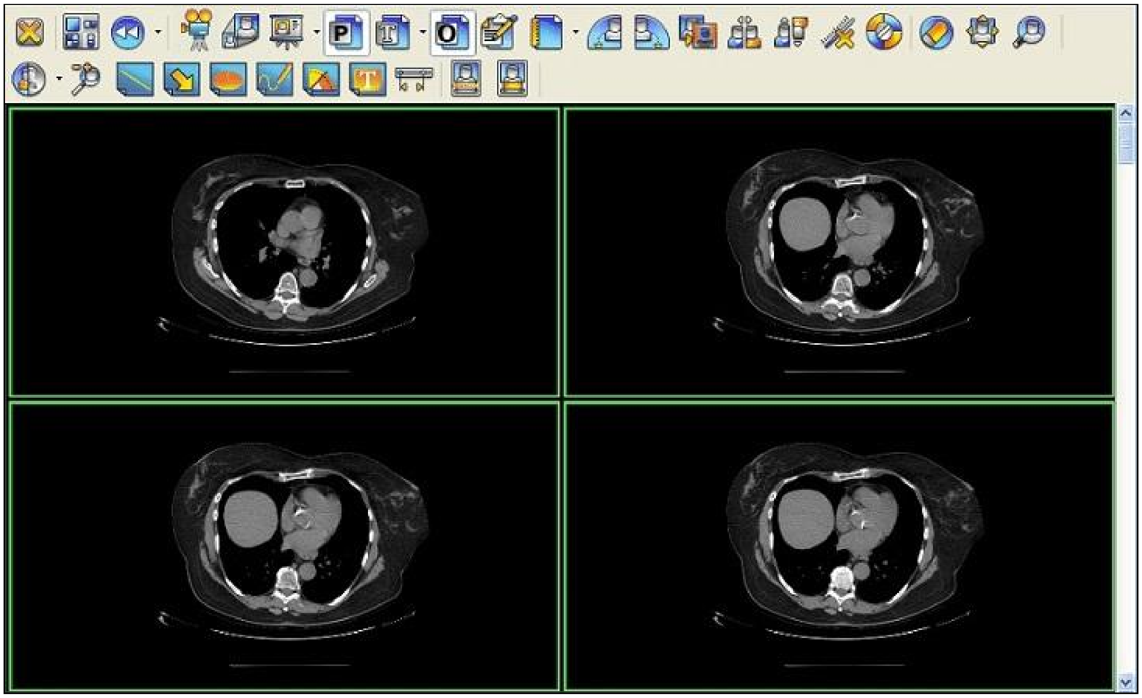
Layout Tools

Simple Layouts

The layout icon is located by default on the left side of the imaging toolbar. Click the button to display the following layout editor pane:

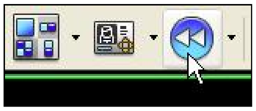
Edit the layout of the series on the screen by clicking one of the buttons in the "Layout Series" grid. Here, for example, we have chosen a layout with 2 rows and 2 columns.

To edit the layout of the images in a series, right click the series and select "Image Layout" from the popup menu. Here, for example, we have chosen a layout with only one series visible, but that series divided in to 2 rows and 2 columns:

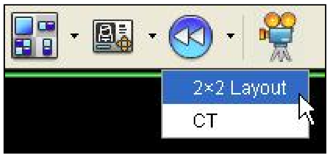


Reverting to a Previous Layout

To revert to the most recently used layout, click the revert layout button on the imaging toolbar:



The drop down menu to the right of this icon contains a list of recently used layouts:

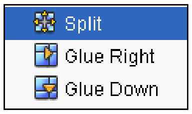


Specifying Default Layouts

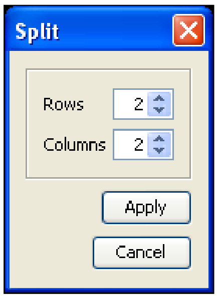
The Layout Management Options interface allows the user to select a default layout for each modality. These settings are available by clicking Options on the Tools menu, and then selecting Display -> Layout.

Splitting a Region of the Display

To split a region of the display into multiple smaller regions, right click on that region and select "Split".



You will be presented with the following dialog:



Select the number of rows and columns in which to split the selected region. Click OK.

Gluing Two Regions of the Display

Two regions of the display can be joined to create one larger region in two ways:

- Glue Right: Joins the selected region to the region on its right, if the two regions have equal height.
- Glue Down: Joins the selected region to the region below, if the two regions have equal width.

To glue right or glue down, right click on the appropriate display and select "Glue Right" or "Glue Down":

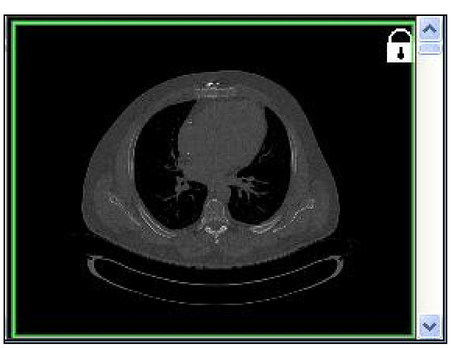
Scrolling Series

To scroll through series, use keyboard shortcuts:

- Page Down: Next series
- Page Up: Previous series

In some cases, it may be desirable to move some series but not others. For example, when viewing a CT study, one may prefer to keep the localizer (scout) image in a particular location. In that case, one can **lock** the series for scrolling. This is achieved by holding down the ALT key, and clicking on the series.

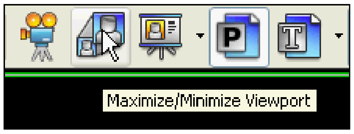
A small padlock icon denotes that this series is now locked for scrolling:



Now this series will remain in place while neighboring series scroll around it.

Maximize/Minimize Viewport

To maximize the selected series, click the Maximize/Minimize Viewport button on the imaging toolbar:



Alternatively, double click the series to be maximized. Double clicking again restores the layout to its previous state.

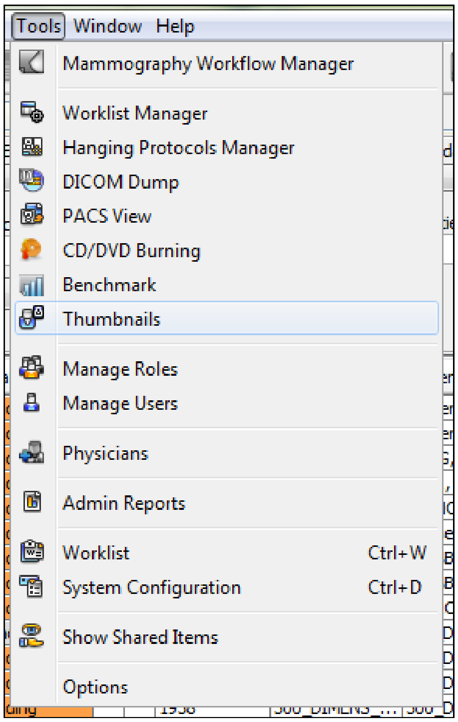
Loading Series

When a study is opened, a default layout is applied. Two means of moving series around on the screen are provided:

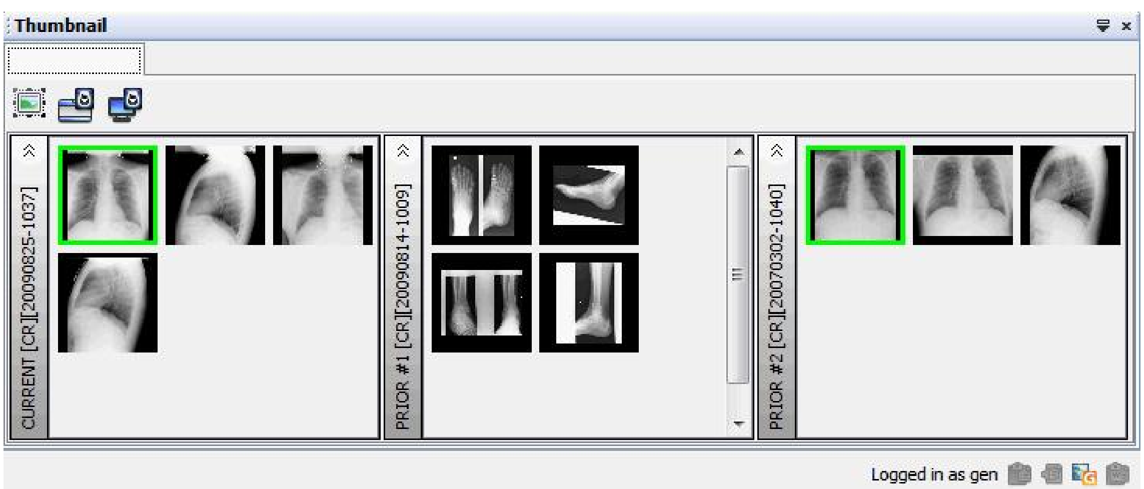
- Thumbnail Tool
- Right-Click Menu

Thumbnail Tool

Activate the thumbnail tool by clicking "Thumbnails" on the Tools menu:



The thumbnails window is displayed. Each opened study contributes one panel to the thumbnail window. Each panel contains one thumbnail icon per series in the appropriate study.



Those series already visible will be colored with green edges.

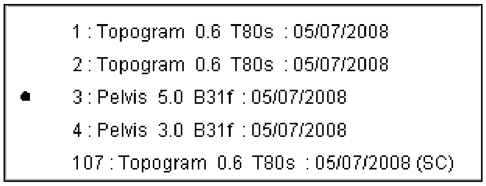
Click and drag one of the thumbnails into region of the display to load the depicted series there.

The window is shown docked. The thumbnails panel can be undocked into a separate window by clicking the Dock/Undock panel button.

If studies are opened in multiple monitors, thumbnails window of each study can be docked to the corresponding monitor with the Dock to other Monitors button.

Right-Click Menu

Right clicking on any region of a display component brings up a list of the available series:



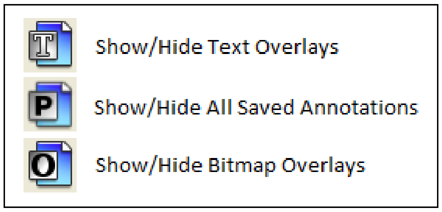
The series currently loaded into the active container is denoted by a bullet. Clicking any series loads that series into the active container. All secondary capture series are marked as "SC".

Overlays

There are three optional sets of data which can be rendered as overlays on top of visible image data:

- Saved Annotations (GSPS)
- Text Overlays and Patient Demographics
- Bitmap Overlays

Turning these overlays on and off is achieved by clicking the appropriate button on the imaging toolbar:

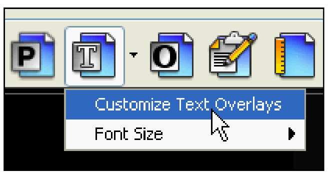


Text Overlays

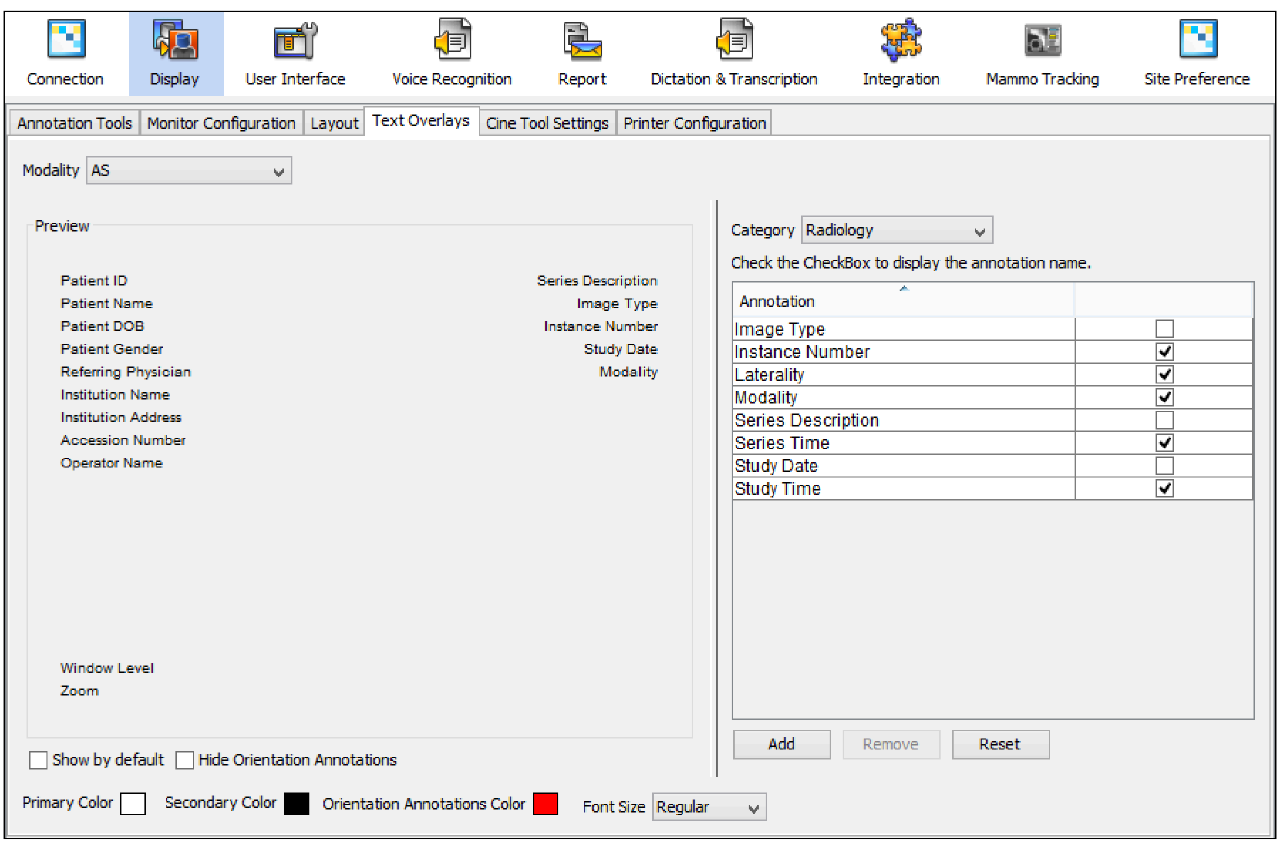
Submenu of the Text Overlays tool allows the user to customize the Text Overlays and modify the font size.

Customization

Text overlays of the opened study can be modified by the Customize Overlays submenu.

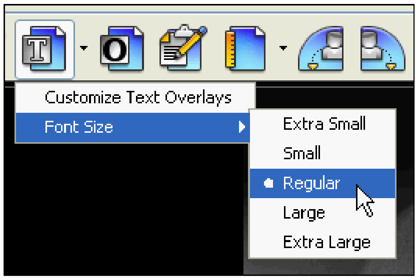


Selecting the Customize Overlays submenu will popup up the Text Overlays panel. Click on OK to apply any modifications.



Font Size

Font size of the overlays can be modified by the Font Size submenu.

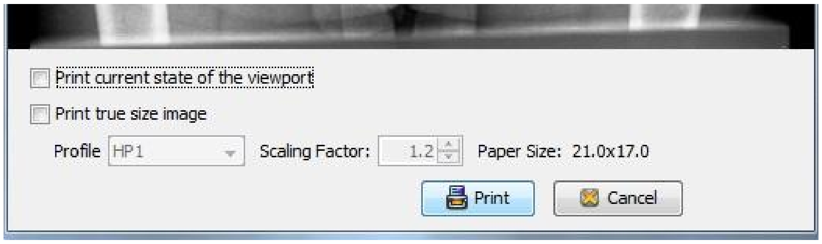


Any modifications done through the Text Overlays submenu will be applied to opened images

Paper Printing

To print an image, follow the steps below:

- Open a study and click on the image you would like to print.
- Either click on: File -> Print, or right click on the image and choose "Print".
- Click on the "Print" button in the dialog without checking any of the check boxes. You can make changes to the operating system's printing options dialog that will open. Once you accept your changes, the image will print.

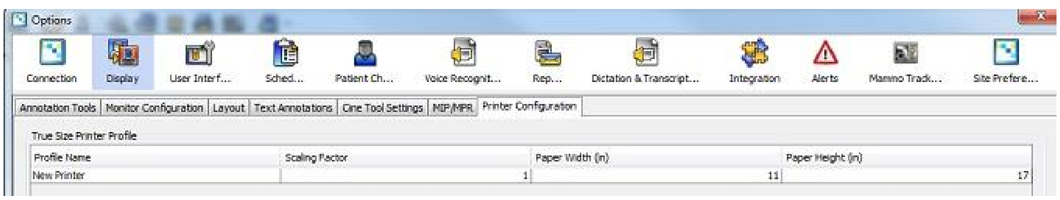


True Size Printing

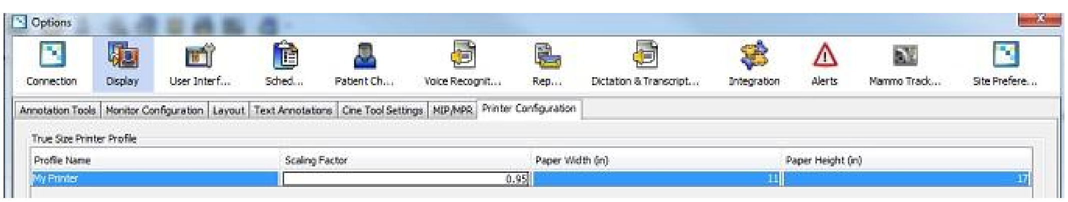
True Size Printing offers the user the ability to print an image in its actual size. The image can be scaled and printed on different sized paper.

To print images in True Size, you have to have a "Printer Profile" saved in your system. Below are the steps that show you how to create, edit, and delete a "Printer Profile":

- First, go to Tools -> Options -> Display -> Printer Configuration Panel.
- Then, click on the "Add" button located at the bottom. A new row will be created. The values will be set to the defaults initially, but they can be changed.



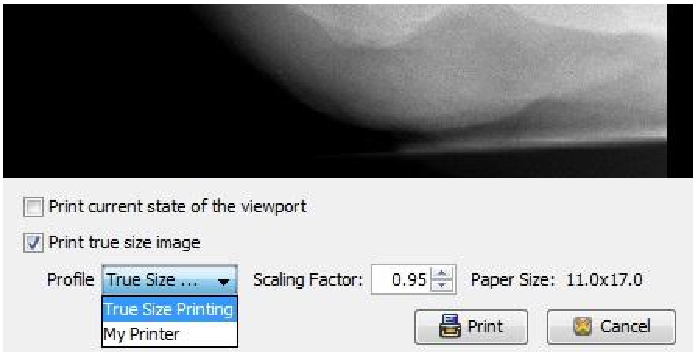
To change one of the values, first click on the cell that contains the value. Then type the value you would like it to be set to. Note that "Scaling Factor" can be a number within the 0.01 to 9.99 range. Similarly, "Paper Width" ranges from 2.1 to 33.1 inches, and "Paper Height" ranges from 2.9 to 46.8 inches.



To delete an existing "Printer Profile", click on the row you would like to delete, and then click on the "Remove" button located at the bottom.

Now you are ready to print the image in true size. In order to do it, follow these steps:

- First, open a study.
- Then, click on the image you would like to print.
- In order to print, you can go to File -> Print, or alternatively, right-click on the image and choose "Print".
- Once the printer preview dialog shows up, check the "Print true size image" check box.
- Then select a printer profile from the dropdown menu and change the scaling factor if needed.
- Finally, click on "Print". If needed, you can make changes to the operating system's printing options dialog that will open. Once you accept your changes, the image will print.

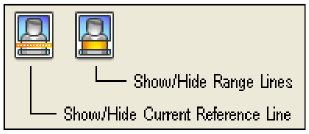


Print current state of the viewport
Print true size image
Profile
True Size ...
True Size Printing
My Printer
Scaling Factor:
0.95
Paper Size:
11.0x17.0
Print
Cancel

Reference Lines

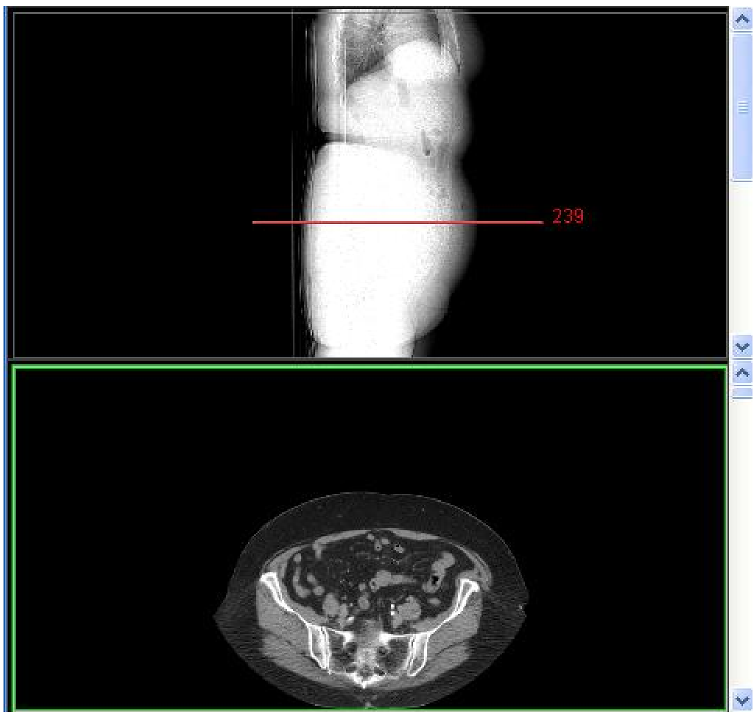
The reference line tools depict the spatial relationships between multiple series.

Activate the reference line tools by clicking one or both of the two reference lines icons on the imaging toolbar:



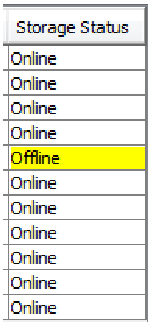
The first (left-most) icon activates the current reference line. That is, the displayed location of the currently active series will be rendered on all other displays. In the example below, the axial CT is selected, and its location is rendered as a solid red line on the localizer (scout) image on the top.

The second icon activates the range tool. This shows reference lines for the first and last slices in the currently selected series.



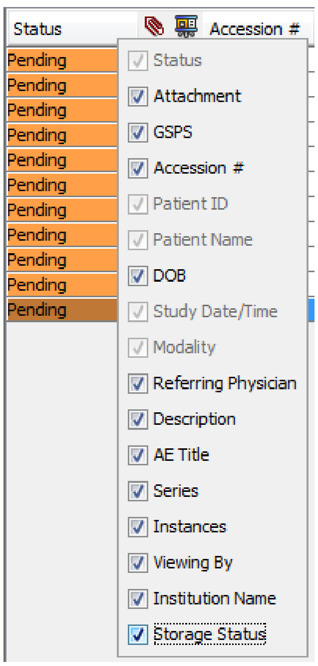
Restoring Studies

The storage status of each study is displayed in PACS View. "Online" means the study is stored on the server and can be opened. "Offline" means the study is archived somewhere else. Archived studies need to be restored before being opened.



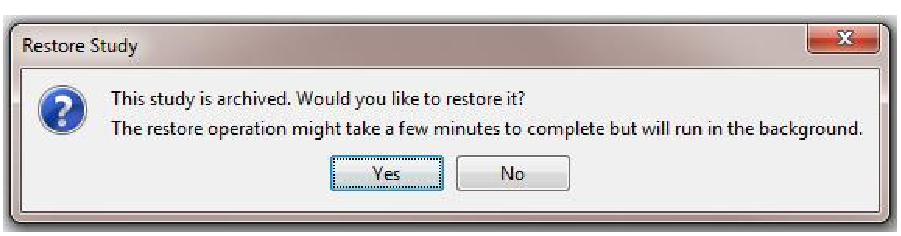
Opening the Storage Status Column

Right click anywhere within the first row of the PACS View (Status, Accession #, Patient Name, etc.), then check the "Storage Status" at the bottom of the menu:

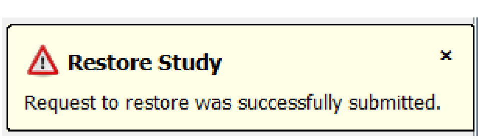


Restoring an Archived Study

Double click an archived study (whose storage status is "Offline"), then a pop up window will appear as follows:



If you click "Yes", a message will appear saying "Request to restore was successfully submitted". It might take up to a few minutes to restore a study.



Scrolling Instances

When a series has multiple instances, a scrollbar will be added to the series viewport. Use the following to scroll:

- Scrollbar
- Dragging Mouse over the Series Viewport
- Mouse Wheel

Use Scrollbar

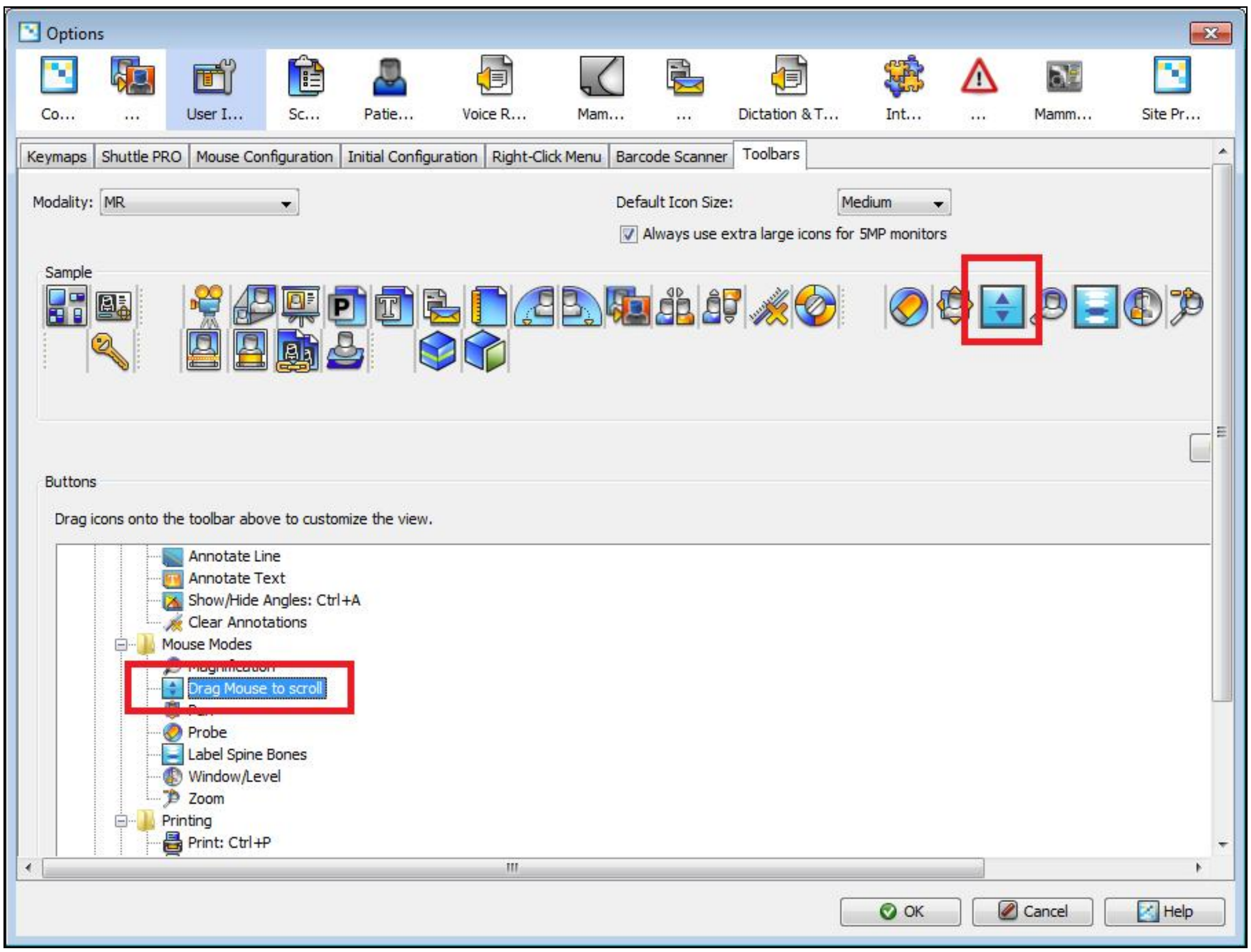
Drag the Scrollbar to scroll to the desired instance.

Dragging Mouse over the Series Viewport

Instances can be scrolled via dragging the mouse up and down over the series viewport. First make sure the Drag Mouse to Scroll button is added to the toolbar. If not, it must be added to the toolbar for it to be active.

Adding Mouse Drag Scrolling to a Modality

From the Options dialog box, User Interface, Toolbars tab, select the modality and drag the Drag Mouse to Scroll button to the toolbar.



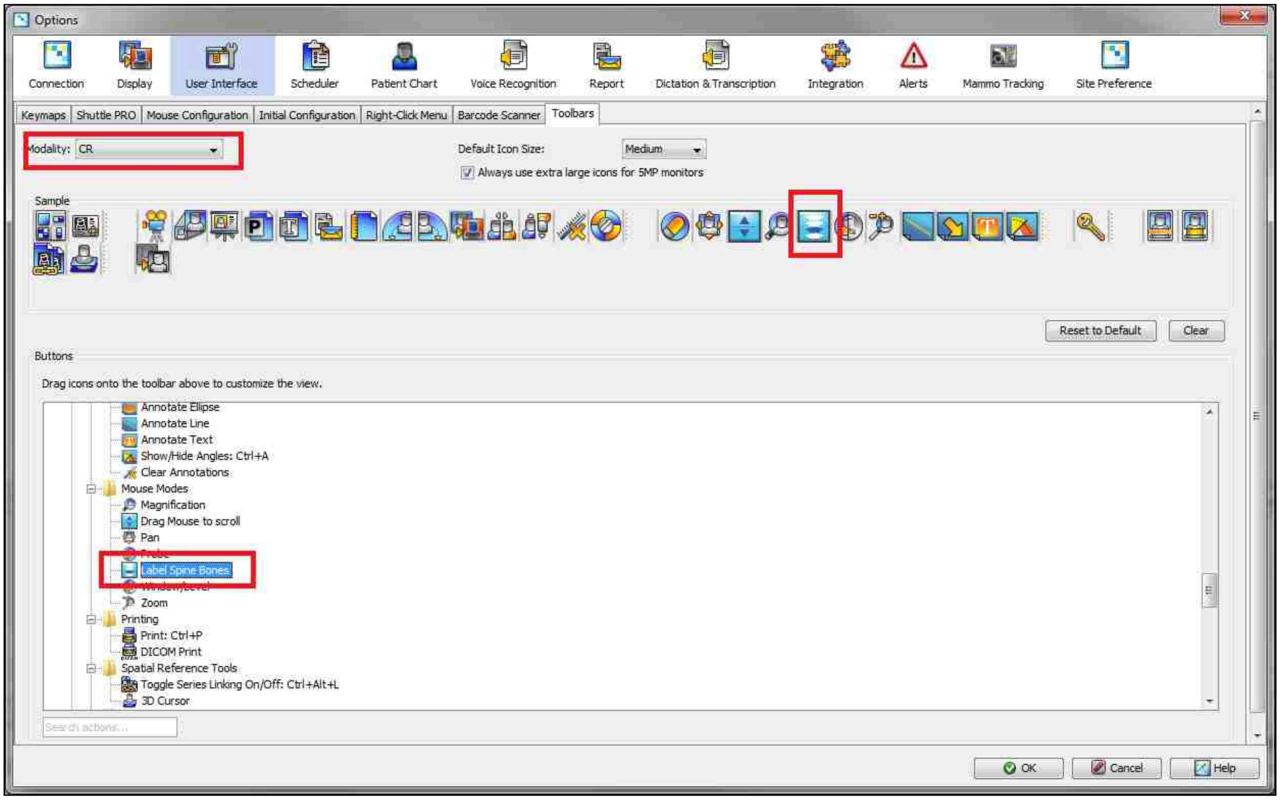
Scroll using the Mouse Wheel

Instances can be scrolled via the mouse wheel. For series that have large number of instances, use the scrollbars or mouse dragging to get to the vicinity of the desired instance and then use the mouse wheel to display the desired instance.

Spine Labeling Tool

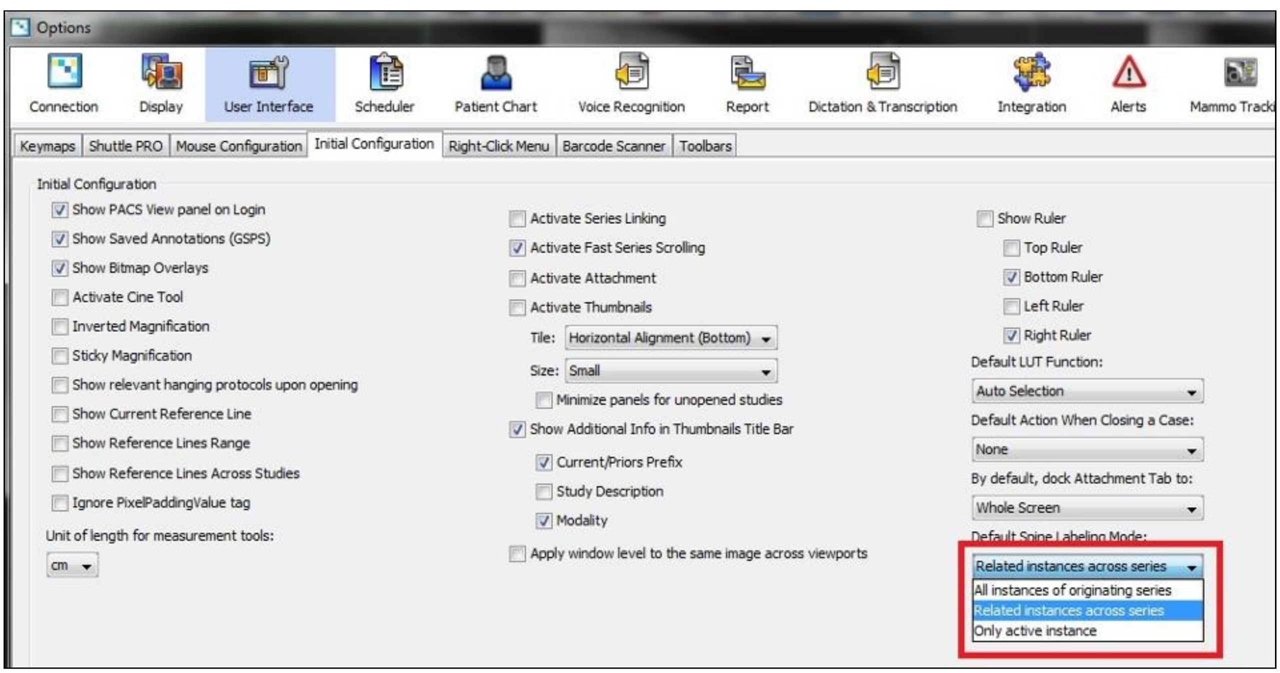
Adding to a Modality

From the Options dialog box, Toolbars tab, select the modality and drag the Spine Labeling tool to the toolbar



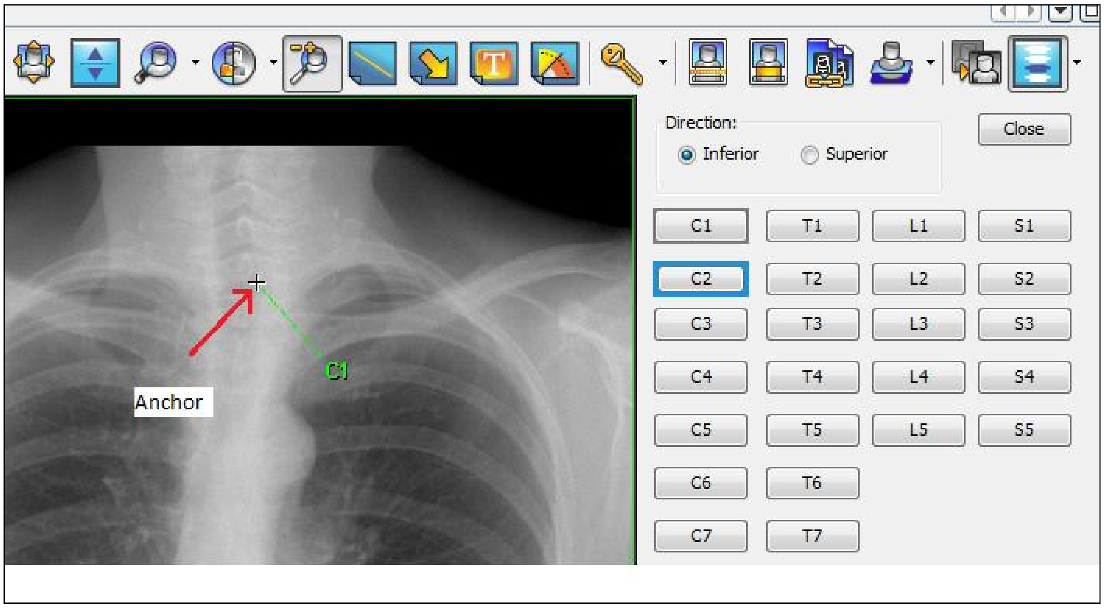
Setting The Labeling Mode

From the initial configuration panel choose the Default Labeling Mode



Marking and Positioning a Label

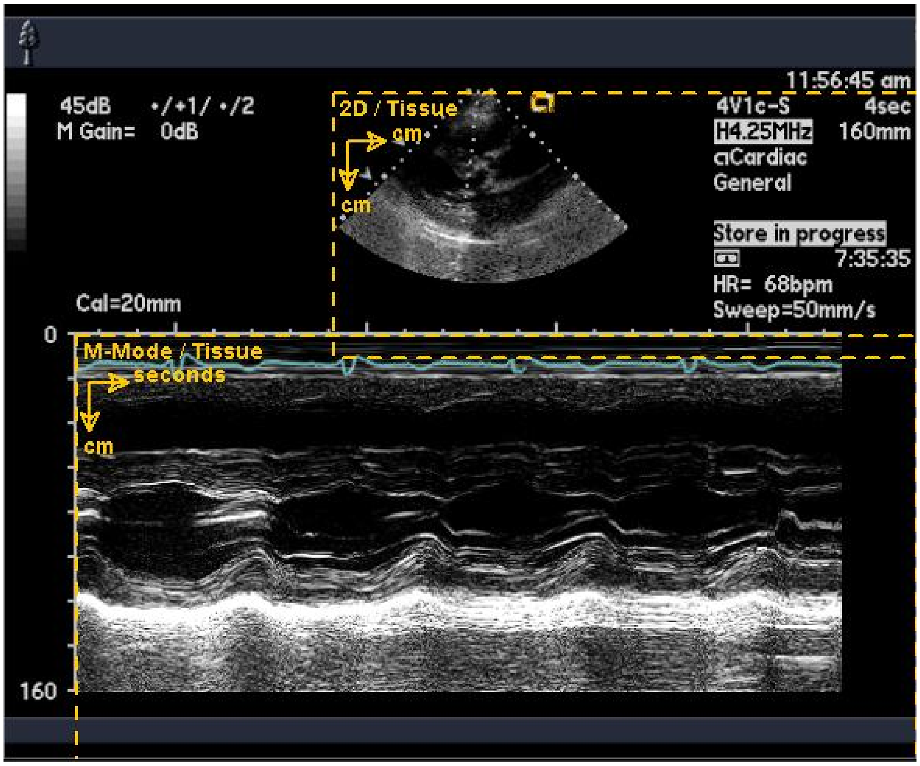
On Labels Panel select a bone. Click on a bone to label it. Once a label has been added, it can be positioned by dragging the crosshair anchor. The text of the label is automatically added depending on which bone was active on the Labels Panel. The text of the label can be dragged and positioned as needed.



Ultrasound Region Calibration

To use the Ultrasound Region Calibration, click on the corresponding icon on the imaging toolbar:

The different Ultrasound Regions will be displayed on top of each image contained in the study.



The information shown contains the following items:

- Boundaries
- Physical Units (x and y directions)
- Spatial Format
- Data Type

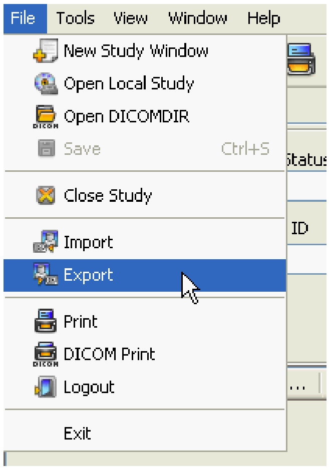
Regardless of whether the Ultrasound Region Calibration is active or not, the measurement tool will still get the necessary information from the corresponding DICOM tags to display the correct length of a segment, based on what region contains the segment's starting point.

Export Tool

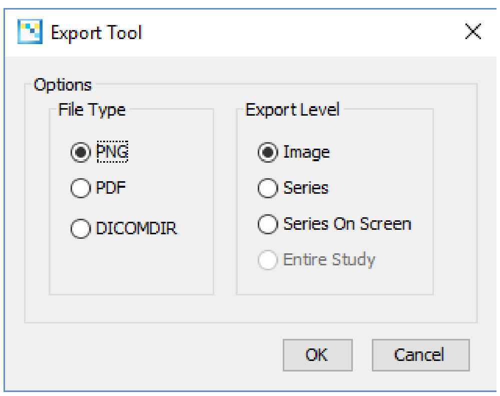
This feature enables a user to export studies from the ImageGrid Platform to any of the following formats.

- PNG
- PDF
- DICOMDIR in a zipped folder

Open a study which is to be exported. Select File > Export from the application's main window.



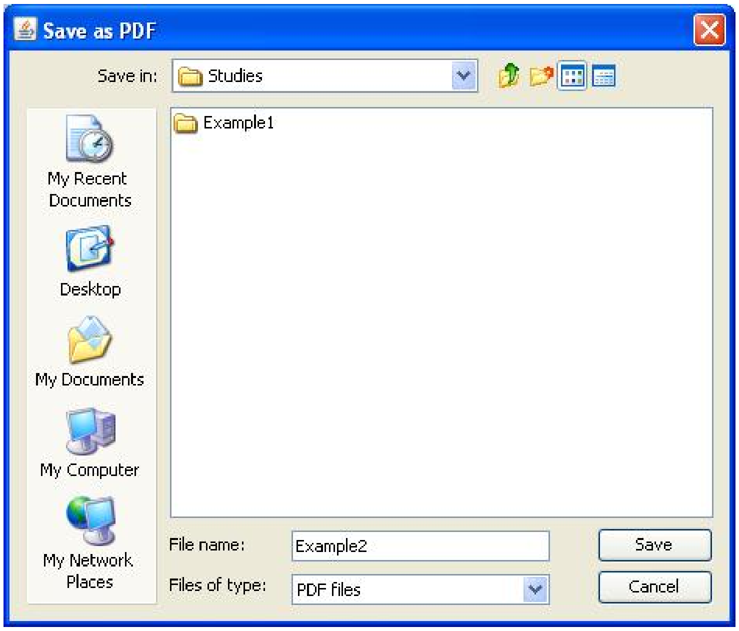
The Export tool wizard gets displayed.



The desired file format can be chosen in the dialog and the export level can be specified as well.

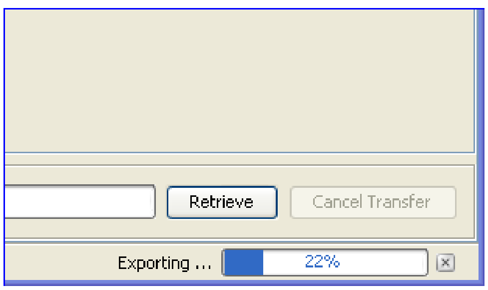
- Image: exports a selected image
- Series: exports a selected series
- Series On Screen: exports all series which are displayed on connected monitors at that time
- Entire Study: exports a study in the DICOMDIR format

Clicking on OK opens another window.



The location of the folder to be saved and its name can be entered in the Save dialog. Click on the Save button to start exporting.

A bar located in the bottom-right corner of the main window indicates progress of the exporting process.

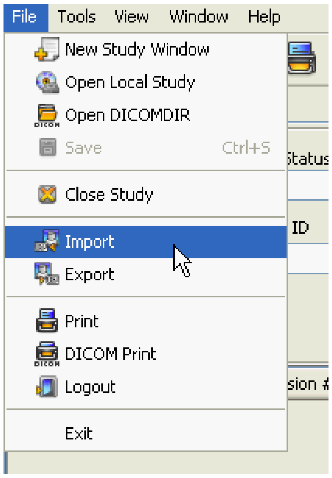


Once the process is completed, a folder with the chosen options would be available in the specified directory.

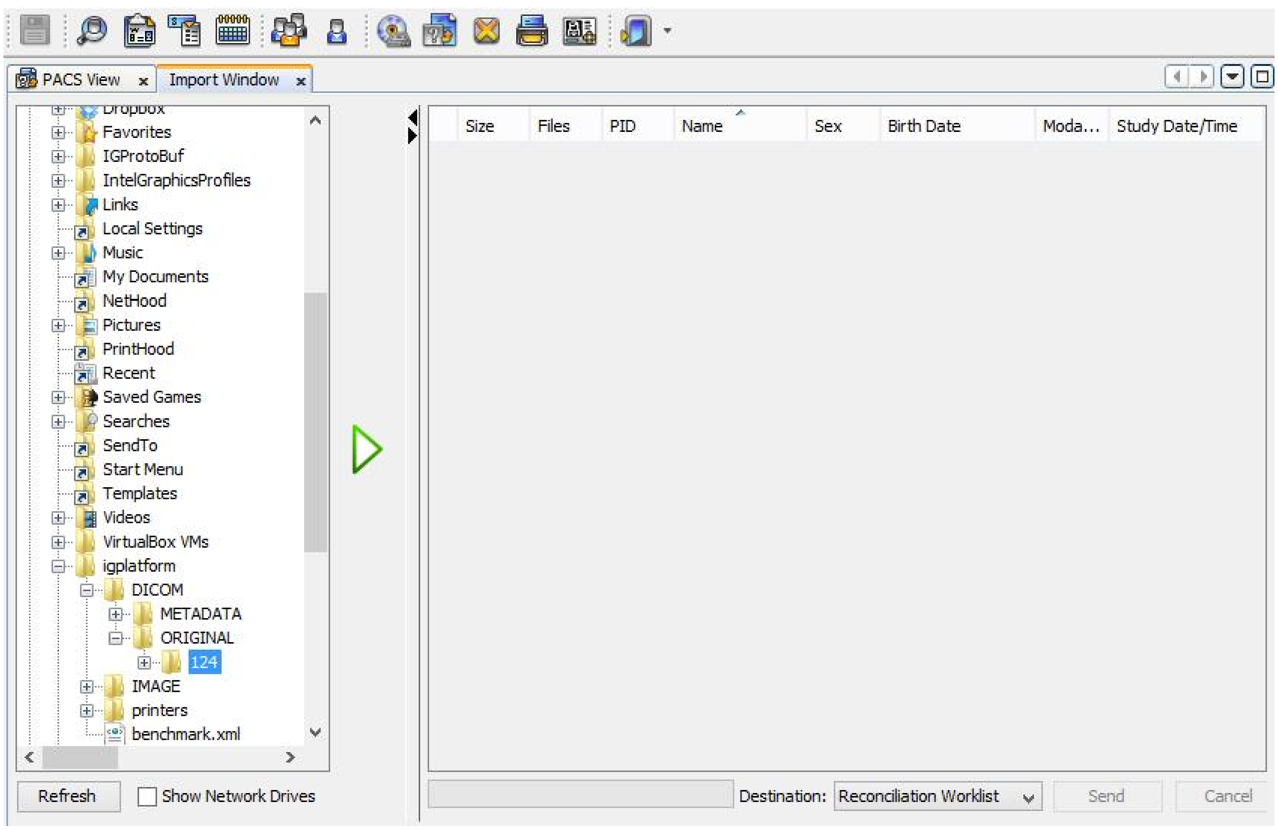
Import Tool

The Import Tool will help you import studies from your local workstation to the ImageGrid.

To begin, select File > Import in the main window.



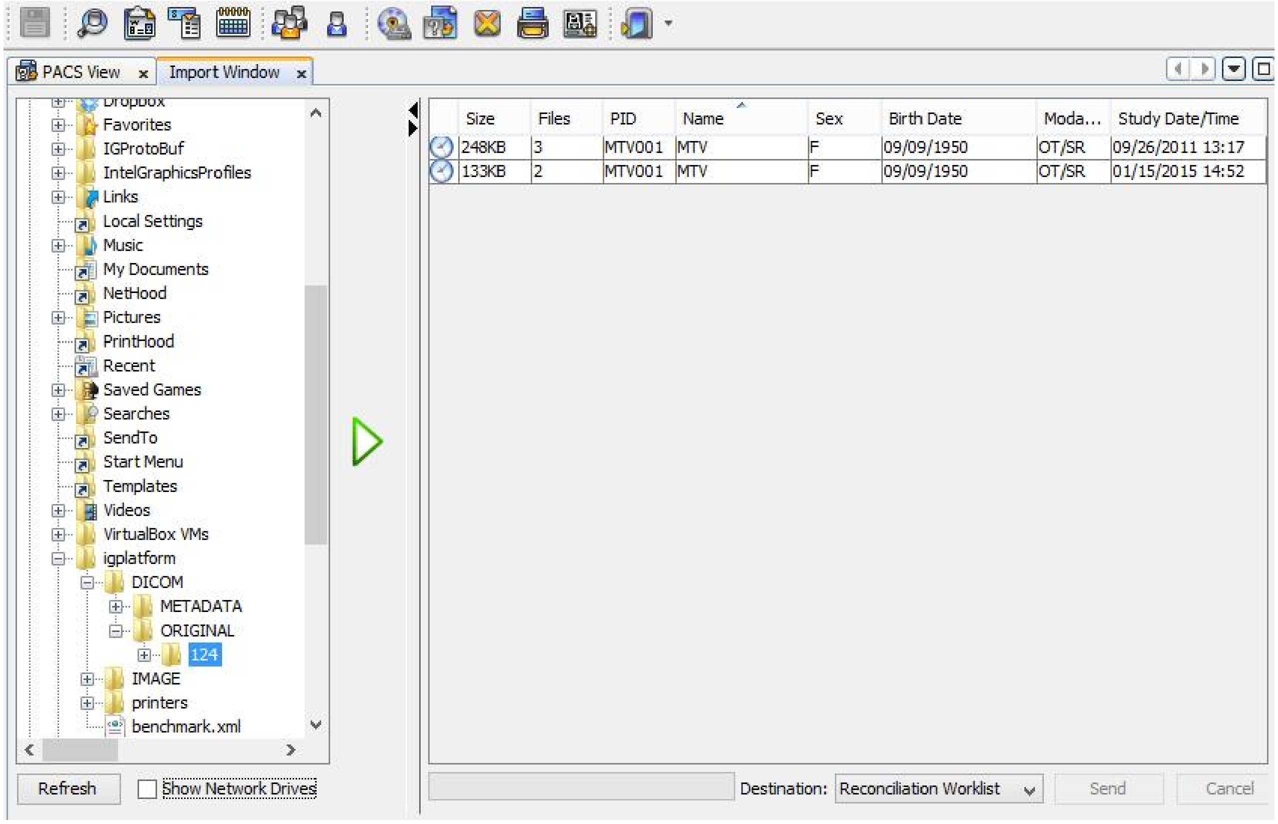
The "Import tool" tab will appear in the main window.



Importing studies to the ImageGrid is done in two steps: Scanning for DICOM files in a folder and Copying the found files to the selected AE Title.

Scanning for DICOM files

To import DICOM files the first thing you have to do is to obtain all the DICOM files present in a folder. In order to do that, in the Navigator window on the left side of the import tab, select the folder containing the DICOM files you would like to import. Checking the 'Show Network Drives' box below the Navigator window, displays the mapped network drives, if any, and allows you to import files from such drives as well. Then click the green and white arrow that links the Navigator window and the table on the right side. The progress bar at the bottom of the window will keep you posted on the progress of the task. Once the "Scanning" is done you will see all the studies identified as "valid" listed on the table.



Copying files to an AE Title

Now the studies are ready to be imported. The only thing left is to select them (left-click on them using the mouse), select the AE Title you want to export them to and click "Send".

In the same way as before, the progress bar will indicate the progress of the task and once it has reached the end the import is done. You will also see that the status of the study has changed from "Pending" ( ) to "Successfully Sent" ( ).

Using PACS Reconciliation

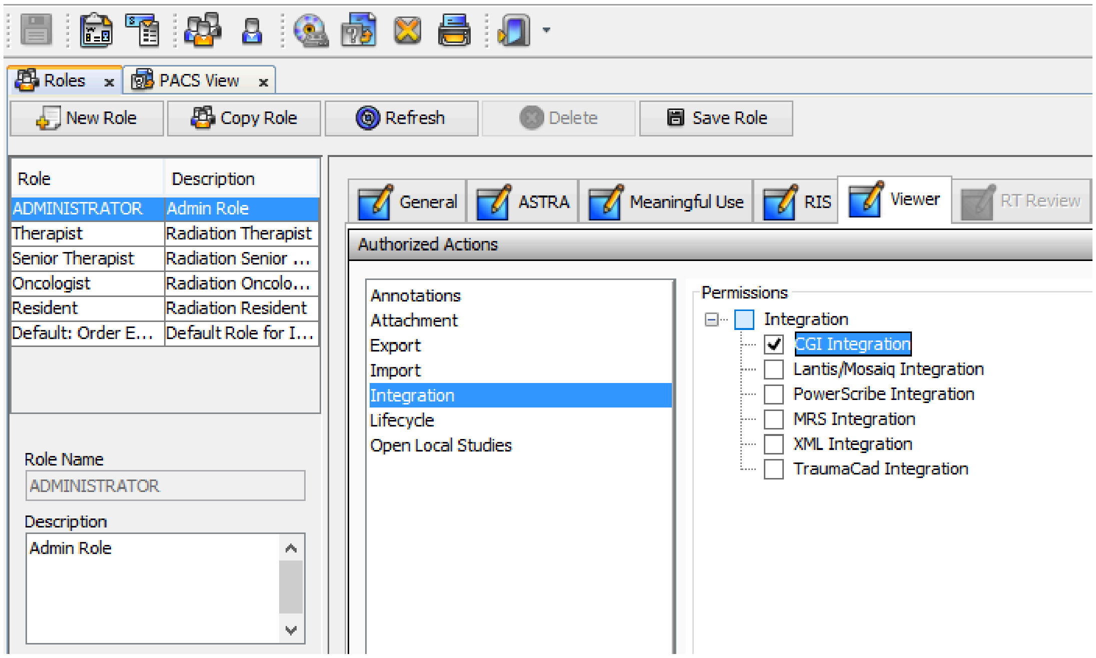
The studies can also be sent by using PACS Reconciliation. This option allow users to send studies to the PACS without specifying an AE Title in advance. To use this option, select "QC Staging" as destination. After sending the studies, users will need to go to the Reconciliation Worklist page in the ImageGrid Web Interface to manually import the studies into an AE Title. During this time, users will be given the opportunity to resolve any patient inconsistencies.

CGI Integration

CGI Integration allows a user to have some control over the ImageGrid Viewer from a web page. A request can be passed via a URL to an ImageGrid server. A Java application then gets downloaded and it performs the action requested by the arguments passed in the URL.

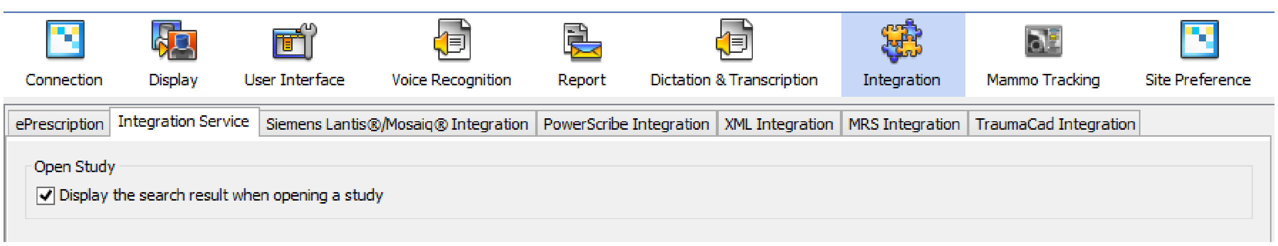
Steps to enable the use of CGI Integration

CGI Integration has to be enabled from Manage Roles settings. Check the box for "CGI Integration" appearing under Tools -> Manage Roles -> Viewer -> Integration. Click the "Save Role" button to apply the settings. The settings take effect when a user with the changed role logs in the next time.

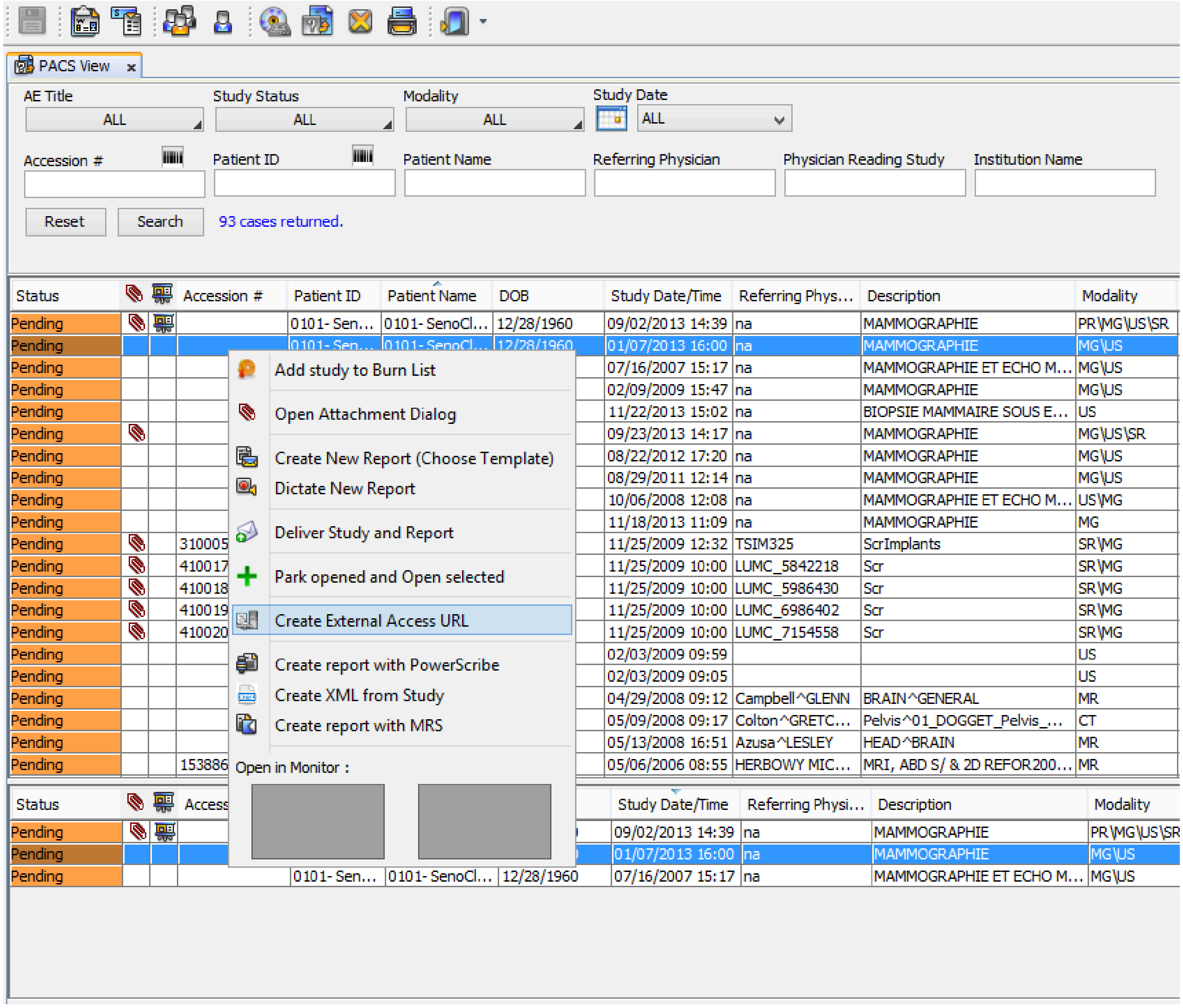


CGI Integration Options

The Integration settings are located under Tools -> Options -> Integration -> Integration Service.



A URL to access a study can be generated using the right click menu of the PACS View as shown. When this URL is passed to a browser, ImageGrid Viewer client application is downloaded and the requested study can be accessed.

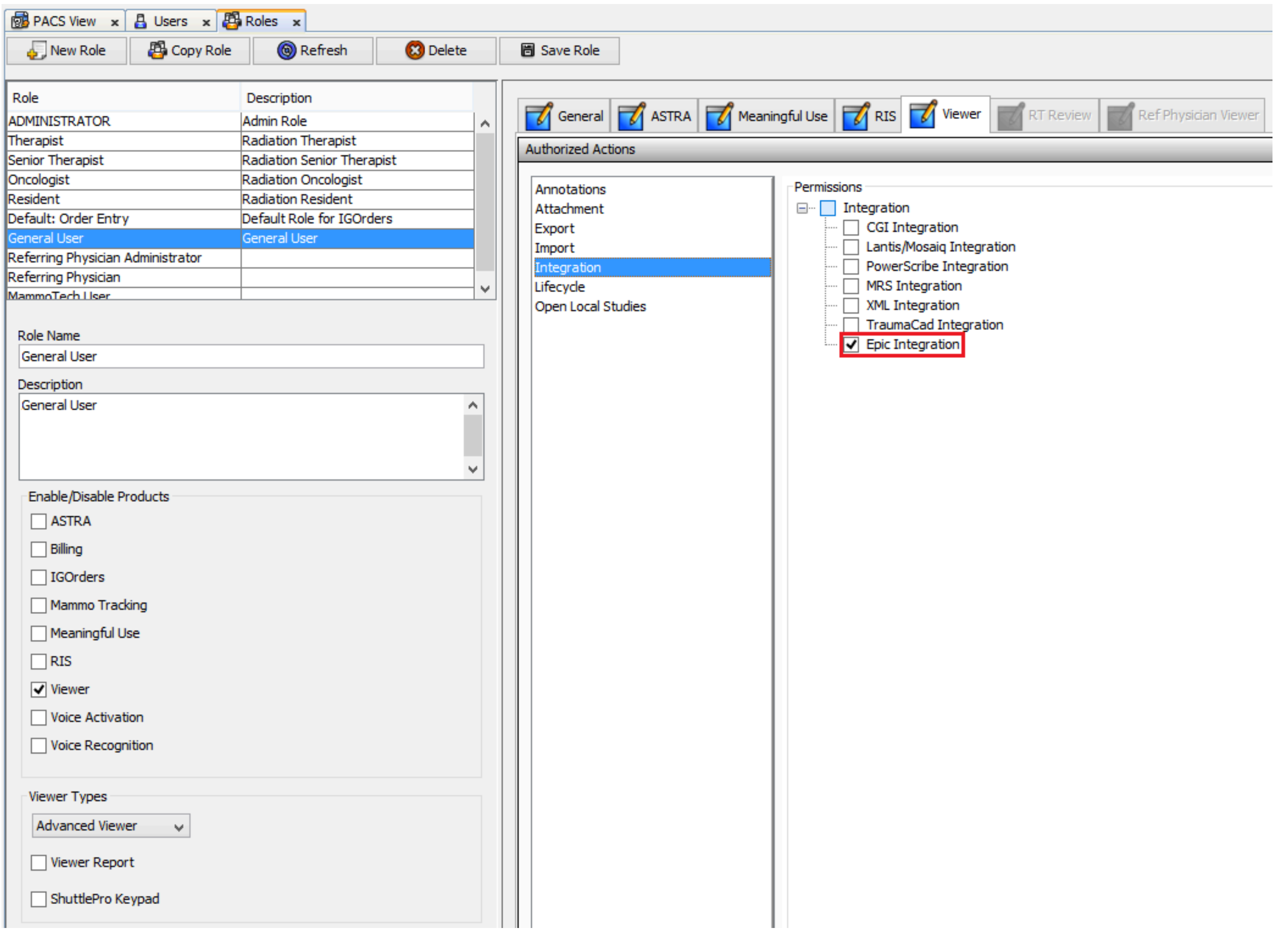

PACS View
AE Title
ALL
Study Status
ALL
Modality
ALL
Study Date
ALL
Accession #
Patient ID
Patient Name
Referring Physician
Physician Reading Study
Institution Name
Reset
Search
93 cases returned.
Status
Accession #
Patient ID
Patient Name
DOB
Study Date/Time
Referring Phys...
Description
Modality
Add study to Burn List
Open Attachment Dialog
Create New Report (Choose Template)
Dictate New Report
Deliver Study and Report
Park opened and Open selected
Create External Access URL
Create report with PowerScribe
Create XML from Study
Create report with MRS
Open in Monitor :
Pending
MAMMOGRAPHIE
MAMMOGRAPHIE ET ECHO M...
BIOPSIE MAMMAIRE SOUS E...
ScrImplants
BRAIN^GENERAL
Pelvis^01_DOGGET_Pelvis_...
HEAD^BRAIN
MRI, ABD S/ & 2D REFOR200...
Referring Physi...

Epic Integration

The Epic Integration feature provides a capability for integrating ImageGrid Platform with a software from Epic. The ImageGrid Platform detects an 'open study' event in an XML file created by Epic and then opens a specified study automatically.

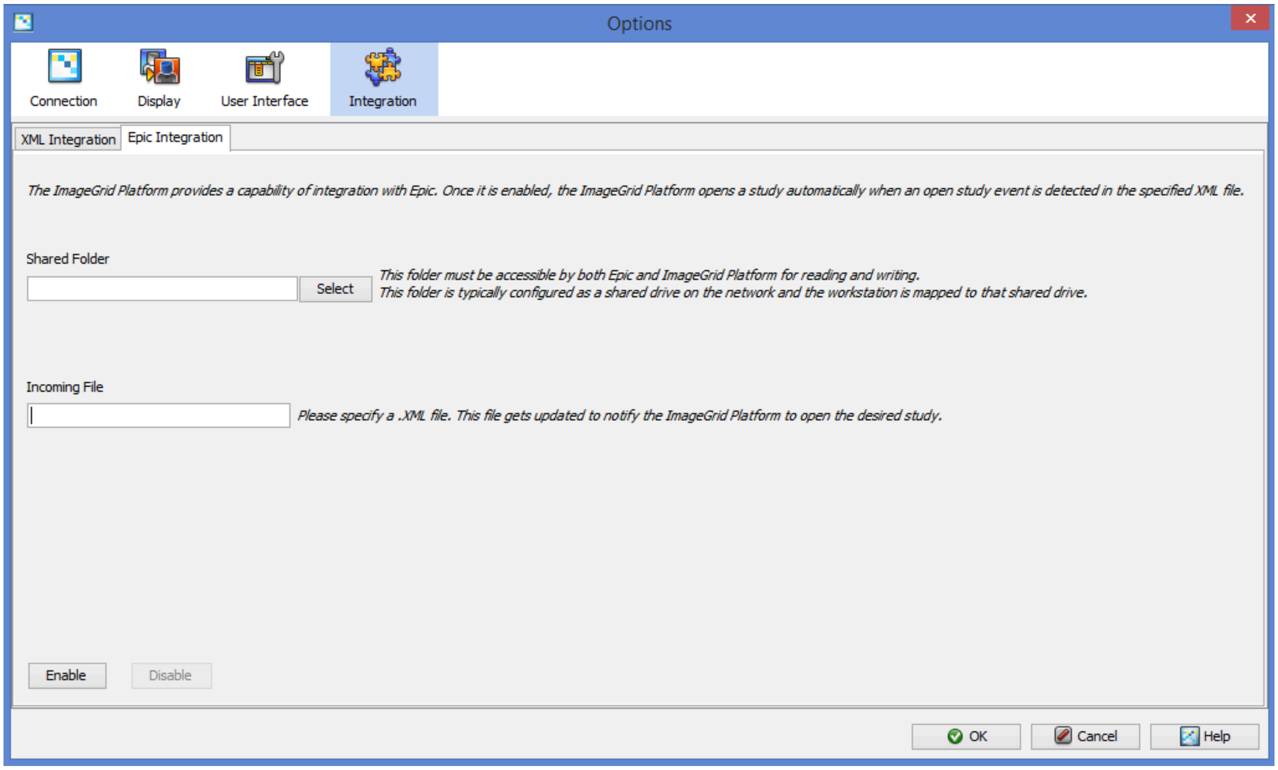
Steps to enable the use of Epic Integration

Epic Integration has to be enabled from Manage Roles settings available to an Administrator user. Check the box for 'Epic Integration' appearing under Tools -> Manage Roles -> Viewer -> Integration. Click the "Save Role" button to apply the settings. The settings take effect when a user with the changed role logs into ImageGrid Platform the next time.

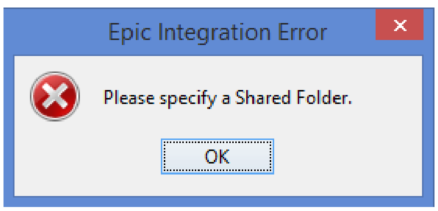


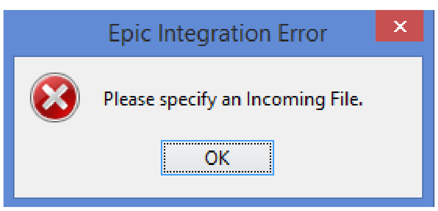
Epic Integration Options

The Epic Integration process reads an XML file created by Epic and takes an action based on the extracted information. Thus, the ImageGrid Platform requires the path to this XML file. It can be entered in the Epic Integration option panel. This panel is located under Tools -> Options -> Integration.

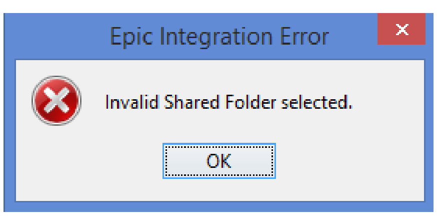


The directory and the file name of the XML file to be read need to be specified. If either of the text fields are left empty, the following error messages get displayed, when the Enable button is clicked.





The specified Shared Folder must exist on the computer and the user must have read permissions for the same. Following message gets displayed, if an invalid directory is entered.



The Incoming File name must end with the extension .xml. The name may contain wildcard characters such as an asterisk '*'. Files with names matching the specified pattern would be read in such a case. For example,

Incoming File: Candelis*.xml
Possible names of files which could be read: Candelis1.xml, Candelis-1234.xml, Candelis_test.xml

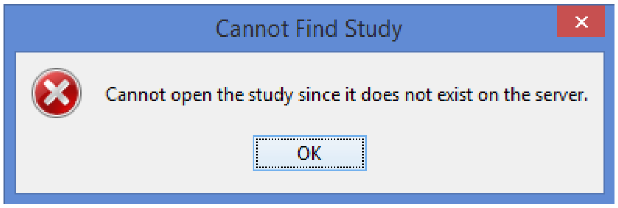
The Enable and Disable buttons in the option panel govern the integration process. Their operation is explained in the next section.

Epic Integration Operation

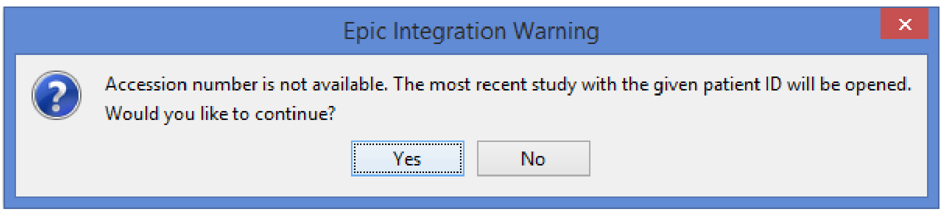
The integration is activated by clicking the Enable button in the option panel. Basic functionality of this integration can be described as follows.

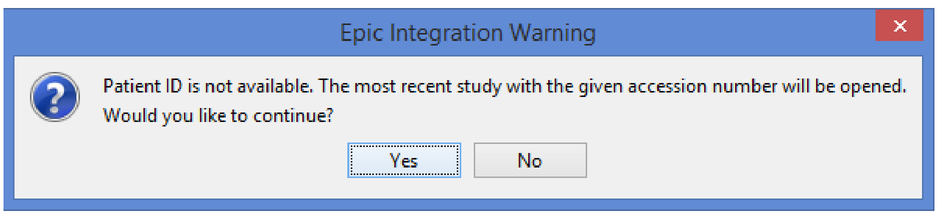
1. When enabled, the specified directory is scanned continuously for the specified XML file.
2. The 'Event' is detected from the XML file.
3. In case of a 'StudyOpen' event, a study is opened using the Accession Number and the Patient ID in the file and then the XML file is deleted.
4. The 'StudyClose' and 'StudySwitch' events are ignored, when detected, and no action is performed.

If no study is found on the server matching the given accession number and patient ID, the following message is displayed.

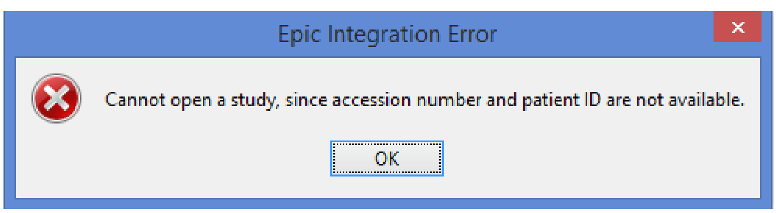


If either the accession number field or the patient ID field is not present in the XML file, the user is notified about the same and is presented with an option to open the most recent study found on the server matching the other available field.





If neither the accession number nor the patient ID is available from the XML file, the following error message gets displayed.



Supported XML Schema

- StudyOpen Event

<EpicStudyData>

<Event>StudyOpen</Event>
<EpicStudyID>12345678</EpicStudyID>
<AccessionNumbers>

<AccessionNumber>A00000000001</AccessionNumber>

</AccessionNumbers>
<StudyName>Test Study</StudyName>
<StudyStatusNumber>00</StudyStatusNumber>
<StudyStatus>Exam Status</StudyStatus>
<StudyDate>01/01/2015</StudyDate>
<StudyTime>10:10 AM</StudyTime>
<PatientID>123456789</PatientID>
<PatientBirthDate>01/01/1965</PatientBirthDate>

<PatientGender>Unknown</PatientGender>
<TimeGenerated>201501011200</TimeGenerated>

</EpicStudyData>

- StudyClose Event

<EpicStudyData>

<Event>StudyClose</Event>
<EpicStudyID>12345678</EpicStudyID>
<AccessionNumbers>

<AccessionNumber>A00000000001</AccessionNumber>

</AccessionNumbers>
<StudyName>Test Study</StudyName>
<StudyStatusNumber>00</StudyStatusNumber>
<StudyStatus>Exam Status</StudyStatus>
<StudyDate>01/01/2015</StudyDate>
<StudyTime>10:10 AM</StudyTime>
<PatientID>123456789</PatientID>
<PatientBirthDate>01/01/1965</PatientBirthDate>
<PatientGender>Unknown</PatientGender>
<TimeGenerated>201501011200</TimeGenerated>

</EpicStudyData>

- StudySwitch Event

<EpicStudyData>

<Event>StudySwitch</Event>
<EpicStudyID>12345678</EpicStudyID>
<AccessionNumbers>

<AccessionNumber>A00000000001</AccessionNumber>

</AccessionNumbers>
<StudyName>Test Study</StudyName>
<StudyStatusNumber>00</StudyStatusNumber>
<StudyStatus>Exam Status</StudyStatus>
<StudyDate>01/01/2015</StudyDate>
<StudyTime>10:10 AM</StudyTime>
<PatientID>123456789</PatientID>
<PatientBirthDate>01/01/1965</PatientBirthDate>
<PatientGender>Unknown</PatientGender>
<TimeGenerated>201501011200</TimeGenerated>

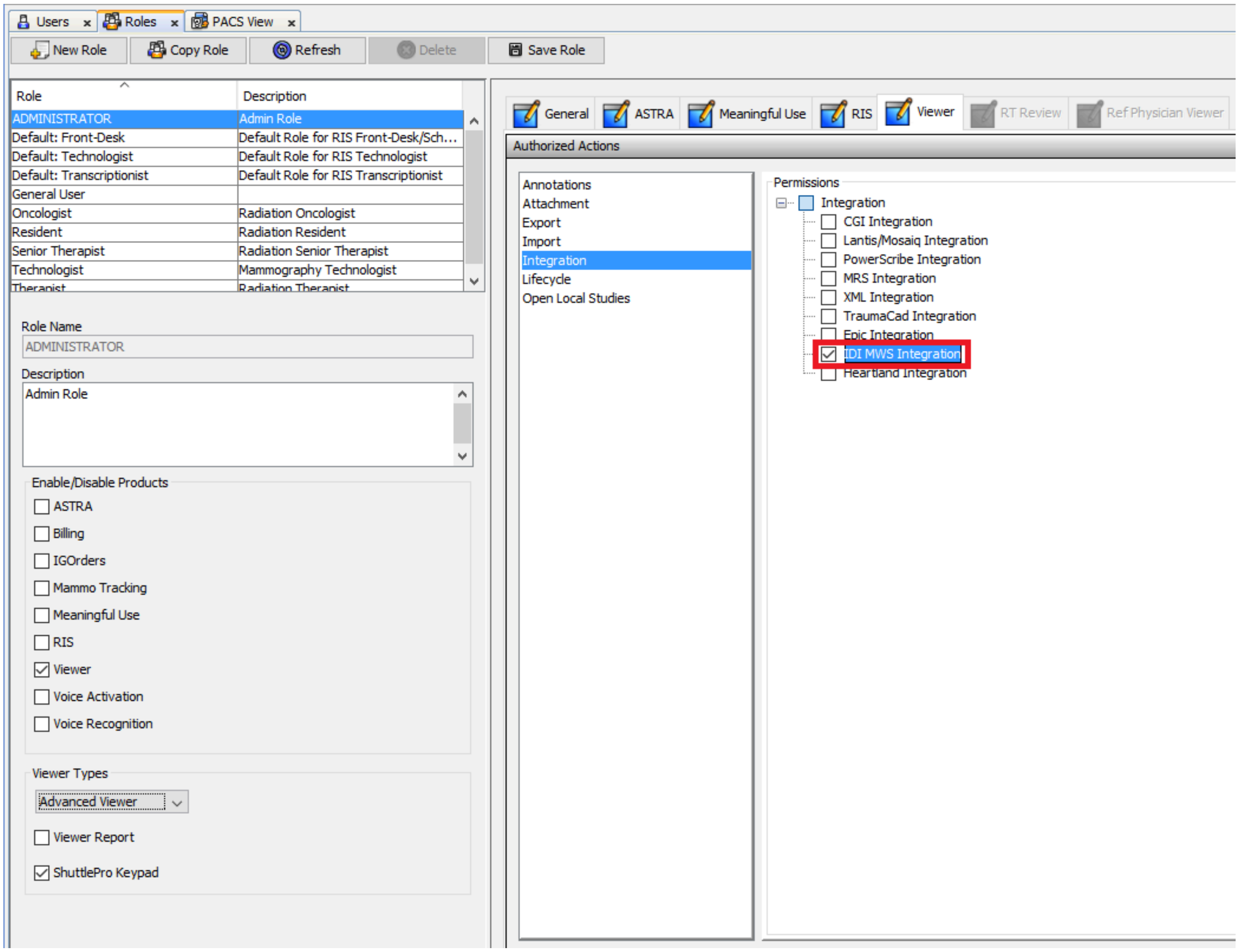
</EpicStudyData>

IDI MWS Integration

This feature helps integrate ImageGrid Platform with GE's IDI viewer. The ImageGrid Platform reads an XML file dropped in a shared directory by IDI and then opens report of the specified study automatically.

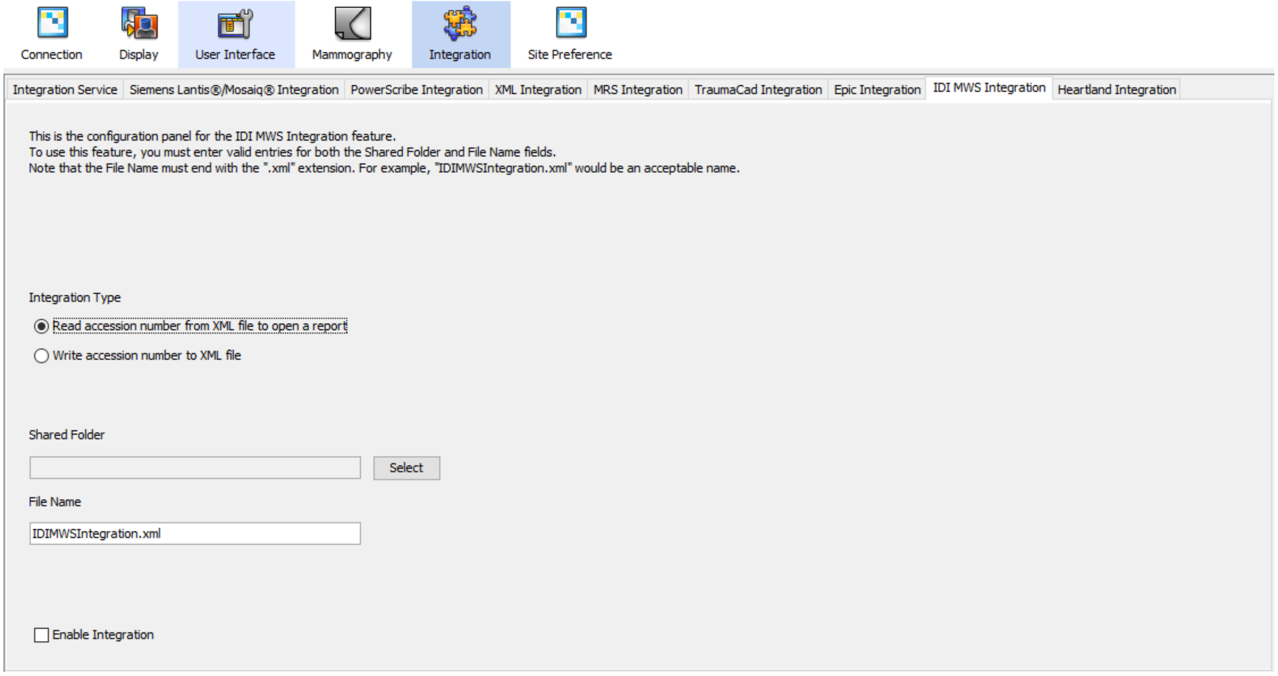
Steps to enable the use of IDI MWS Integration

IDI MWS Integration has to be enabled from Manage Roles settings available to an Administrator user. Check the box for 'IDI MWS Integration' appearing under Tools -> Manage Roles -> Viewer -> Integration. Click the "Save Role" button to apply the settings. The settings take effect when a user with the changed role logs into ImageGrid Platform the next time.



IDI MWS Integration Options

The conversation with IDI takes place via an XML file. The path to this XML file must be entered in the IDI MWS Integration option panel located under Tools -> Options -> Integration.

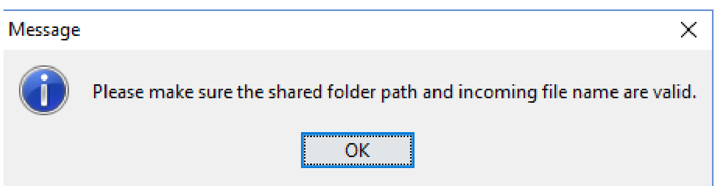


This feature supports two-way communication:

1. Incoming Integration: Reads accession number from an XML file dropped by IDI and opens the corresponding report
2. Outgoing Integration: Writes accession number of a study, as soon as it is opened, to an XML file. This file can then be picked up by ImageGrid Platform running on another workstation for the purpose of viewing reports.

The desired integration type can be selected in the option panel.

The directory and the file name of the XML file to be read or written need to be specified. If either of the text fields are left empty, the following error message gets displayed, when the Enable Integration box is checked.



The specified Shared Folder must exist on the computer and the user must have read and write permissions for the same. The File Name must end with the extension '.xml'.

IDI MWS Integration Operation

The integration is activated by checking the Enable Integration box in the option panel. Basic functionality of this integration can be described as follows.

1. Incoming Integration:
   - When enabled, the specified directory is scanned continuously for the specified XML file.
   - The 'Event' is detected from the XML file.
   - In case of a 'StudyOpen' event, report of a study is opened using the Accession Number and the Patient ID in the file and then the XML file is deleted.
   - Other events are ignored, when detected, and no action is performed.
2. Outgoing Integration:
   - When enabled, an XML file with the pre-set schema is written at the location specified in the option panel as soon as a study is opened.

Supported XML Schema

- StudyOpen Event

  <EpicStudyData>

<Event>StudyOpen</Event>
<AccessionNumber>A00000000001</AccessionNumber>
<EpicStudyID>12345678</EpicStudyID>
<PatientID>123456789</PatientID>
<AuthenticationData>123456789</AuthenticationData>

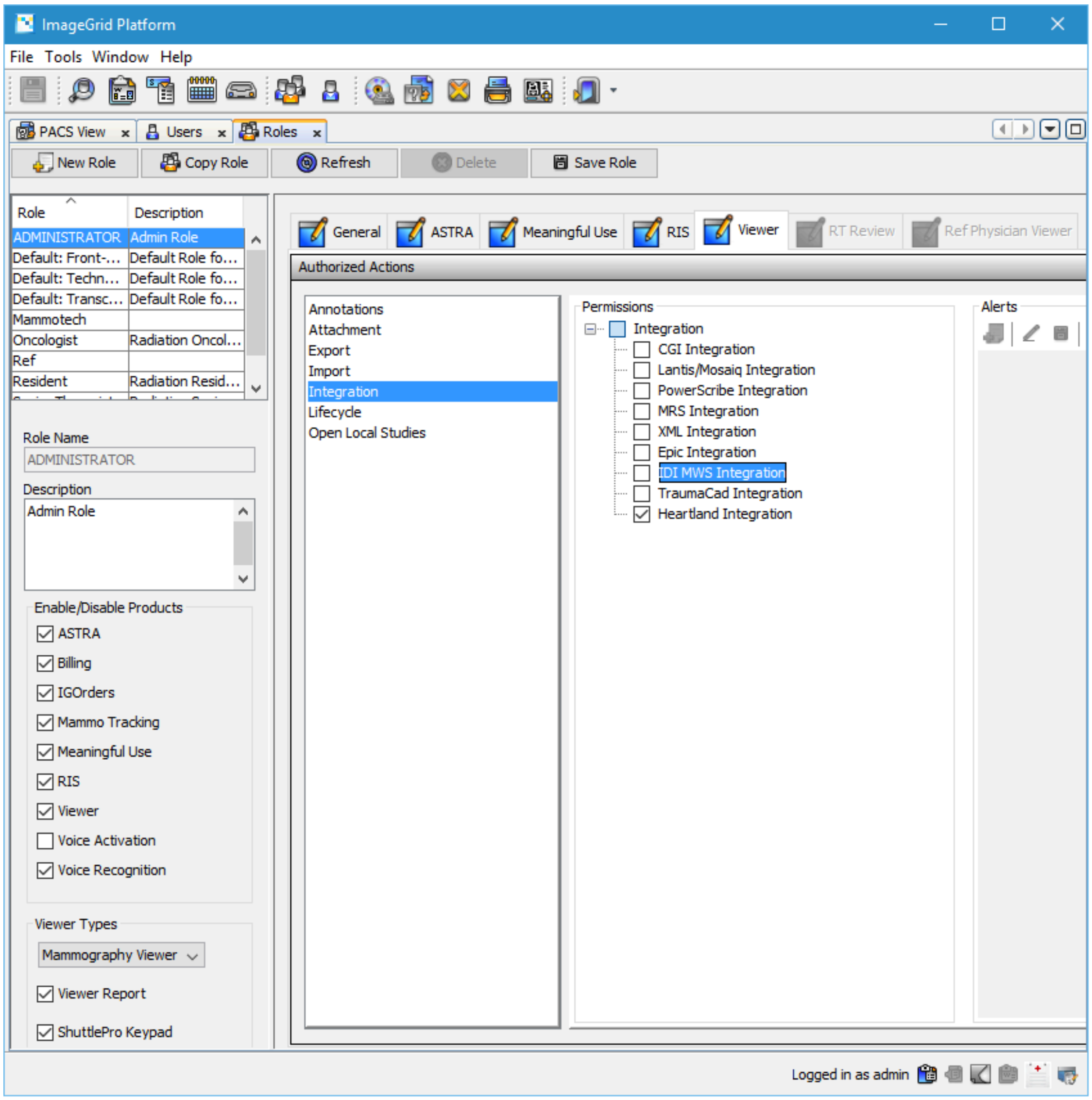
</EpicStudyData>

Heartland Integration

The Heartland Integration feature provides a capability for integrating ImageGrid Platform with a PowerScribe software used by Heartland Medical Center. Upon opening a study in The ImageGrid Platform an 'open study' xml file will be created in the specified path. This will signal to PowerScribe to open the report for the that study. Once the study is signed, Powerscribe will drop a 'status' xml file. The Platform will then mark this study as signed in the ImageGrid and close the opened study.

Steps to the use of Heartland Integration

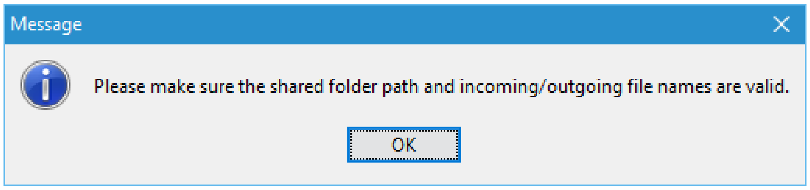
Heartland Integration has to be enabled from Manage Roles settings available to an Administrator user. Check the box for 'Heartland Integration' appearing under Tools -> Manage Roles -> Viewer -> Integration. Click the "Save Role" button to apply the settings. The settings take effect when a user with the changed role logs into ImageGrid Platform the next time.



Heartland Integration Options

The Heartland Integration process creates and drops an XML file to be read by PowerScribe as well as opening an incoming file dropped by PowesScribe. To set the integration parameters, open Tools-Options-Integation-Heartland Integration panel. The ImageGrid Platform requires the path for dropping and opening outgoing and incoming xml files. The path can be navigated into and selected by clicking the select button.

The directory and the file name of the XML file to be read need to be specified. If either of the text fields are left empty, the following error messages get displayed, when the Enable Integration box is checked.



The Incoming and Outgoing File name must end with the extension .xml.

The Enable checkbox in the option panel governs the integration process. Their operation is explained in the next section.

Heartland Integration Operation

The integration is activated by checking the Enable Integration checkbox. Basic functionality of this integration can be described as follows:

1. When enabled, upon opening of a study in ImageGrid Platform, an outgoing file 'study.xml' is created and dropped in the shared folder
2. The 'Event' is processed by PowerScribe and the study is opened in PowerScribe
3. Once the study is signed by the user in PowerScribe a status file (incoming) is dropped in the shared folder by PowerScribe
4. The status file (incoming) is scanned and if the event study signed is specified in the status file, the study is marked as "signed" in ImagerGrid

Supported XML Schema

Outgoing study.xml:

- <?xml version="1.0"?>
<ChunkData>
<Fields>
<Field1>**093H364601**</Field1> # This is the MRN
<Field6>**093H11939754**</Field6># This is the accession number.
</Fields>
</ChunkData>

Incoming status.xml:

- <?xml version="1.0" ?>
<ChunkData>
<AccessionNumber>**jjtesting**</AccessionNumber>
<Event>
<Event1>**signed**</Event1>
</Event>
</ChunkData>
-

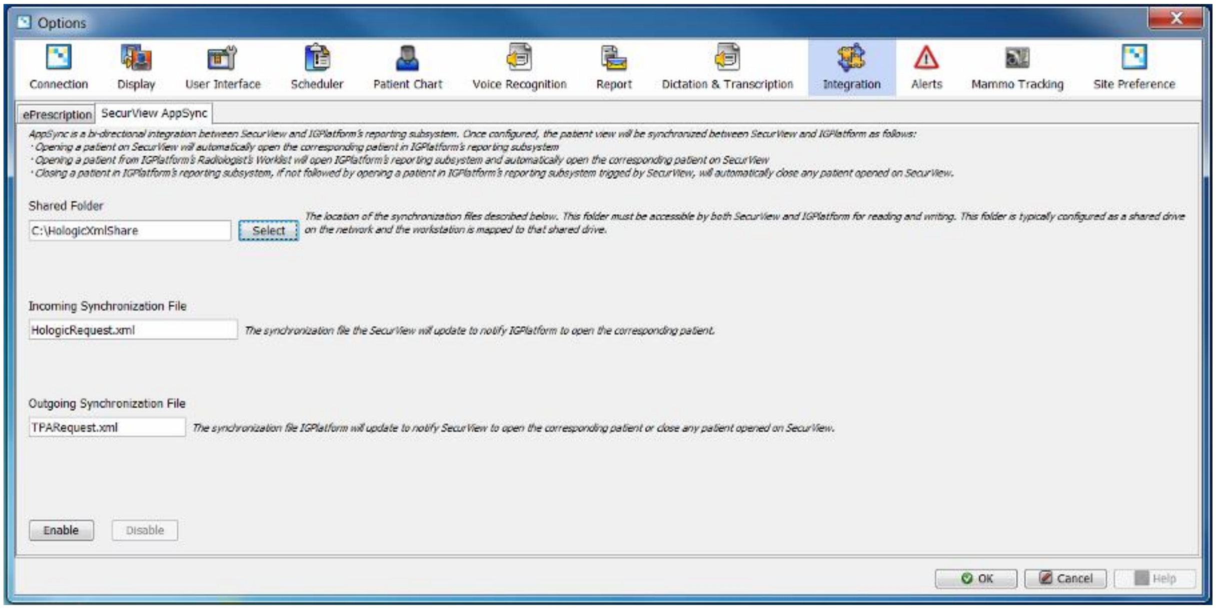
SecurView AppSync Setup

What SecurView AppSync integration will do

1. Opening a patient on the SecurView will automatically open the corresponding patient in IGPlatform's reporting subsystem.
2. Opening a patient from IGPlatform's Radiologist's Worklist will open IGPlatform's reporting subsystem and automatically open the corresponding patient on the SecurView.
3. Closing a patient in IGPlatform’s reporting subsystem, if not followed by opening a patient in IGPlatform’s reporting subsystem triggered by SecurView, will automatically close any patient opened on SecurView.

To setup SecurView AppSync

1. Create a folder under C drive and named it "HologicXmlShare"
   Note: The "HologicXmlShare" folder may need to be created in different directory. You may want to consult the technician who is responsible for the SecurView.
2. Go to Tools->Options->Integration->SecurView AppSync
3. Click "Select"
4. Select the "HologicXmlShare" folder and click "Open"
5. Click "Enable"

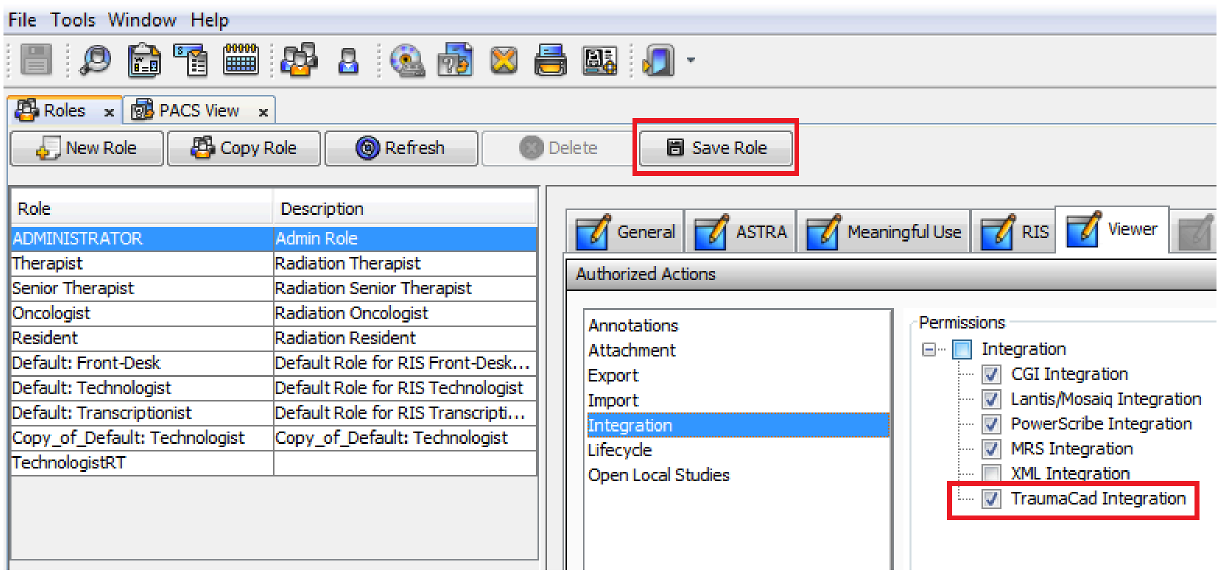


TraumaCad Integration

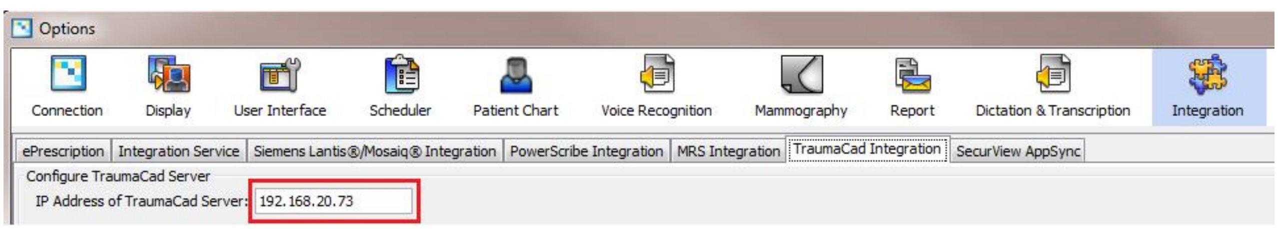
The TraumaCad Integration feature allows user to open the current study in TraumaCad client.

Procedures to use The TraumaCad Integration

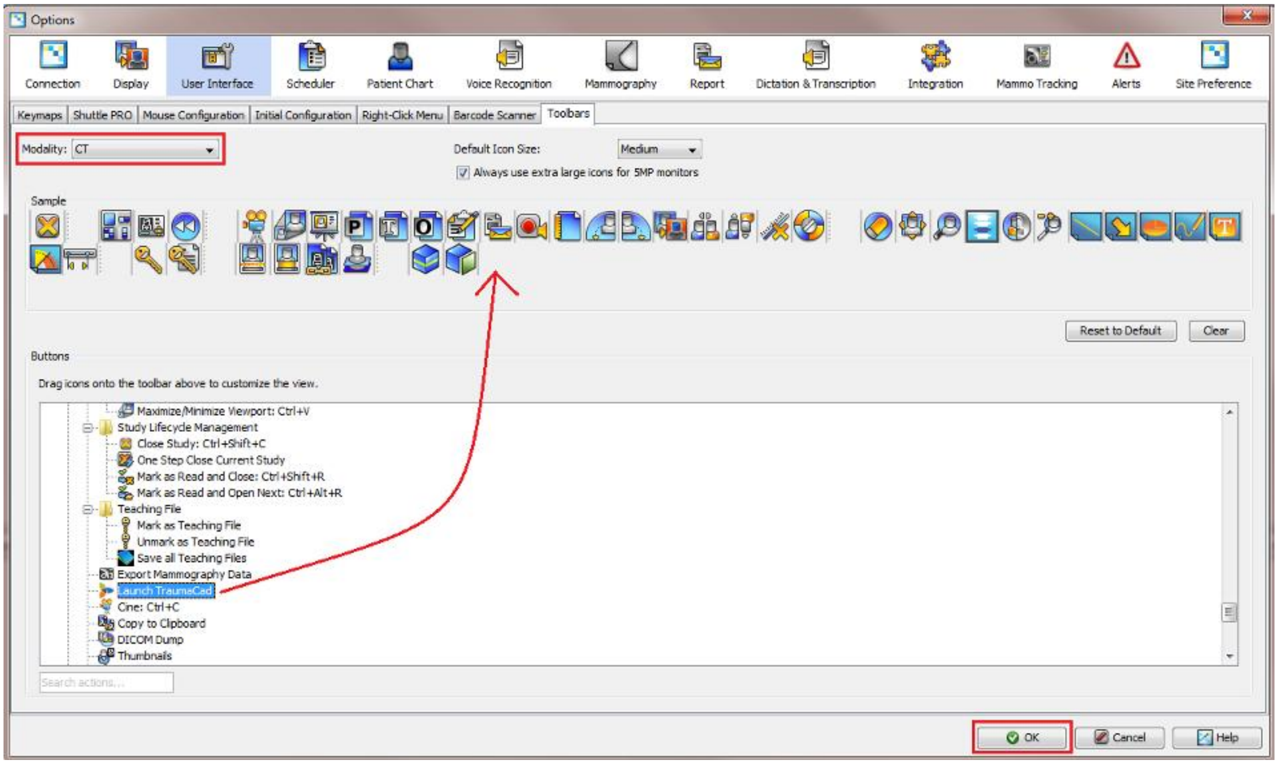
First, enable the TraumaCad integration by checking the "TraumaCad Integration" located in Roles->Viewer->Integration, then click the "Save Role" button, click "OK" when the message "Save successful. The changes will be applied the next time the affected user logs in." appears, log out from the application and log in again.



Configure the server by setting the server IP address located in Tools->Options->Integration, then select the "TraumaCad Integration" tab. The default is set to 0.0.0.0. A message dialog will appear reminding user to configure it if the server IP address is the same as the default or left empty.



In order to show the icon in the toolbar of a specific modality (TraumaCad does not support CT, MG or MRI), go to Tools->Option->User Interface, then select the "Toolbars" tab. Select a specific Modality, then scroll down the buttons list to find the "Launch TraumaCad" button, drag it to any empty space in the toolbar. Click "OK" to confirm the change.



If you open a study of the selected modality, the "Launch TraumaCad" button will show at the toolbars. If the TraumaCad client is not installed in the workstation, clicking this button will download a ClickOnce application with the default browser and install it. After the installation, click the button again. Then the TraumaCad will be launched and the study will be opened in TraumaCad automatically. If the TraumaCad client is already installed, the study will be opened in TraumaCad when the "Launch TraumaCad" button is clicked.

Tips

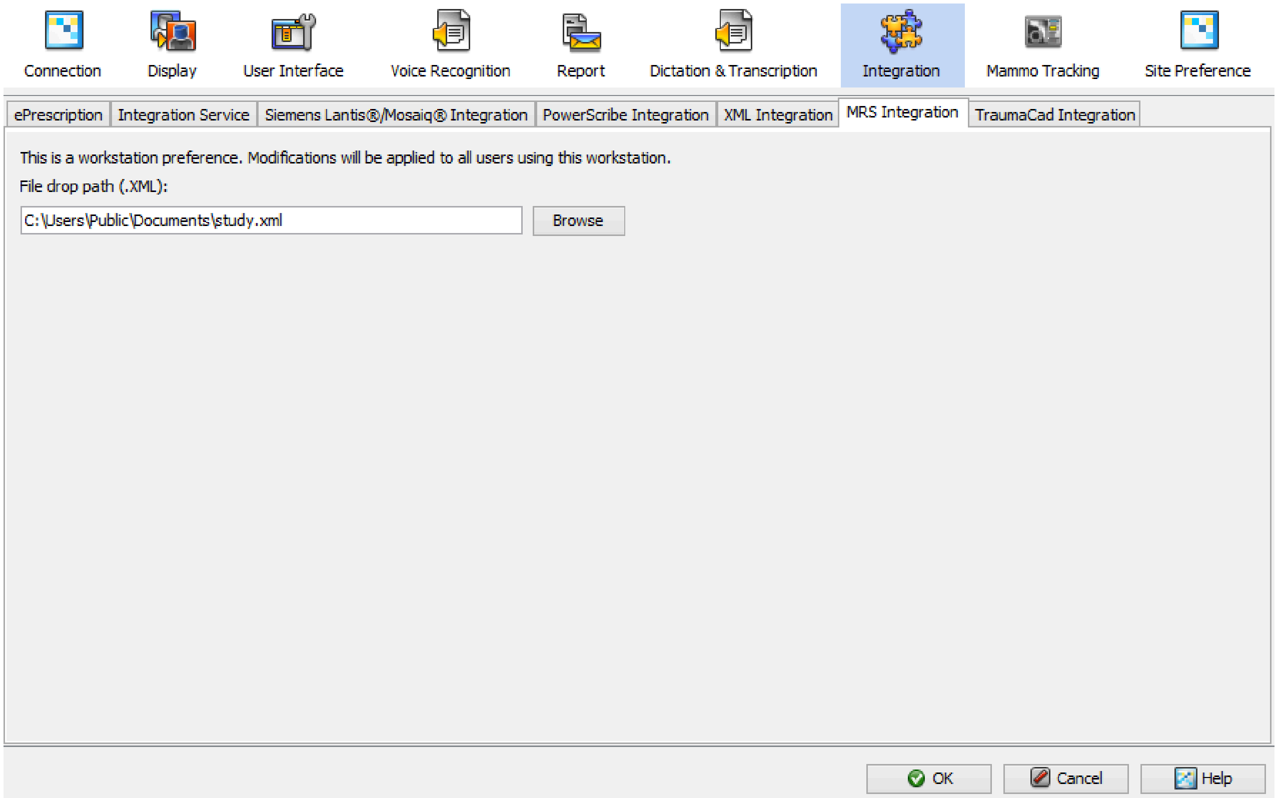
Please note that only Internet Explorer (IE) is natively built to launch the ClickOnce files. Other browsers need plugin (e.g., Microsoft .NET Framework Assistant for Firefox and Meta4 ClickOnce Launcher for Google Chrome) to support the launching of ClickOnce applications. Without the plugins, browsers other than IE will always download the installation file every time the "Launch TraumaCad" is clicked.

MRS Integration

The MRS Integration feature allows a user to create an XML file containing the accession number and patient ID of the selected study from the ImageGrid Viewer.

MRS Integration Options

MRS Integration options panel is located under Tools -> Options -> Integration -> MRS Integration. The path of the XML file to be generated can be set from this tab.



MRS Schema

Below is an illustration of an MRS schema:

- MRS

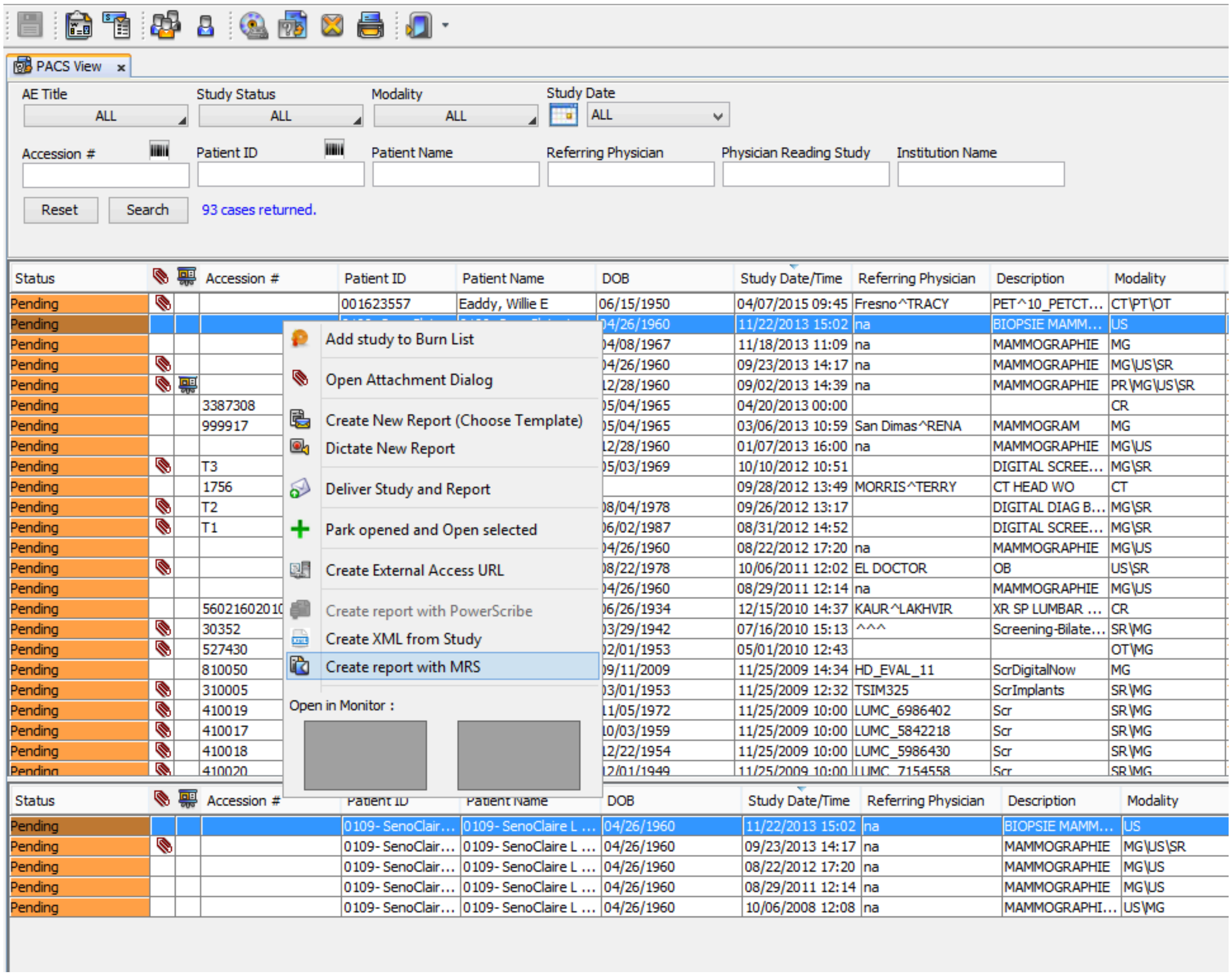
  <Message>

  <AccessionNumber>1357</AccessionNumber>
  <PatientID>12345</PatientID>

  </Message>

Creating an MRS file

An MRS file can be created using the right click menu of the PACS View.

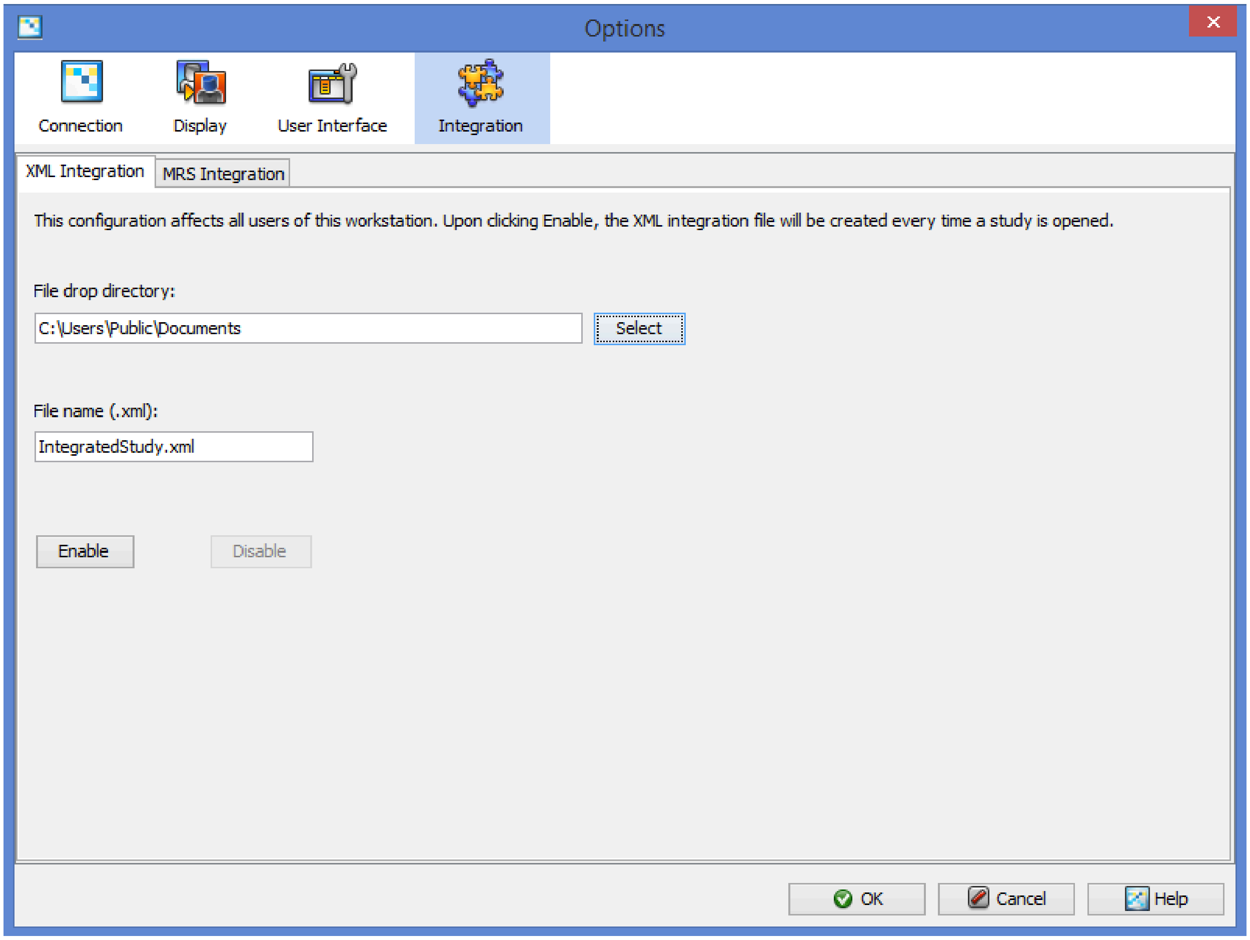

PACS View
AE Title
ALL
Study Status
ALL
Modality
ALL
Study Date
ALL
Accession #
Patient ID
Patient Name
Referring Physician
Physician Reading Study
Institution Name
Reset
Search
93 cases returned.
Status
Accession #
Patient ID
Patient Name
DOB
Study Date/Time
Referring Physician
Description
Modality
Add study to Burn List
Open Attachment Dialog
Create New Report (Choose Template)
Dictate New Report
Deliver Study and Report
Park opened and Open selected
Create External Access URL
Create report with PowerScribe
Create XML from Study
Create report with MRS
Open in Monitor :

XML Integration

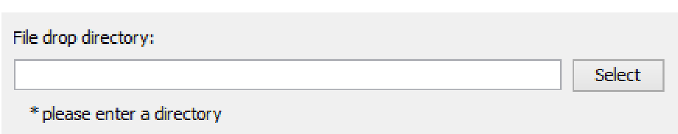
The XML Integration feature allows the user to create an XML file containing the metadata of the selected study from the ImageGrid Viewer.

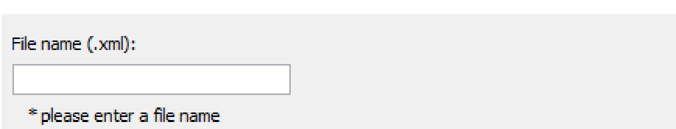
XML Integration Options

The XML Integration option panel allows the user to customize the XML Integration feature. If the user has XML Integration permission, the option panel can be found under Tools -> Options -> Integration.

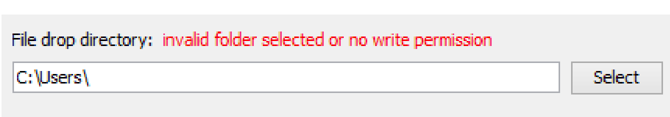


The directory and the file name of the XML file to be created need to be specified. If either of the text fields are left empty, the following warning messages get displayed.





The specified file drop directory must exist on the computer and the user must have write permissions for the same.



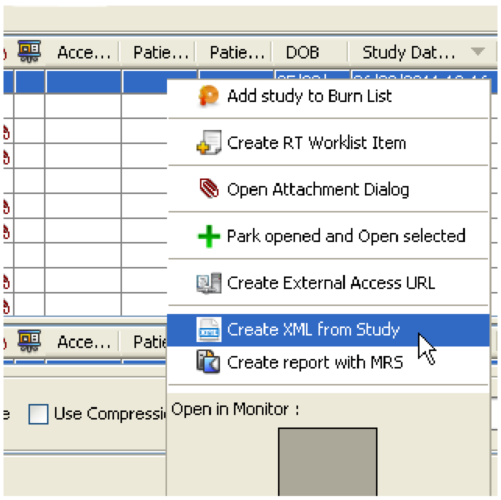
The specified file name must end with the extension .xml.

The Enable and Disable buttons in the option panel help govern the creation of the XML integration file. Their operation is explained in detail in the next section.

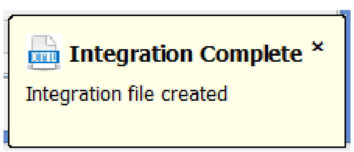
Creating the XML file

The user has a choice of automatically creating the XML file. If the Enable button in the option panel is clicked, an XML file is generated automatically when a study is opened and it is stored at the provided path. The automatic creation could be deactivated by clicking the Disable button.

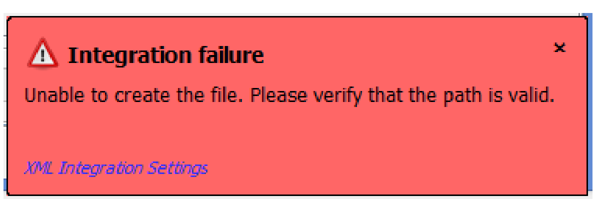
The XML file can also be created manually from the right click menu of the PACS View.



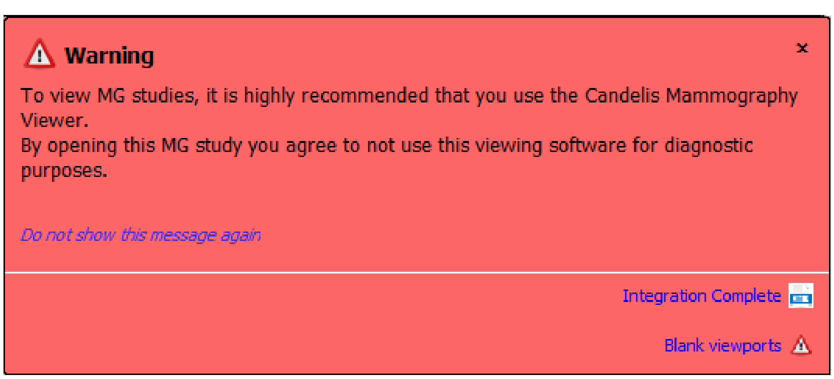
If the file is created successfully, a notification gets displayed in the right-bottom corner of the ImageGrid Platform.



Otherwise, if the integration is unsuccessful, the following notification is displayed with a link to the XML Integration option panel.



It is possible that multiple notifications need to be displayed at the same time. For example,



In such a case, the user can still view the details of a particular message by clicking on the appropriate title.

XML Schema

Below are the supported XML schema:

- Default XML

```
<Data>

<PatientName>DOE^JANE</PatientName>
<PatientID>12345</PatientID>
<PatientSex>F</PatientSex>
<PatientBirthDate>19570101</PatientBirthDate>
<AccessionNumber>1357</AccessionNumber>
<InstitutionName>Hospital</InstitutionName>
<Modality>MG</Modality>
<ReferringPhysicianName>SMITH^ADAM</ReferringPhysicianName>
<BodyPartExamined>BREAST</BodyPartExamined>
<StudyDate>20110702</StudyDate>
<StudyTime>140457</StudyTime>
<StudyDescription>Screening</StudyDescription>

</Data>
```

- MRS

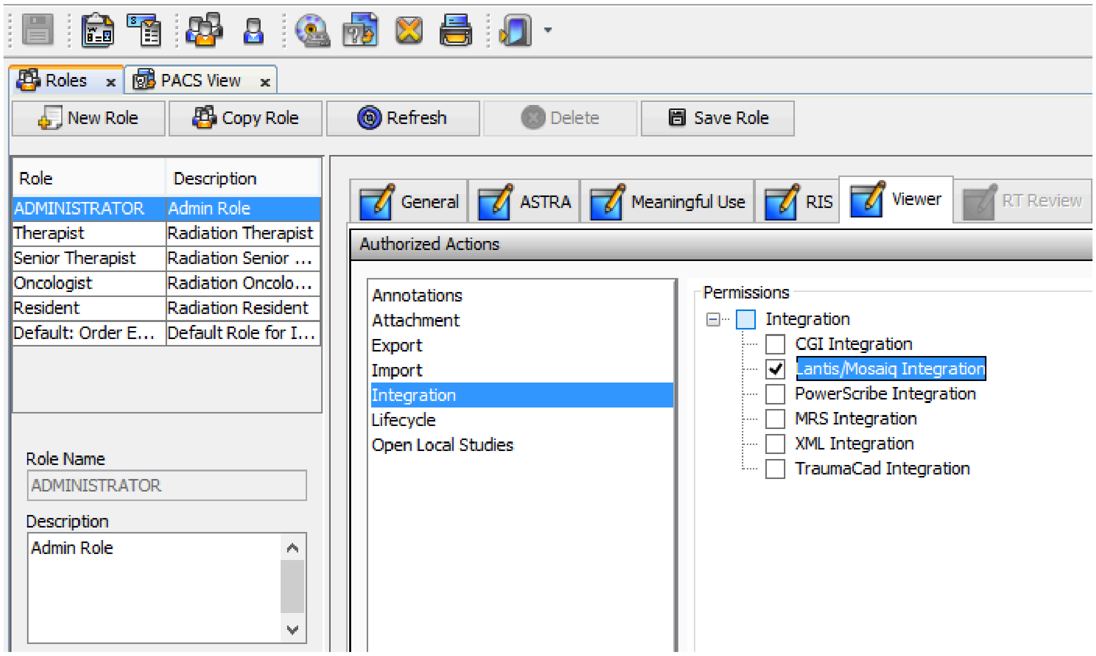
```
<Message>

<AccessionNumber>1357</AccessionNumber>
<PatientID>12345</PatientID>

</Message>
```

Lantis/Mosaiq Integration

The Lantis/Mosaiq Integration feature allows a user to synchronize the selected patient in Lantis/Mosaiq with the selected patient in the ImageGrid Viewer.

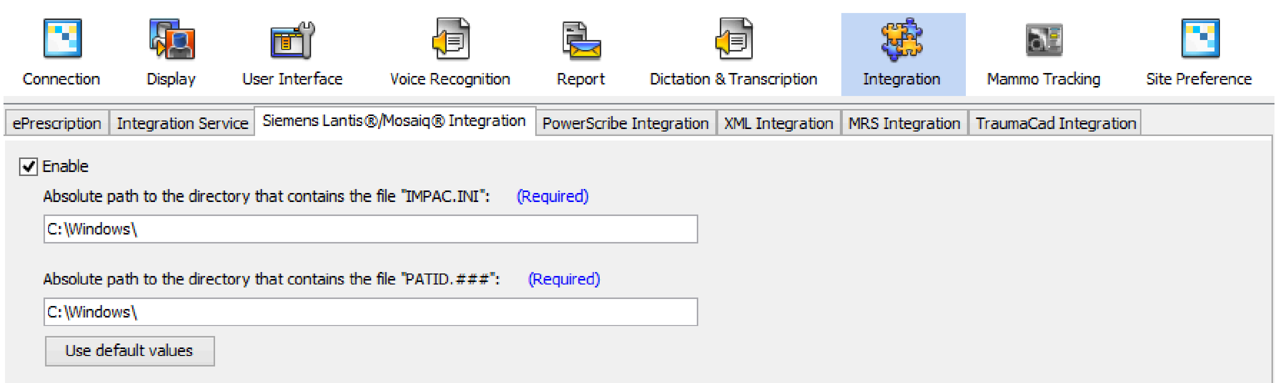
Steps to enable the use of Lantis/Mosaiq Integration

Lantis/Mosaiq Integration has to be enabled from Manage Roles settings. Check the box for "Lantis/Mosaiq Integration" appearing under Tools -> Manage Roles -> Viewer -> Integration. Click the "Save Role" button to apply the settings. The settings take effect when a user with the changed role logs in the next time.



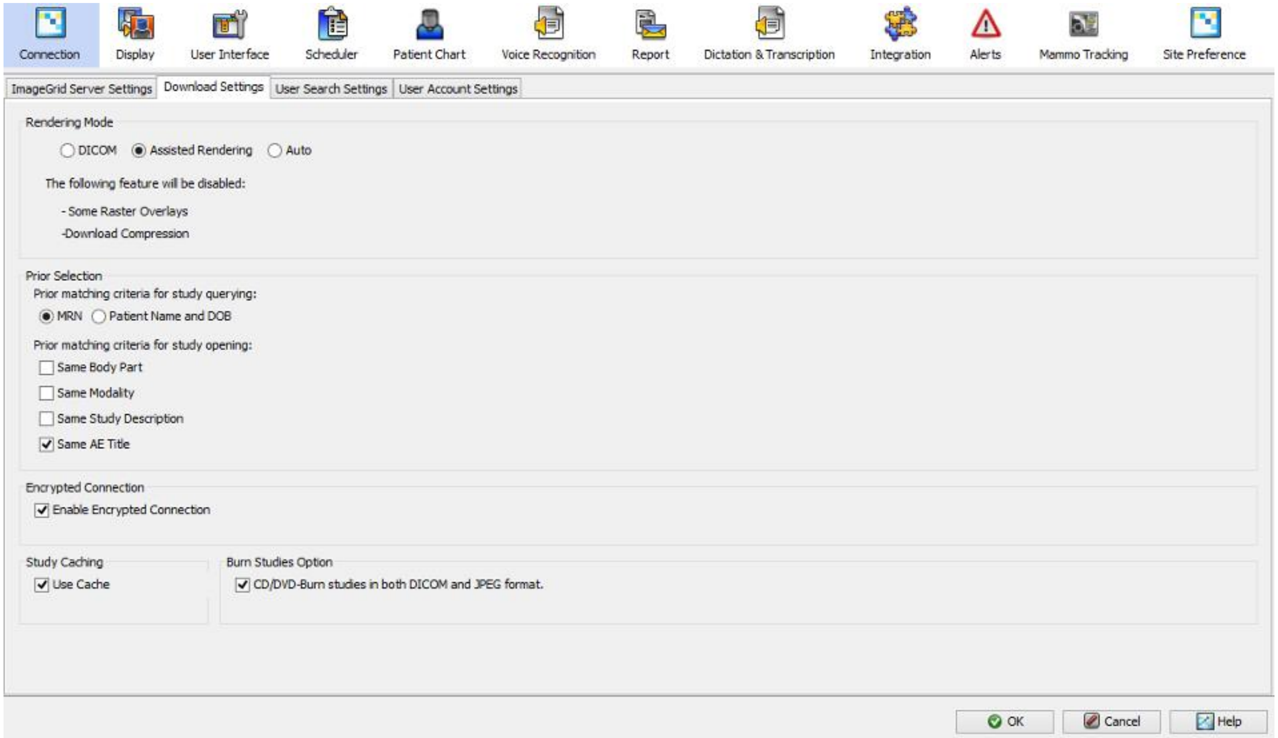
Lantis/Mosaiq Integration Options

Lantis/Mosaiq Integration can now be enabled from Tools -> Options -> Integration -> Lantis/Mosaiq Integration. In addition, the paths to the IMPAC.INI and PATID.### files can be modified.



Download Settings

The download settings options page is shown below.



Rendering Mode

This selection will change the way studies are downloaded from the server.

- DICOM: The client will download the original DICOM files
- Assisted Rendering: The client will download a pre-rendered version of the DICOM files
- Auto: Images will be pre-rendered if downloading from a radiology worklist. On the other hand, if a study is opened through PACS View panel, the original DICOM files will be downloaded.

Prior Selection

This selection allows the user to choose which criteria will be used when deciding which studies are considered to be prior studies.

- MRN (i.e. Patient ID)
- Patient Name and DOB

This selection allows the user to choose which criteria will be used when deciding which priors should be opened when opening study with priors.

- Same Modality
- Same Body Part
- Same Study Description
- Same AE Title

Encrypted Connection

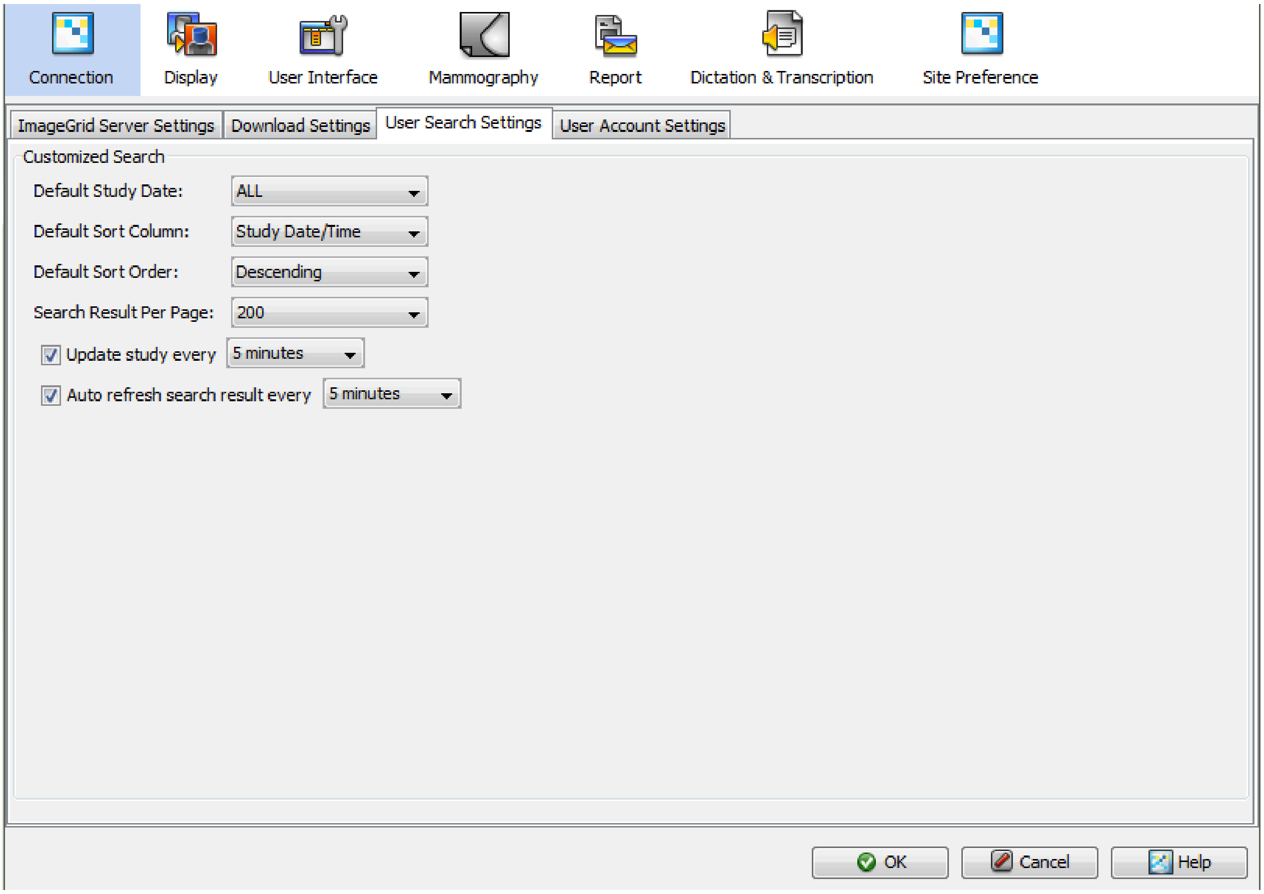
If this feature is enabled, all medical imaging studies will be encrypted in transit to the viewer. Disabling this feature might result in improved download speeds, however, disabling it is not recommended in WAN scenarios for security reasons.

Burn Studies Option

This option enables a user to set the CD/DVD burning behavior. If the box is unchecked, then only DICOM images in a study will be burnt to the CD/DVD and JPEG images will not be burnt. If it is checked, DICOM and JPEG images of the study along with radiology final reports (if any) and a compact viewer will be burnt to the CD/DVD.

Search Settings

The search settings options page is shown below.

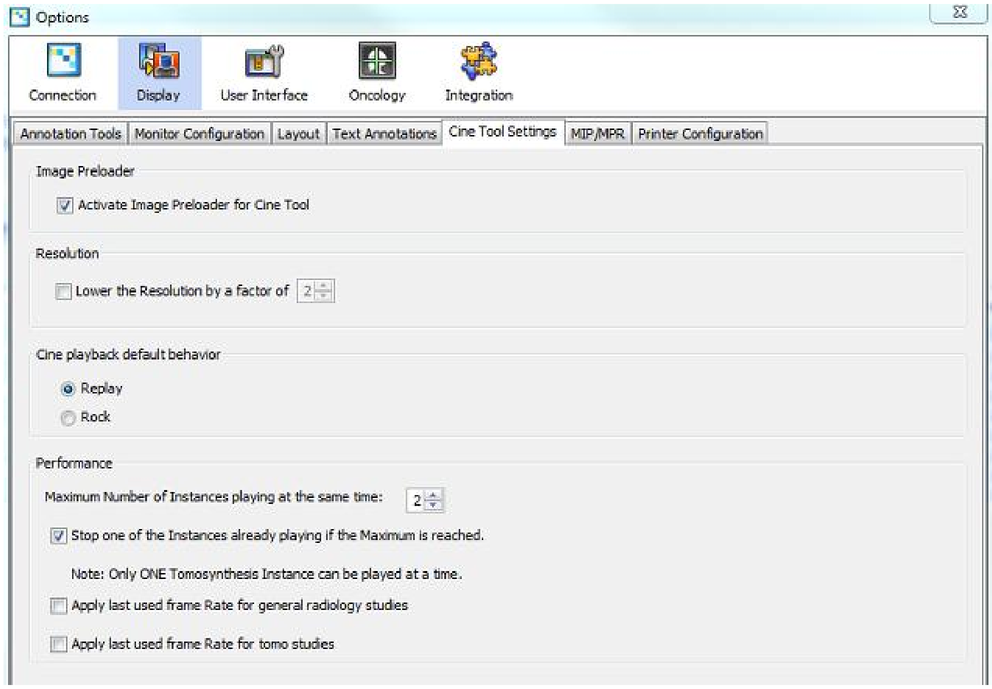


From here, the user can customize their default search parameters: study date, study status, sort column and sort order. The user can also set the search result limit and number of search results displayed per page.

In addition, the user can enable and disable search and radiology worklist updates and the refresh interval for search updates.

Cine Tool Settings

The Cine Tool Settings panel is shown below.



1.) Image Pre-loader

This checkbox allows the user to activate the Image Pre-loader. When the image pre-loader is active all the images on that series will be loaded before the cine tool starts being played.

This is recommended to avoid potential stuttering when playing a series of images for the first time.

2.) Resolution

This checkbox allows the user to downgrade the resolution for the Cine Tool.

A lower resolution will decrease the time taken to preload images, but may result in lower playback performance.

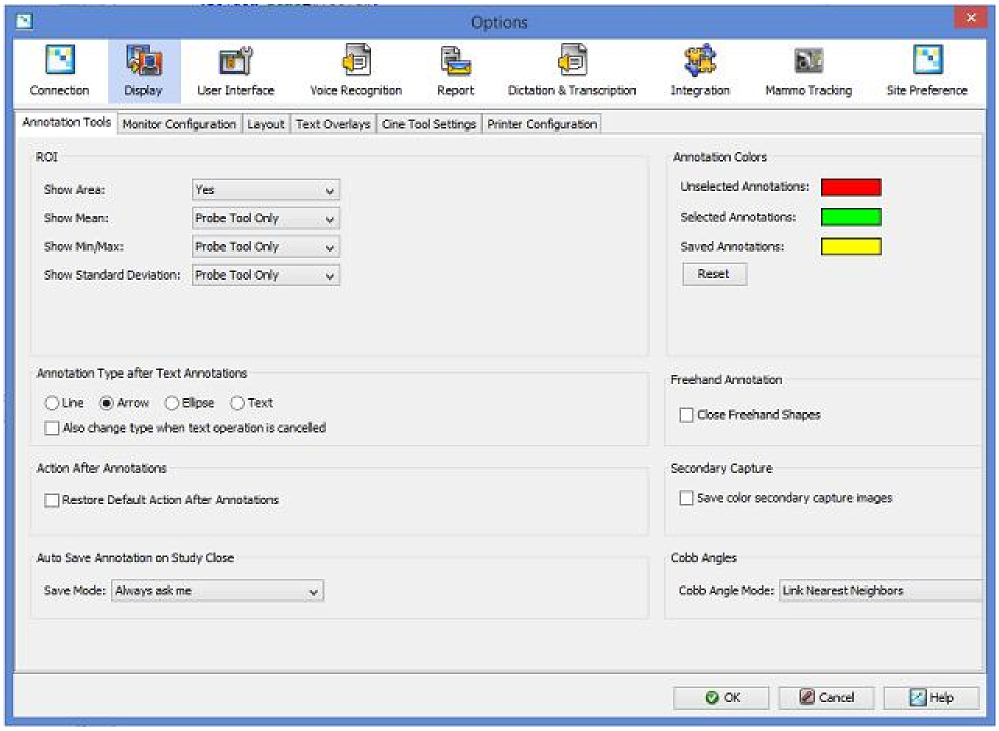
3.) Performance

This checkbox allows the user to set the behavior of the Cine Tool.

The user can set the Maximum Number of Instances playing at the same time (up to 4). We recommend to set this to a value lower or equal to the number of cores of the workstation. Once the maximum is reached the user can also customize the behavior for the Cine Tool when a new instance is started.

Annotation Tools Settings

The Annotation Tools Settings panel is shown below.



1.) ROI

These four drop down lists allows users to select which information of ROI calculations they wish to view alongside ellipse annotations and probe tool.

2.) Annotation Type After Annotate Text

It may be desirable to change the annotation mode to another mode after making a text annotation. Here, the user can choose a mouse mode to be selected after a text annotation has been made.

3.) Cobb Angles

There are three different Cobb Angle modes:

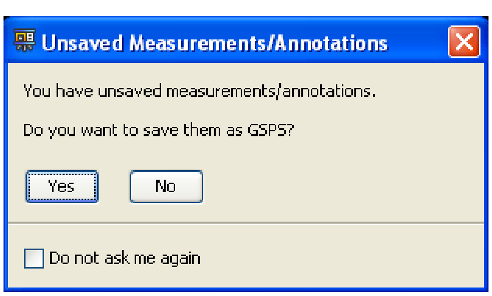
- Default (Selected Line): Display the Cobb Angles taking as a reference to the selected line.
- Link nearest neighbors: Display the Cobb Angles between nearest neighbors
- None: Do not display Cobb Angles

4.) Auto Save Annotation on Study Closing

When the user closes the study with unsaved annotations, there are three courses of action:

- Auto Save as GSPS
- Discard
- Always Ask Me

If the user selected "Always Ask Me", a dialog will pop up every time a study is closed with unsaved annotations.



5.) Secondary Capture

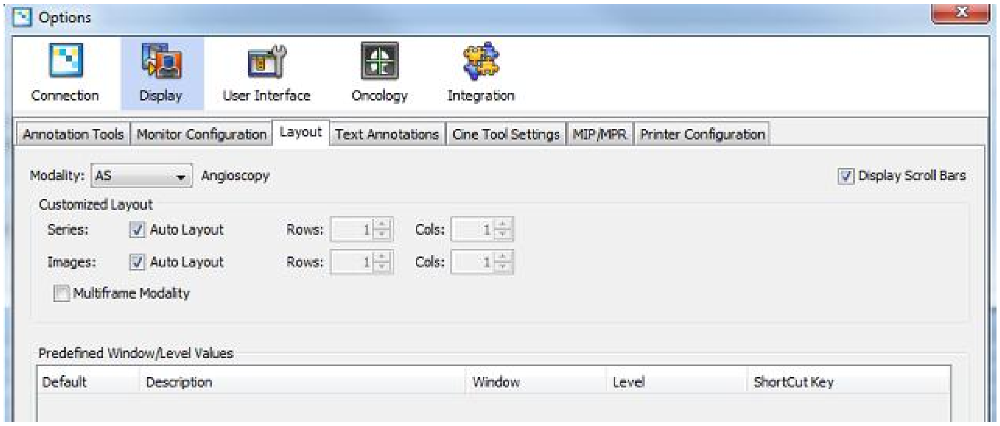
The user may choose to save annotations in color for secondary capture images.

6.) Annotation Colors

The colors which are used to display annotations can be configured here. Users can set different colors for unselected, selected and saved annotations separately. To configure a color, click the little box and choose a color from the color chooser.

Layout Settings

The Layout Settings panel is shown below:



1.) Modality Selector

This drop-down allows the user to select the modality whose settings they wish to edit.

2.) Customized Layout

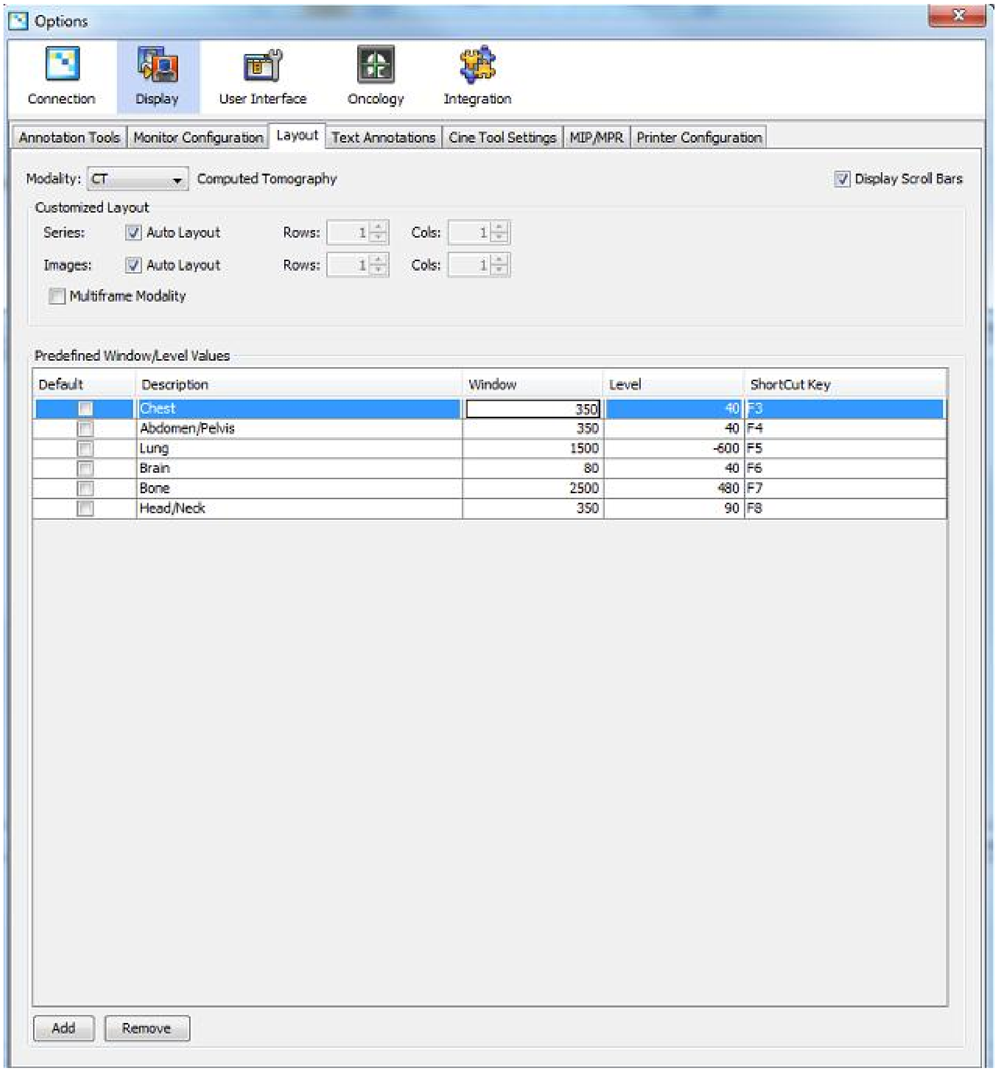
This section allows the user to specify a preferred layout for the series and instances of the selected layout.

3.) Predefined Window/Level Table

This table allows the user to create custom window and level presets for the selected modality and specify one of them as a default.

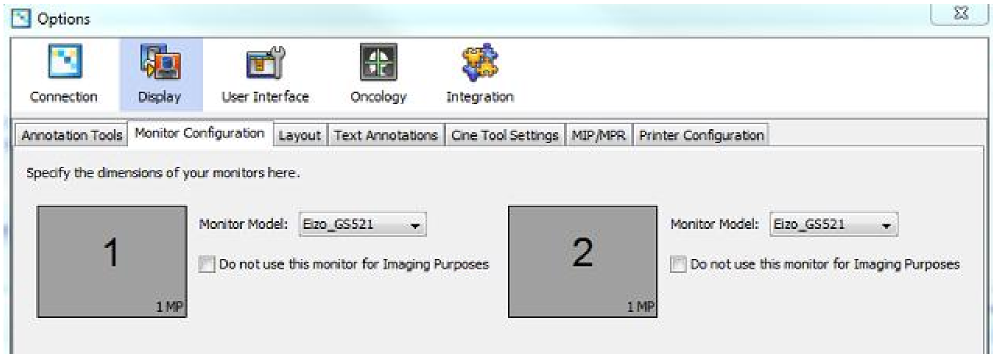
Click on Add button to add a new entry into table for the selected modality. Click on each column to edit the corresponding value.

Click on Remove button to remove the selected row in the table.


Options
Connection
Display
User Interface
Oncology
Integration
Annotation Tools
Monitor Configuration
Layout
Text Annotations
Cine Tool Settings
MIP/MPR
Printer Configuration
Modality: CT
Computed Tomography
Display Scroll Bars
Customized Layout
Series:
Auto Layout
Rows: 1
Cols: 1
Images:
Auto Layout
Rows: 1
Cols: 1
Multiframe Modality
Predefined Window/Level Values
Default
Description
Window
Level
ShortCut Key
Chest 350 40 F3
Abdomen/Pelvis 350 40 F4
Lung 1500 -600 F5
Brain 80 40 F6
Bone 2500 480 F7
Head/Neck 350 90 F8
Add
Remove

Monitor Configuration

The Monitor Configuration panel is shown below.



Here, the manufacturer and model of each of your monitors may be specified. This is necessary to ensure that tools such as **True Size** viewing function as intended.

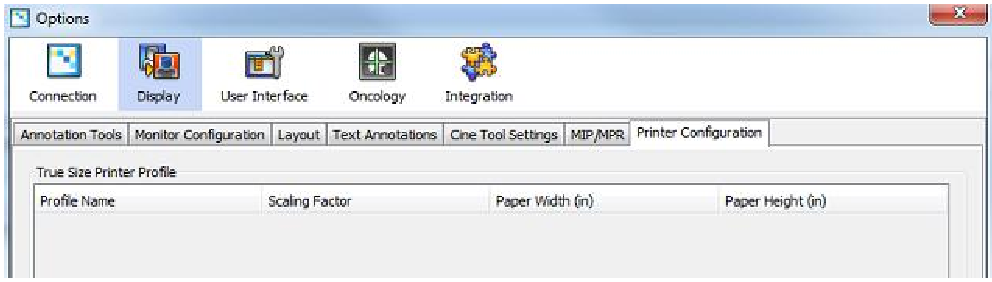
On the right side of each monitor icon, select the manufacturer and model of the corresponding monitor.

If your monitor does not appear on the list, select Custom Model, and specify the diagonal length of the monitor in inches below.

The user can select, as well, whether a monitor is enabled to show Study Images or not.

Printer Configuration Panel

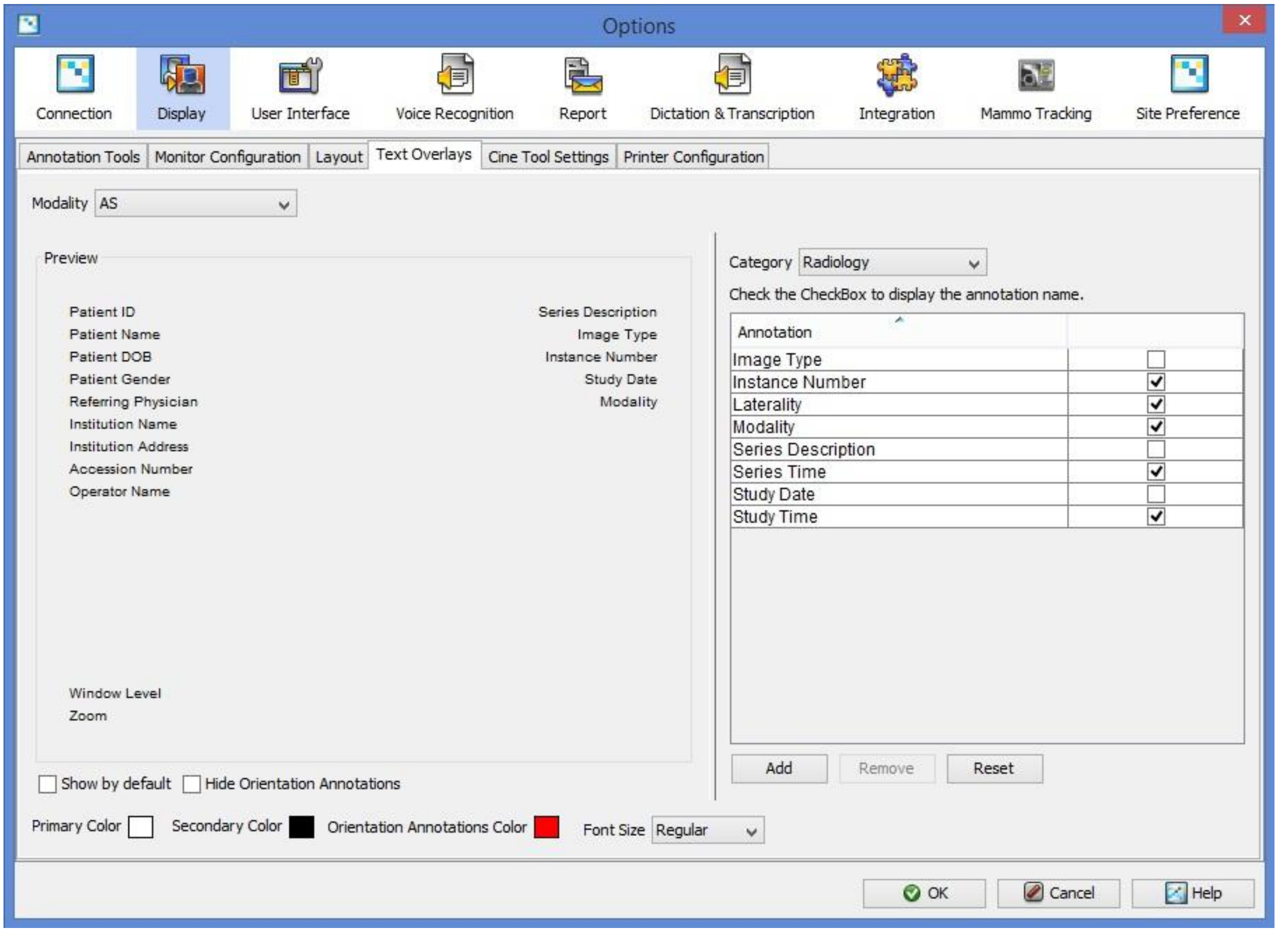
The Printer Configuration Panel is shown below:



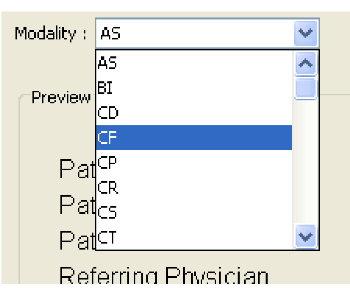
Please refer to the 'Print Image' section of the help in order to use this feature.

Text Overlay

Text overlays of the image is customizable by a drag-and-drop interface. You may choose which text overlays to be displayed and where to display them.

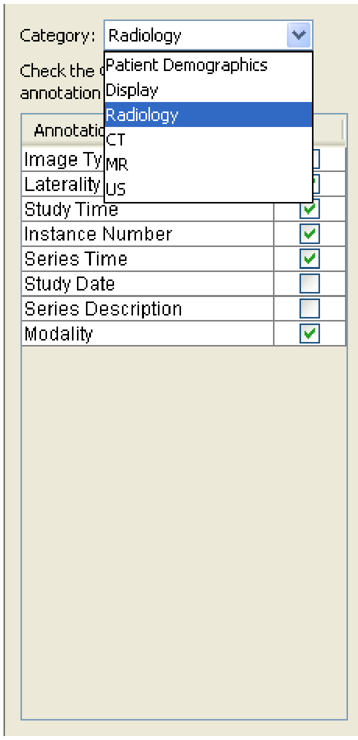


The overlays are organized by modality and you can select the modality using the modality Combo Box.



Once the modality is selected, overlays will be displayed in the preview area. Overlays are draggable and you can drop them anywhere in the preview panel or drag them out to the right box for removal. overlays automatically snaps on to the nearest corner of the preview panel.

The list of available overlays are grouped by different categories. You can select a category to see text overlays under that category.



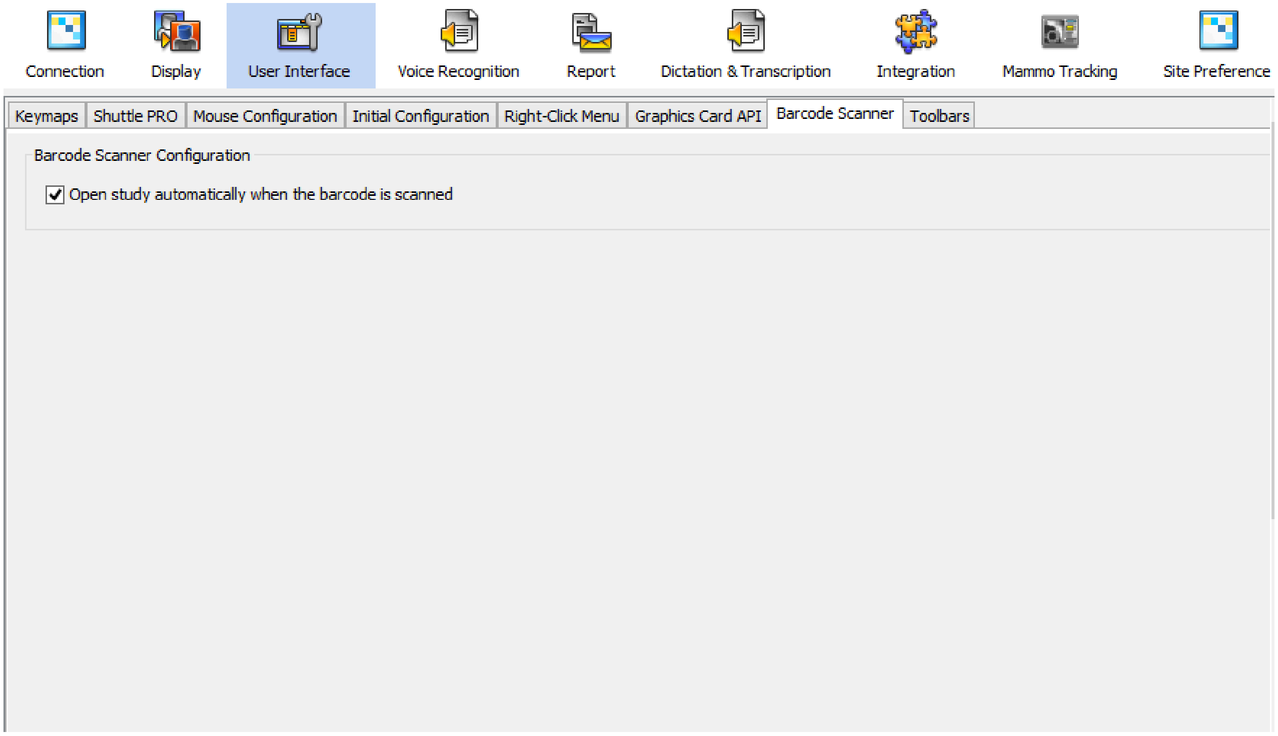
Color of the overlays can be selected by the color chooser button.

There are two colors: primary and secondary. The primary color text gets rendered on top of the secondary color.

You can reset the overlays using the reset button.

Barcode Scanner

The Barcode Scanner settings are available under Tools -> Options -> User Interface.

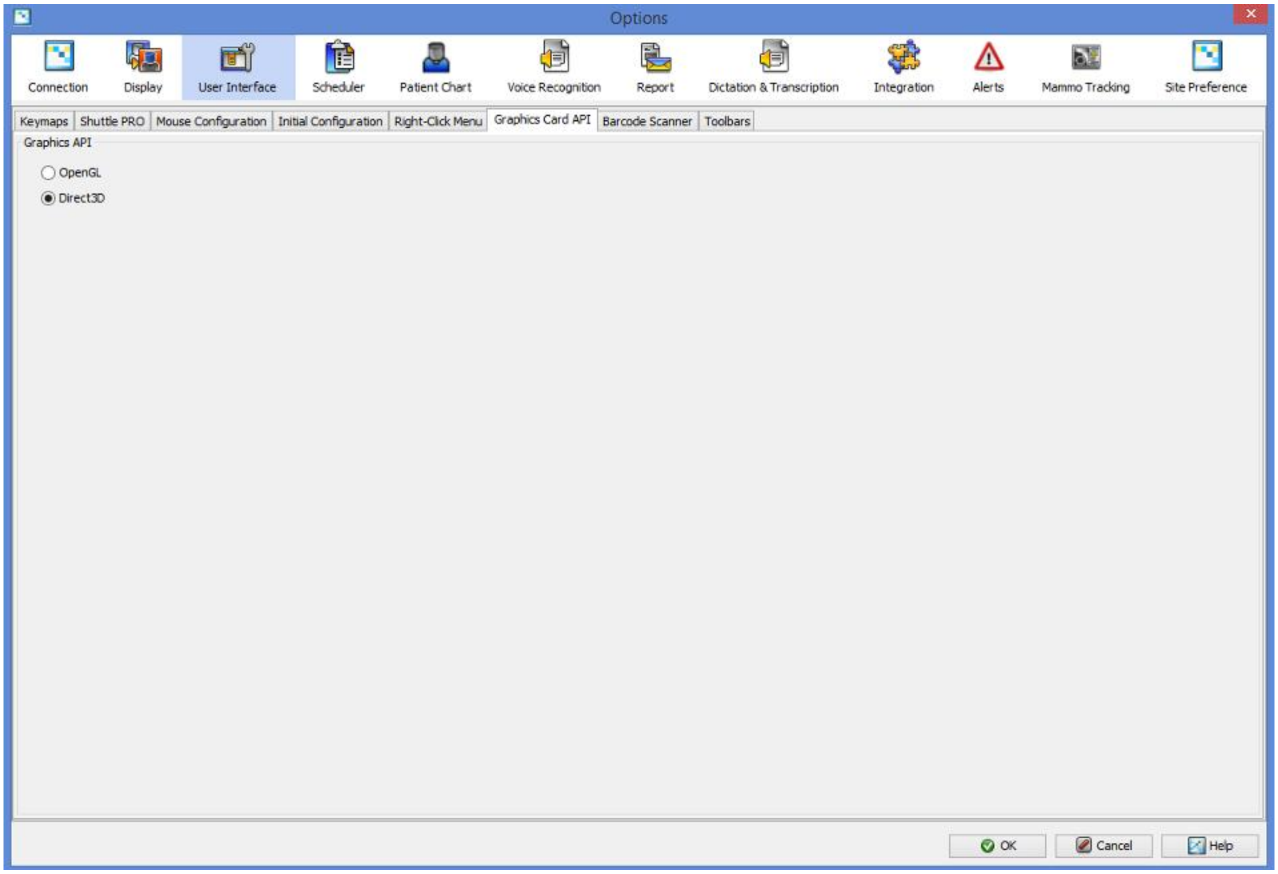


A scanner can be used to read the Accession Number or the Patient ID for a study from a barcode.

The study can be opened automatically after scanning the barcode if the box is checked.

Graphics Card API Settings

The Graphics Card API Settings Panel is shown below:

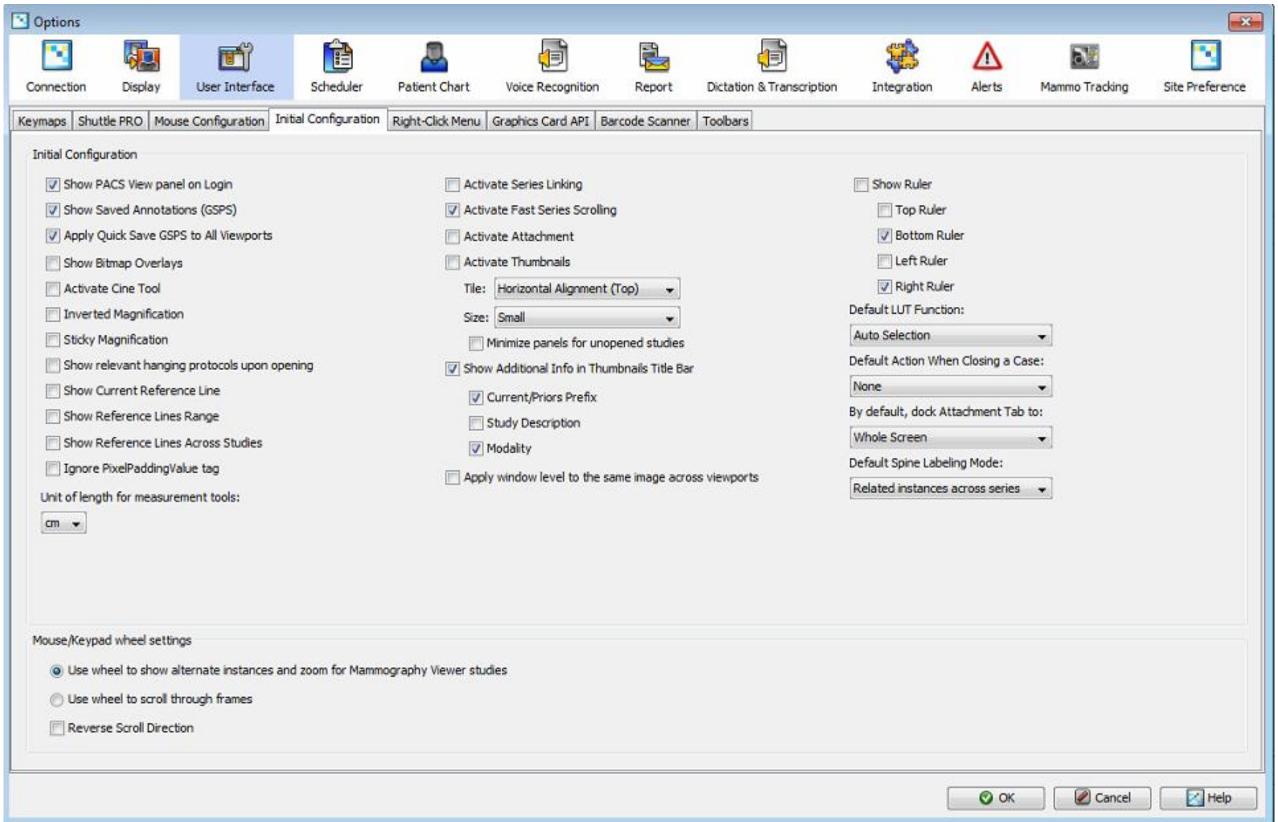


From here the user may configure the default graphics card API.

Note that Direct3D is only supported in Windows, and OpenGL is supported by both Mac OS and Windows.

Initial Configuration Settings

The Initial Configuration Settings Panel is shown below:



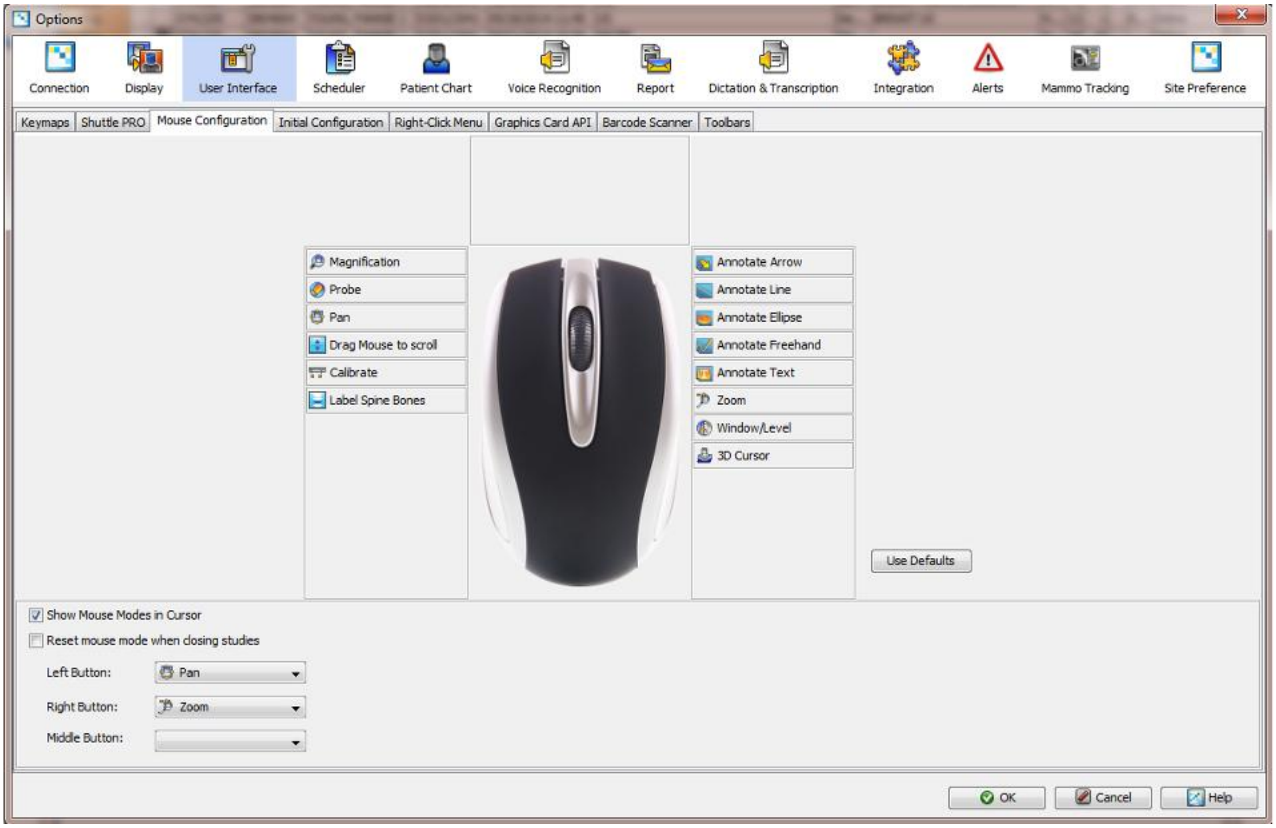
From here the user may configure the default values for a selection of application settings. These values will be reset every time the user opens a new study.

- Activate Fast Series Scrolling: This feature allows the user to quickly scroll through the series but may skip instances.
- Default LUT Function: This feature allows the user to choose a default LUT calculation to use when studies with VOILUT data have been opened.
- This additional information can be displayed in the thumbnails title bar besides study date/time.

Mouse Configuration

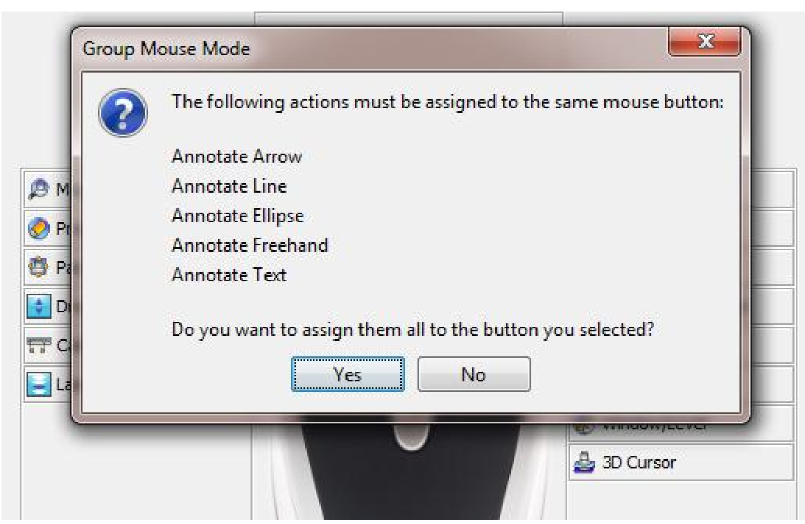
Mouse Configuration Panel

The Mouse Configuration Panel is shown below:



The viewer can perform mouse clicking/dragging actions with the left mouse button, right mouse button, or the middle mouse button. Users can configure these settings from this panel. To do so, simply drag the actions into the desired boxes.

Some actions belong to a single actions group, which means that all of them must be assigned to the same mouse button. When a user tries to change only one of those actions, a warning message will pop up to let the user either cancel the change or automatically move all actions of that group to the new mouse button.

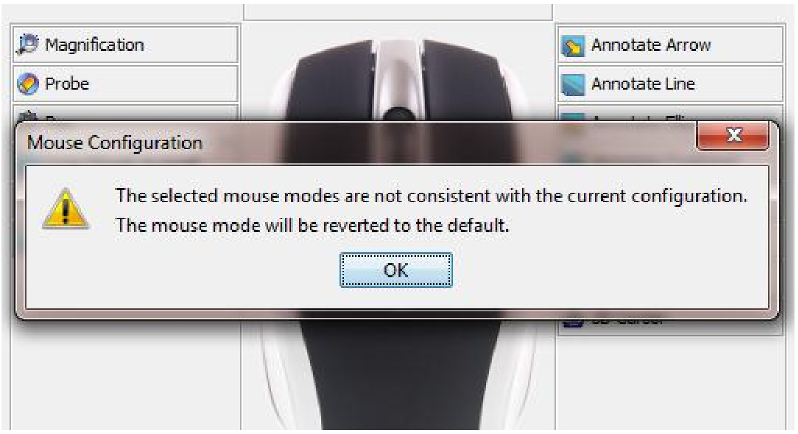


The reset button on the right will restore the actions in the three boxes to the default settings.

On the bottom of the panel, users can reset the mouse mode to default when closing a study. If it is selected, users can also set the default actions for each button.

Please note that the mouse mode will be affected by dragging and dropping actions in the upper panel. For example, when the "Zoom" action is assigned to the "Right Button" , then the "Zoom" action is dragged and dropped to the left or top box, the "Zoom" action will be moved from the combo box of the "Right Button" to the corresponding combo box. Then the next available action (in this case, the "Annotate Arrow" action) will be assigned to the "Right Button".

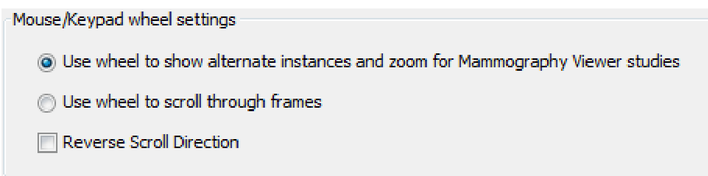
If an action that the user assigns to a button is not in the dropdown menu of the corresponding combo box (it might be dragged and dropped to a different box in the upper panel), the mouse mode will be reverted to the default after the user clicks the "OK" button at the bottom of the Options panel. The following warning message will show up as well.



The user can also show the mouse modes for the mouse cursor by checking the "Show Mouse Mode in Cursor". Two smaller extra icons will be added to the pointing arrow icon in the mouse cursor. The one on the bottom right corner will represent the right-click mouse mode and the one on the bottom left corner will represent the left-click mouse mode.

Mouse/Keypad Wheel Settings

The Mouse/Keypad wheel settings in the Initial Configuration panel provide two options for multiframe studies and Mammography studies, respectively.



For multiframe studies,
Option 1 (default): mouse wheel to scroll through the instances, Ctrl + mouse wheel to scroll through the frames.
Option 2: Ctrl + mouse wheel to scroll through the instances, mouse wheel to scroll through the frames.

For Mammography studies,
Option 1 (default): mouse wheel to zoom the image, Ctrl + mouse wheel to scroll through the frames, Shift + mouse wheel to scroll through related instances/priors.
Option 2: mouse wheel to scroll through the frames, Ctrl + mouse wheel to zoom the image, Shift + mouse wheel to scroll through related instances /priors.

When the "Reverse Scroll Direction" is checked, the viewport will go to next image when mouse wheel scrolls up.

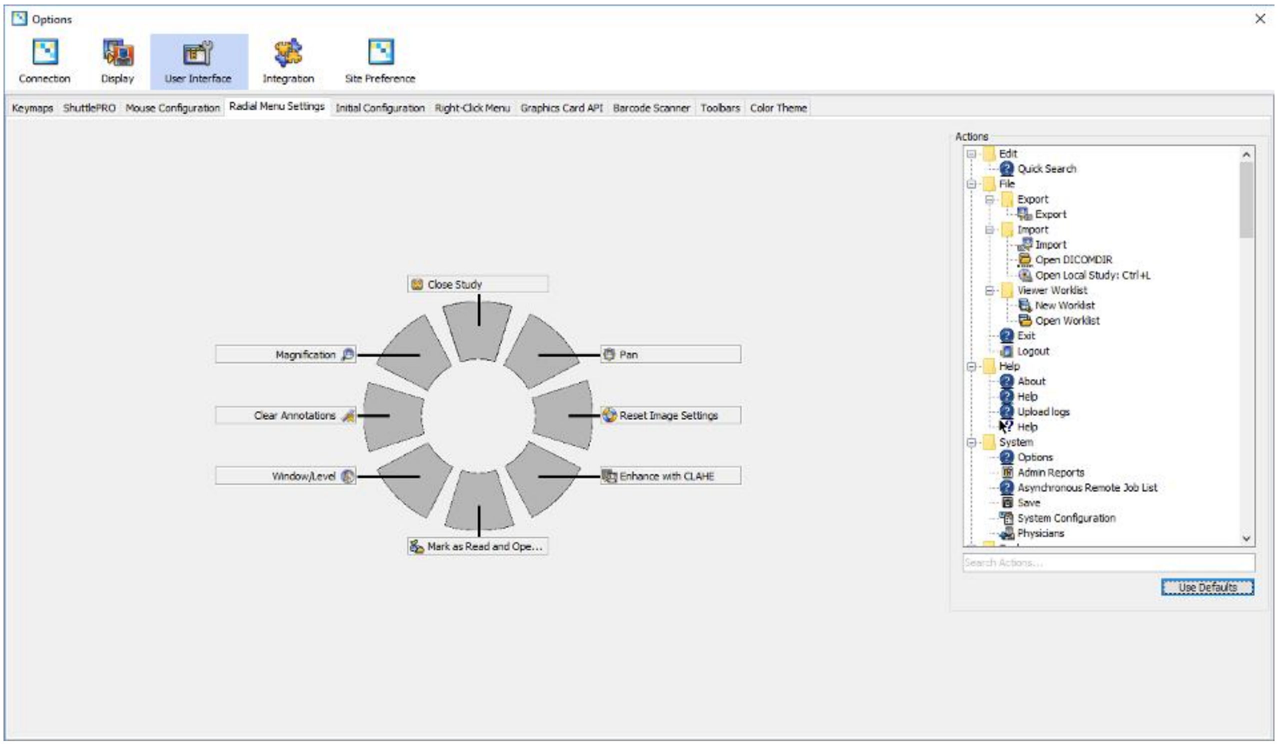
The above options apply to both ShuttlePRO and mouse.

Radial Menu Settings

Radial Menu, a GUI feature, presents the user with a circular right-click menu with some pre-defined actions assigned to each section of the circle. It is offered as an alternative to the regular right-click pop-up menu that displays actions in the form of a list.

Use of the Radial Menu feature can be enabled from the Right Click Menu Settings.

A settings panel allows users to customize the Radial Menu. This panel can be found under Tools → Options → User Interface → Radial Menu.



A radial menu has eight sections and each section can have an action associated with it. A list of available actions, categorized according to their types, is displayed in the panel on the right.

Assign an action to a section of the menu

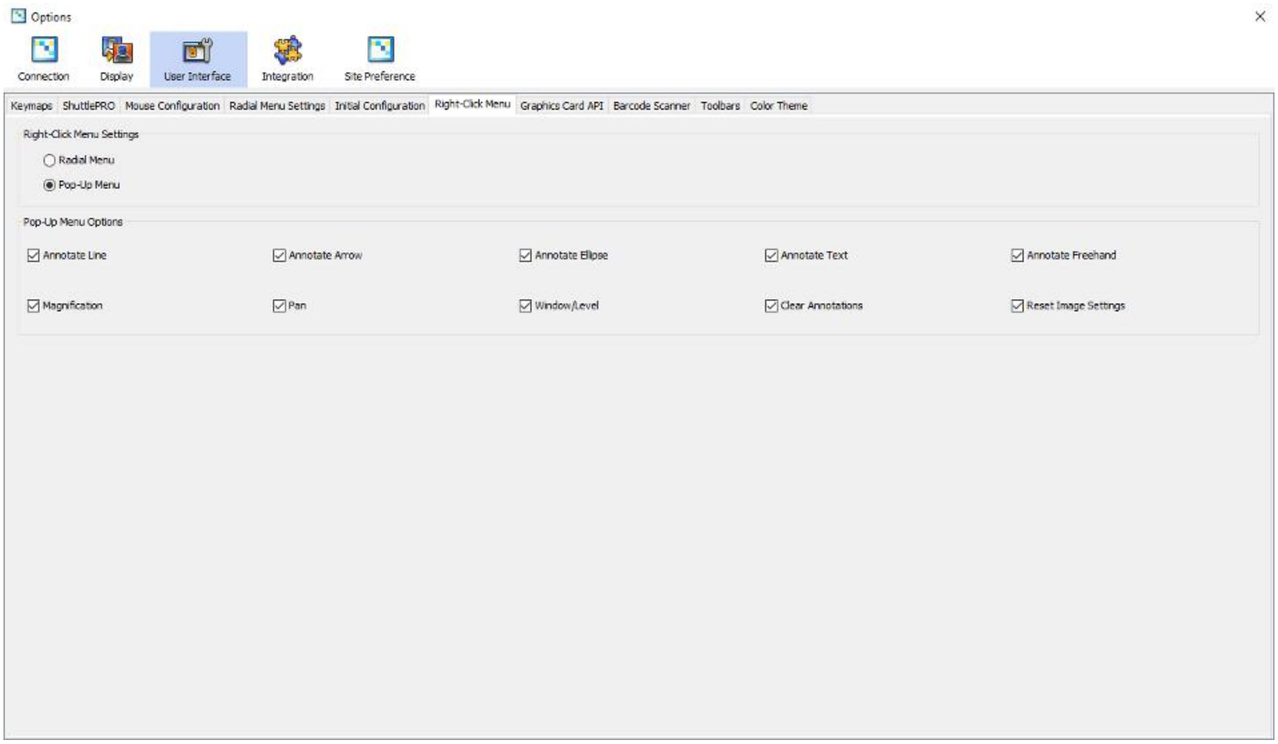
Any action can be assigned to a section by dragging it from the list on the right and dropping it onto a label close to the desired section. An action can be searched by entering its name in the text field present just below the list.

Reset to default settings

All radial menu actions can be reset to their default value by clicking on the 'Use Defaults' button.

Right Click Menu Settings

The right click menu settings panel is shown below:



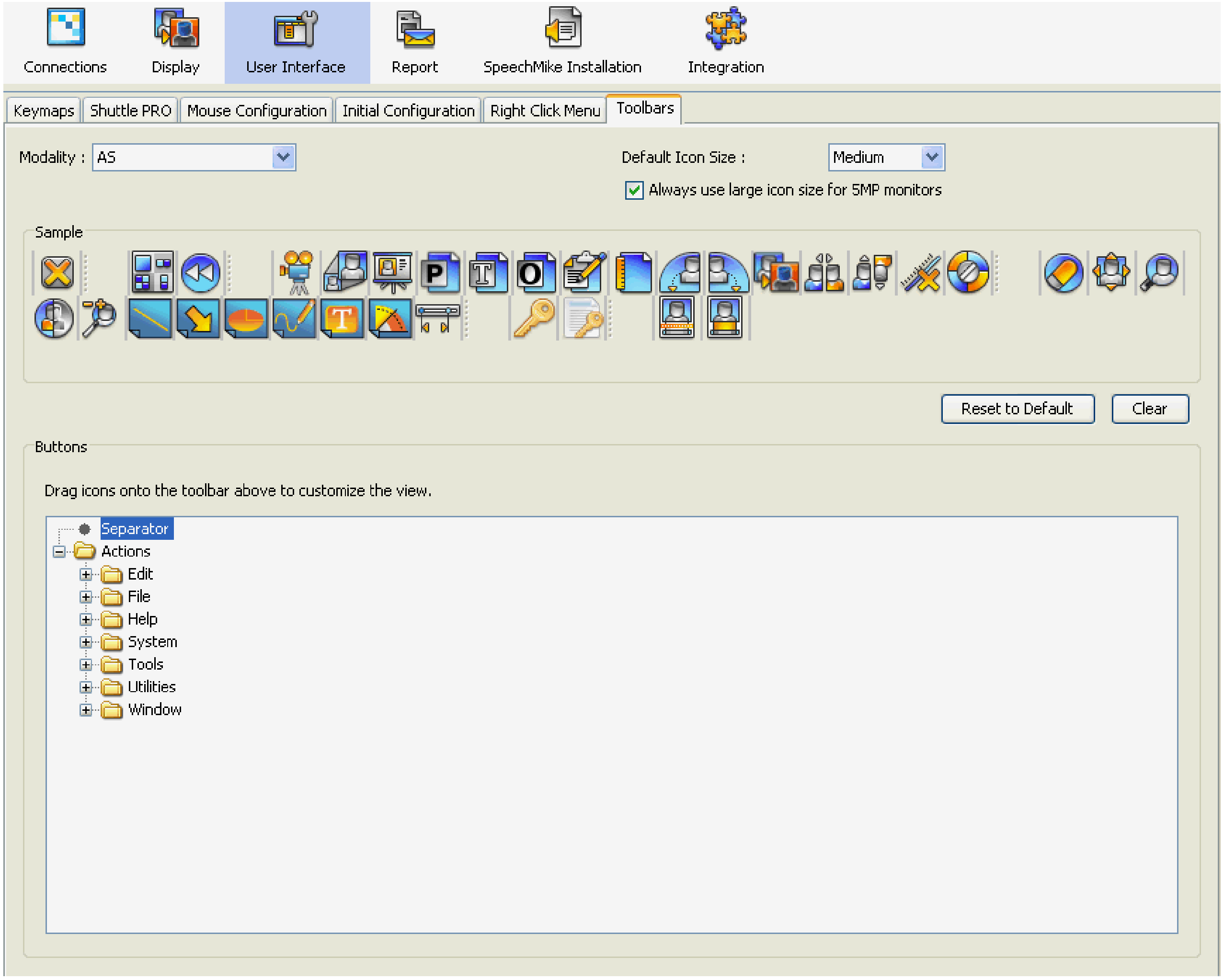
The type of right-click menu can be chosen from here. A radial menu displays a circular menu with actions assigned to each section. A pop-up menu displays actions in the regular list form.

The radial menu can be configured from the Radial Menu Settings.

The actions to be included in a regular pop-up menu can be selected by checking the boxes in the Pop-Up Menu Options panel.

Toolbar Settings Panel

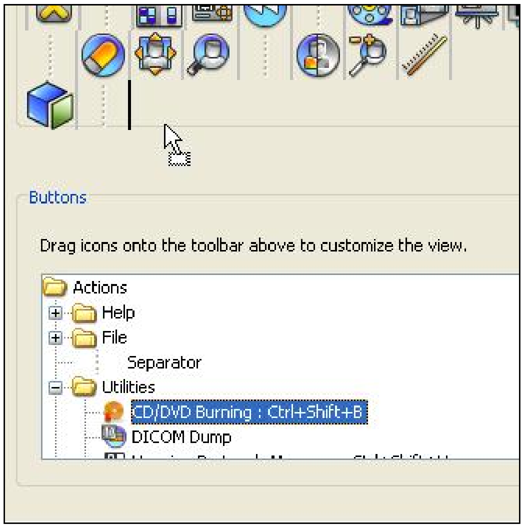
The general radiology imaging toolbar can be customized using the toolbar settings panel of the options dialog:



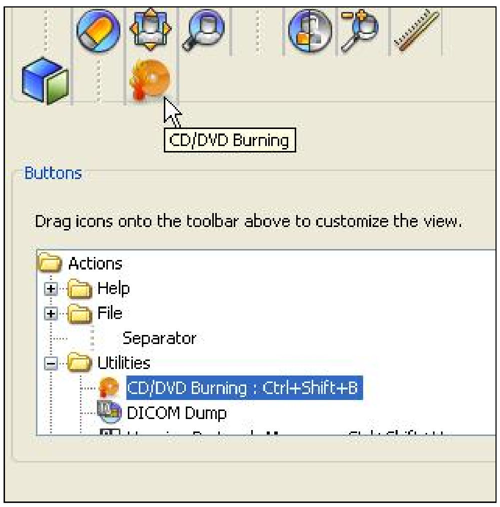
The imaging toolbar is modality based. A copy of the current layout for the imaging toolbar of selected modality is displayed at the top of this dialog. At the bottom of the dialog is a list of all of the icons which can be added to the toolbar.

The imaging toolbar can display icons in three different sizes. To change the default icon size, select one from the "Default Icon Size" drop down list.

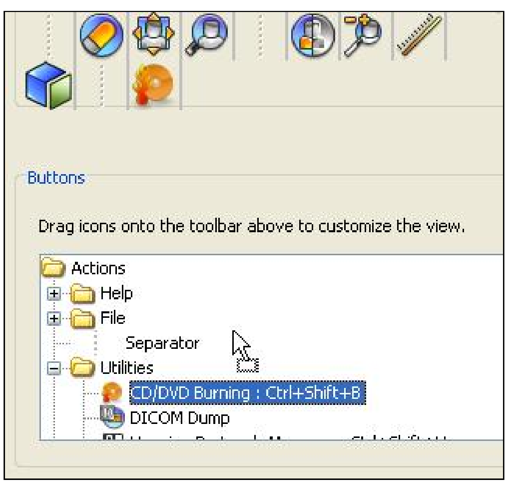
To add an icon to the toolbar, drag that icon from the list at the bottom of the dialog to the desired location on the toolbar at the top of the dialog. Drop the icon and the icon will be added at that position:



To move an icon on the toolbar to a new location, drag that icon to the new location. Drop the icon and it will be moved.



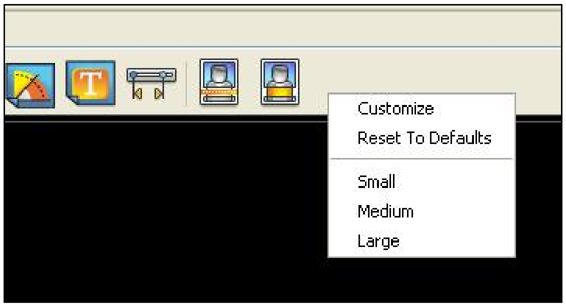
To remove an icon from the toolbar entirely, drag that icon onto the list of icons at the bottom of the dialog. Drop the icon and it will be removed.



Separators can be added, moved or removed just like any other icon.

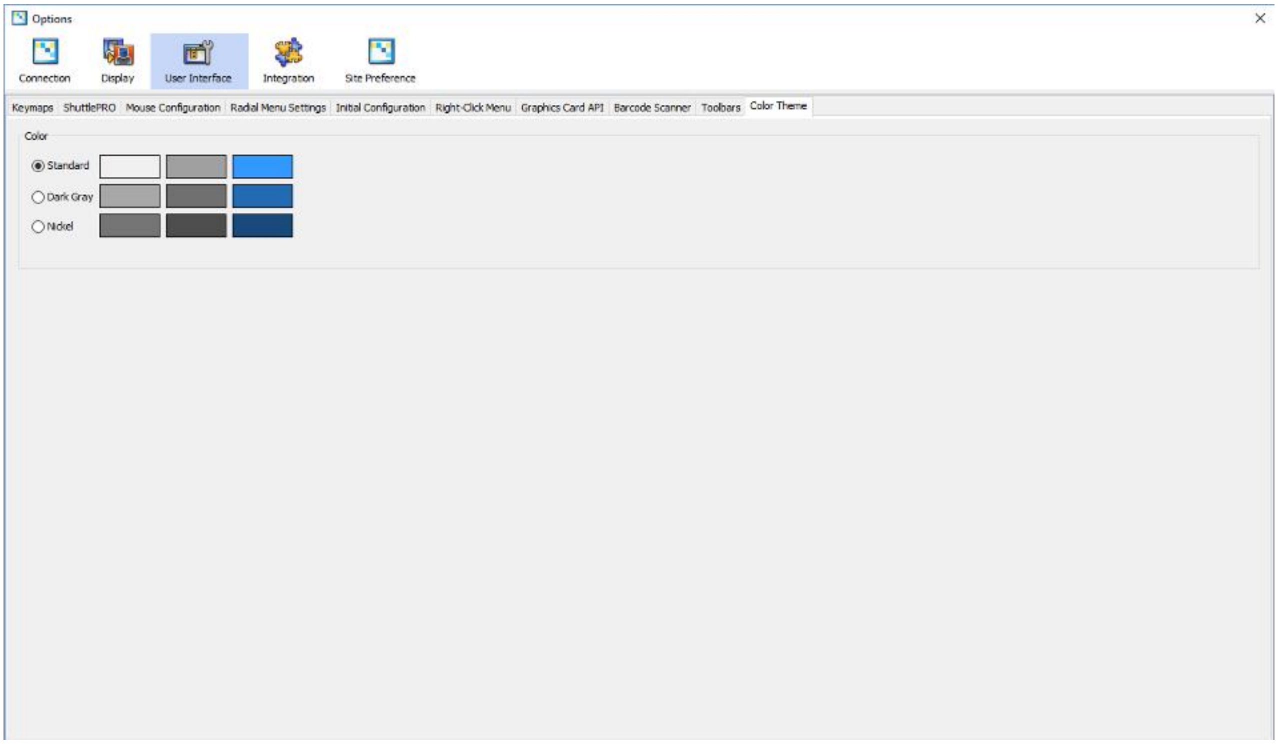
To clear the toolbar, click the clear button. *Note: this will remove all icons from the toolbar. It will be in most cases better to click "Reset To Default".*

The toolbar editor can also be accessed by right-clicking on the imaging toolbar itself, and selecting "Customize":


Customize
Reset To Defaults
Small
Medium
Large

Color Theme Settings

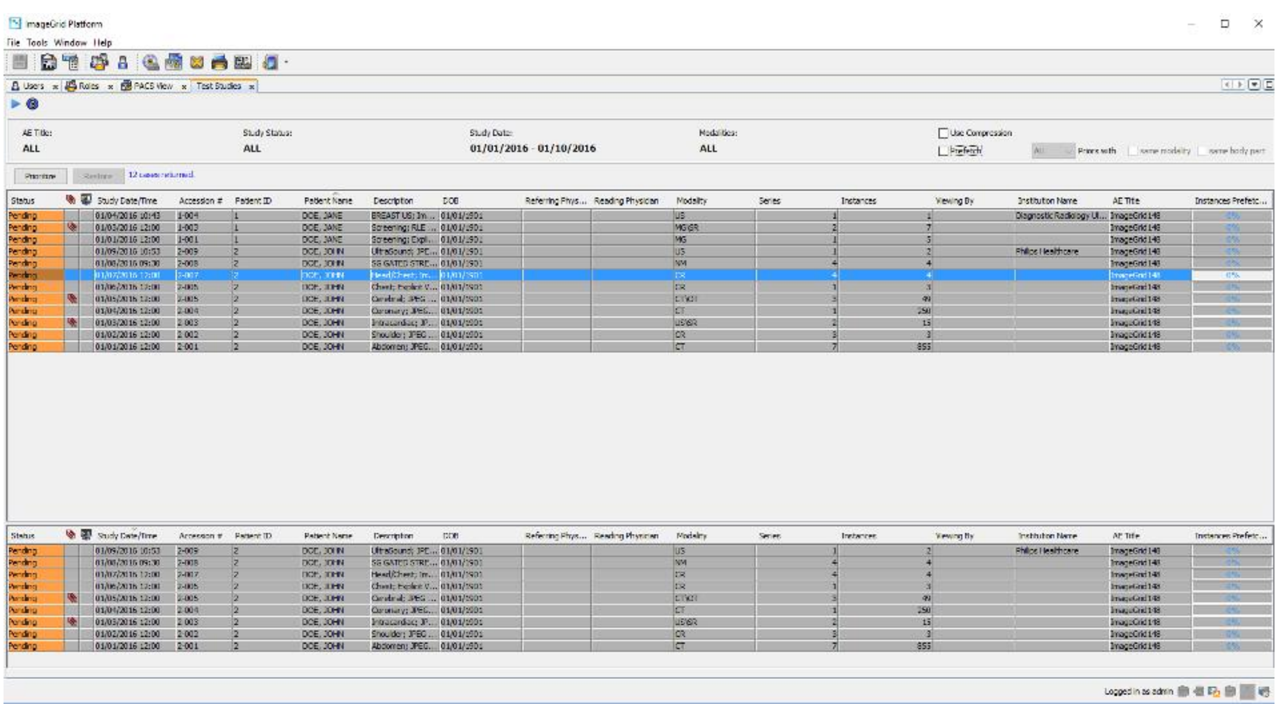
Color Theme option panel allows a user to choose from three pre-defined color themes. These are designed to make the tables, panels, dialog boxes, etc. darker so that their brightness would not interfere with viewing of studies in a dark room.



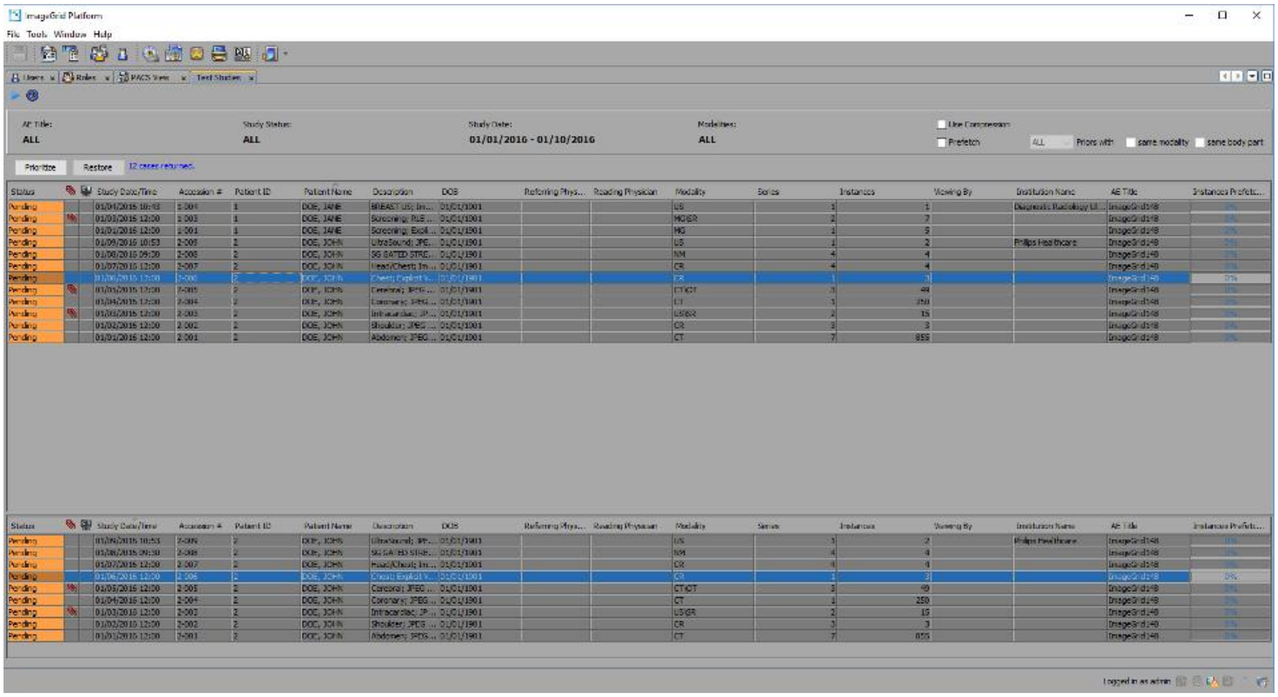
Once a color theme is changed the user must restart the platform for the new color theme to take effect. Also, the color themes are workstation-specific. All users logging into the ImageGrid Platform from the same workstation shall experience the same colors.

Sample screen captures of the available color themes are shown below.

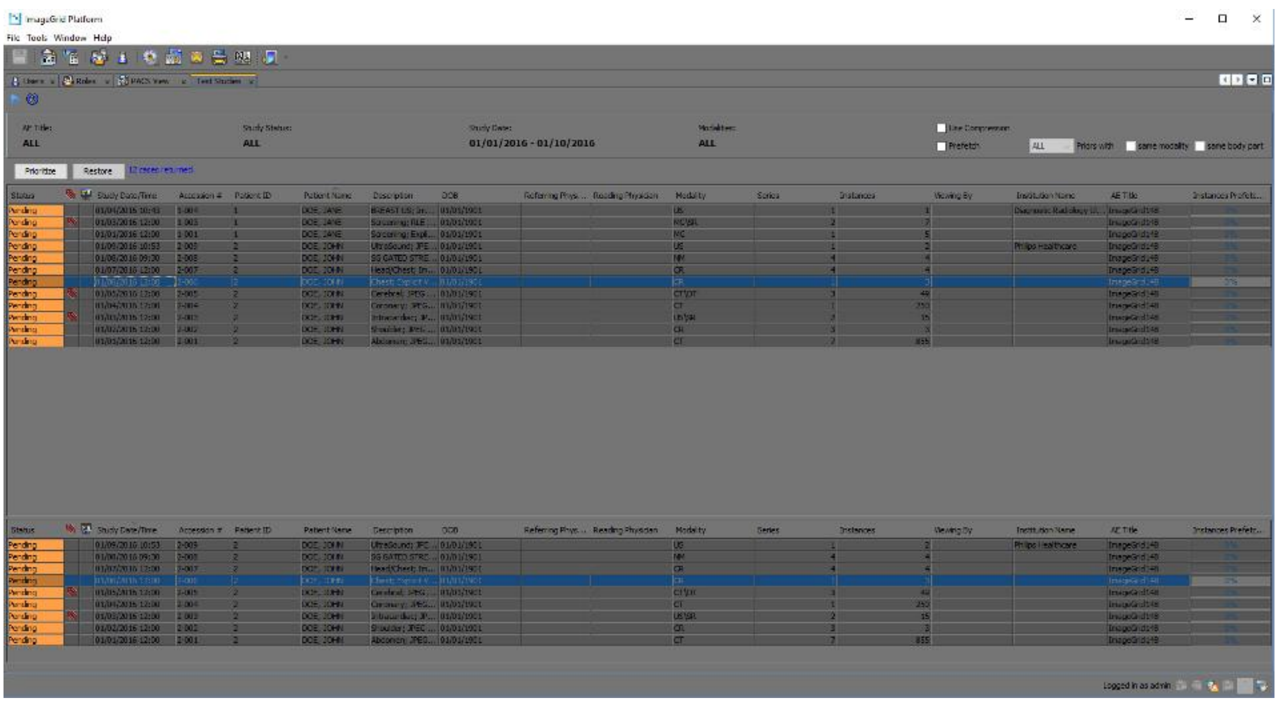
Standard



Dark Gray


imageGrid Platform
File Tools Window Help
AE Title:
ALL
Study Status:
ALL
Study Date:
01/01/2016 - 01/10/2016
Modalities:
ALL
Prioritize
Restore

Nickel

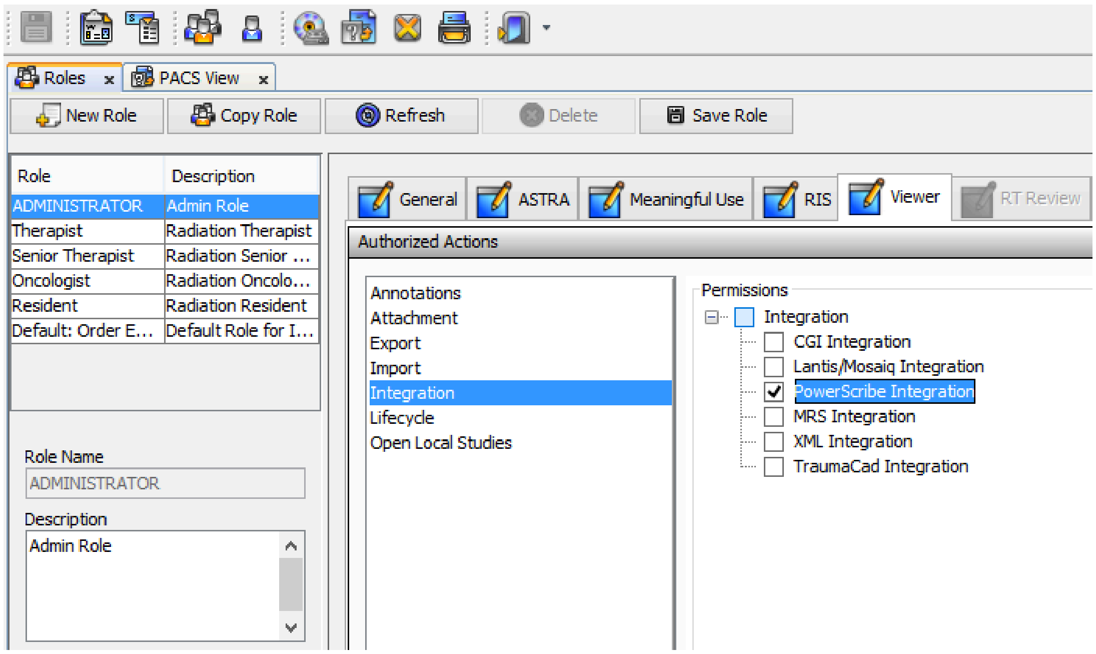

imageGrid Platform
File Tools Window Help
AE Title:
ALL
Study Status:
ALL
Study Date:
01/01/2016 - 01/10/2016
Modalities:
ALL
Prioritize
Restore

PowerScribe Integration

PowerScribe is a speech-recognition software which can be used in the Radiology workflow to create reports. The PowerScribe integration service provides integration of ImageGrid Viewer with PowerScribe using PACSBridge API to establish communication between the two through XML command files.

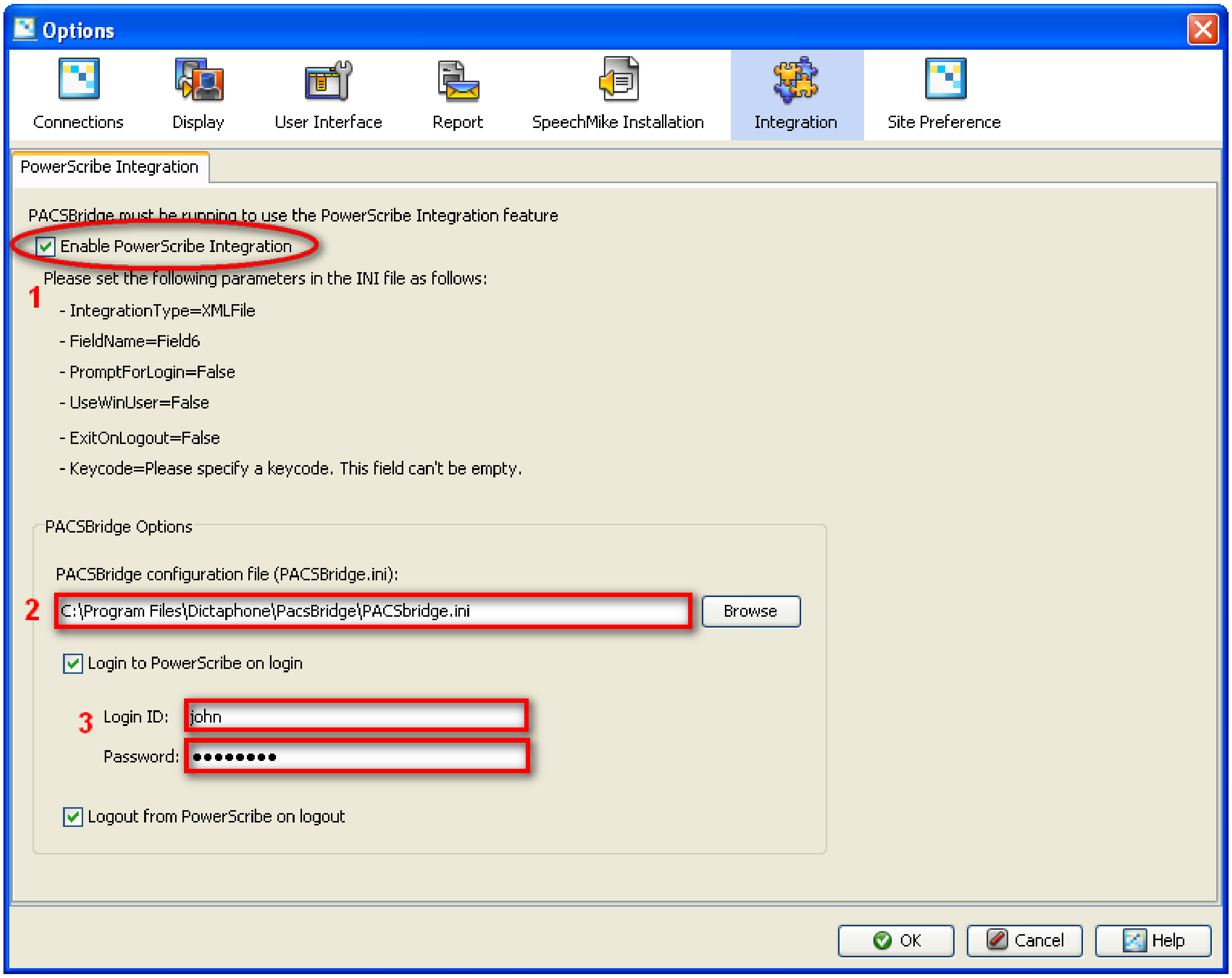
Steps to enable the use of PowerScribe Integration

PowerScribe Integration has to be enabled from Manage Roles settings. Check the box for "PowerScribe Integration" appearing under Tools -> Manage Roles -> Viewer -> Integration. Click the "Save Role" button to apply the settings. The settings take effect when a user with the changed role logs in the next time.



PowerScribe Integration Options

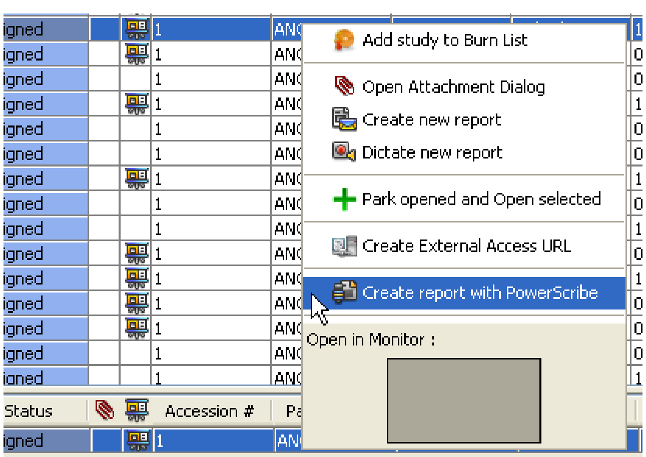
The PowerScribe Integration options panel allows the user to customize the PowerScribe Integration feature. If the user has PowerScribe Integration permission, he/she can access this option panel under Tools -> Options -> Integration -> PowerScribe Integration.



1. The PowerScribe Integration feature can be enabled/disabled from this options panel
2. The path to the PACSBridge.ini must be specified in the text field. This file contains the necessary configurations for PACSBridge and ImageGrid Viewer.
3. The login and logout feature can be enabled/disabled here. For login, login ID and password of a valid PowerScribe account must be provided.

Creating the report

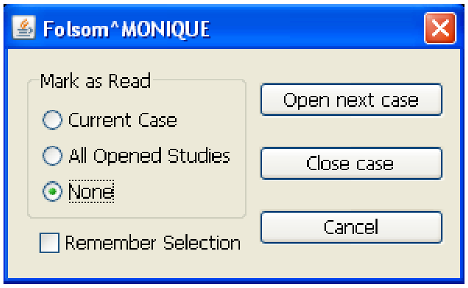
Report creation through PowerScribe can be done from PACS View panel's right click menu. Report of the selected study can be created in PowerScribe.



Closing Studies

At any point when a study is open, click the Close Study icon on the main toolbar (or on the imaging toolbar) to close the current study:

You will be presented with a dialog in which to select what you would like to do next. Select an option:



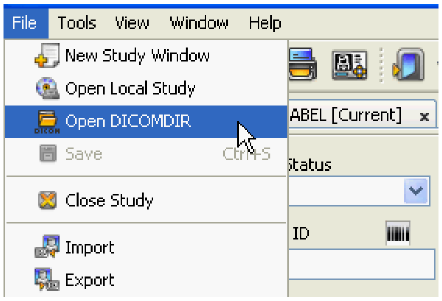
If the "Remember Selection" checkbox is checked, the system will remember your selection in this dialog for the remainder of the session.

Opening Local Studies

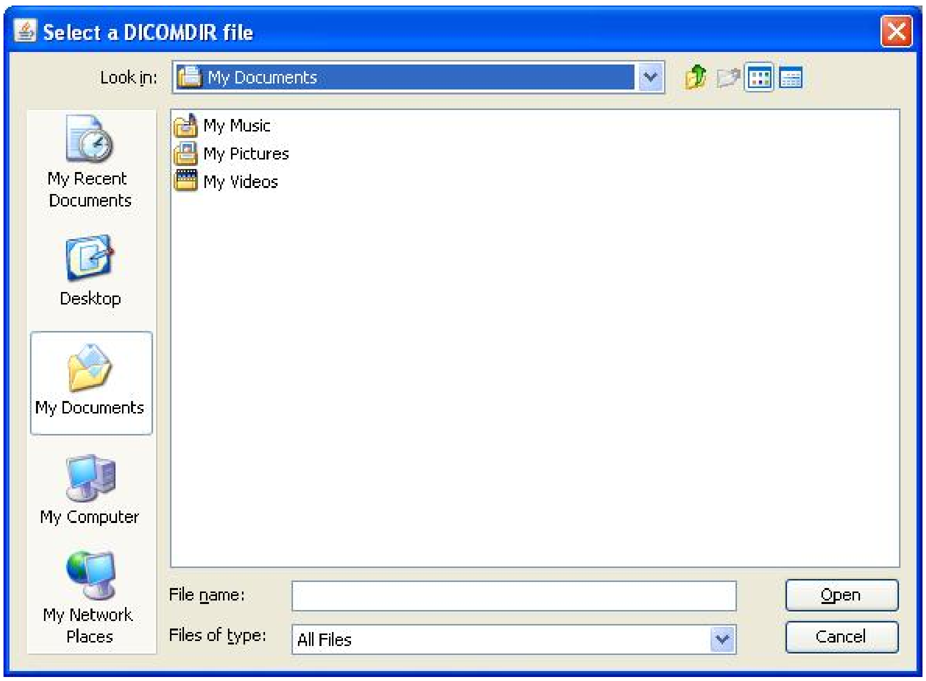
ImageGrid Viewer can also open studies from a local source, such as the user's hard drive, a CD-ROM, or flash drive.

Opening DICOMDIR Files

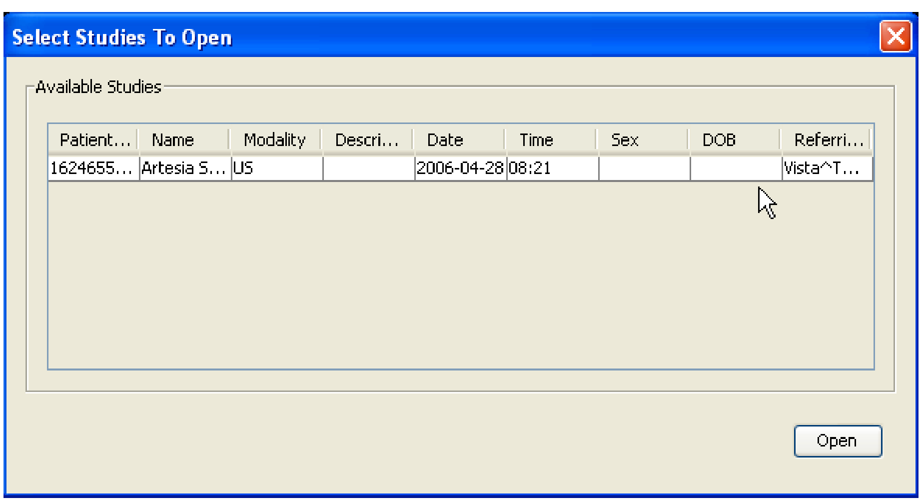
To open a study or set of studies indexed by a DICOMDIR (DICOM Directory) file, click the "Open DICOMDIR" entry on the File menu.



You will be presented with a dialog in which to select the DICOMDIR file to be opened. Navigate to the file and select "Open".

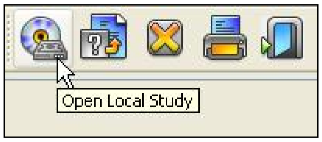


A dialog will be displayed listing those studies contained in the DICOMDIR file. Select a study and click "Open" to open it.



Opening DICOM files

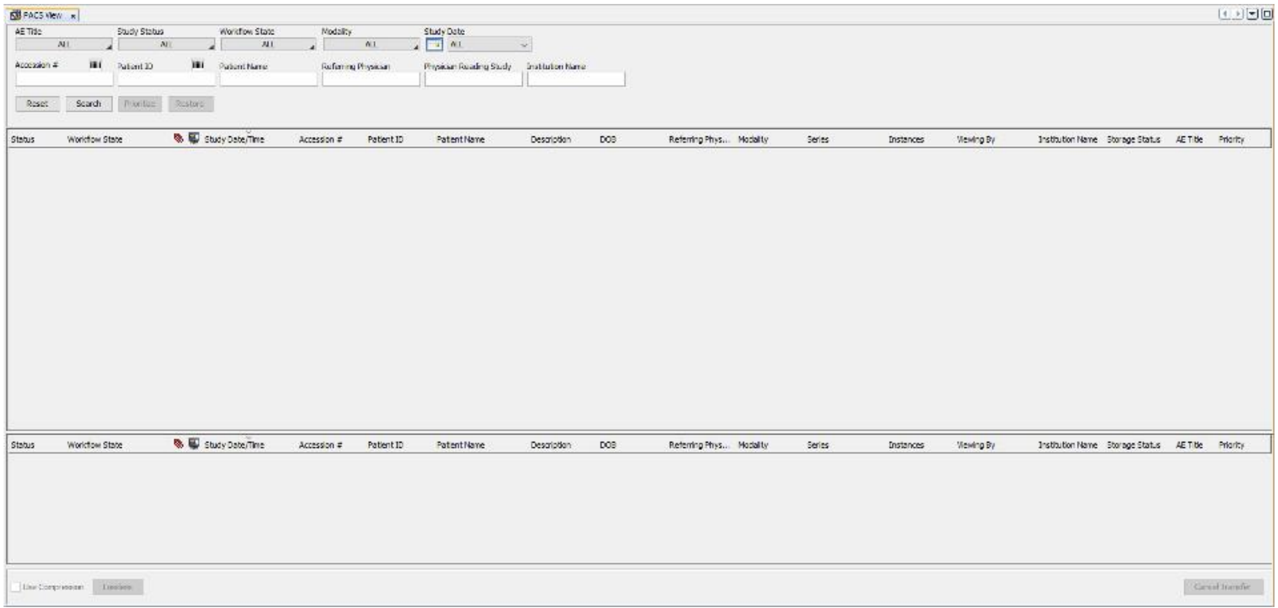
To open a study from one or more DICOM files, click the "Open Local Study" toolbar icon, or select "Open Local Study" from the File menu.



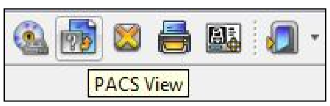
The DICOM files must be contained in a single directory. A dialog will be displayed allowing the user to select that directory. If that directory contains one or more valid DICOM files, then those files will be opened for viewing.

Searching ImageGrid

Upon starting the ImageGrid Viewer, the user will be presented with the PACS View interface:



This interface can be displayed at any time by clicking the PACS View toolbar icon:



Search Criteria

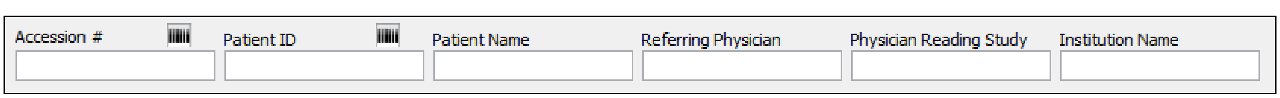
At the top of the PACS View panel is displayed a set of search criteria. The user may search the ImageGrid based on the following criteria:

- AE Title
- Study Status
- Workflow State
- Modality
- Study Date
- Accession Number
- Patient ID
- Patient Name
- Referring Physician
- Physician Reading Study
- Institution Name

Clicking the Reset button will reset all search criteria to their original values. Clicking Search sends a request to the ImageGrid to retrieve all studies matching the specified criteria.

Search using a Barcode Scanner

The Accession Number and Patient ID fields can be filled manually, or by an external USB barcode scanner. Lock the corresponding field for barcode scanning by clicking the barcode icon:

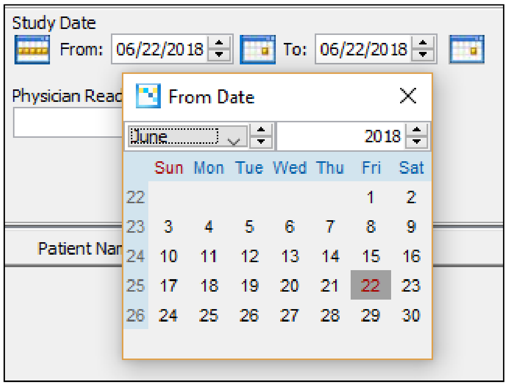


Now scanning a barcode using an external USB barcode scanner will fill the corresponding field appropriately. Once the Accession Number or Patient ID fields are locked, the user will not be able to enter anything in the other fields, until the fields are unlocked. To unlock click again on the barcode icon.

Search by Study Date

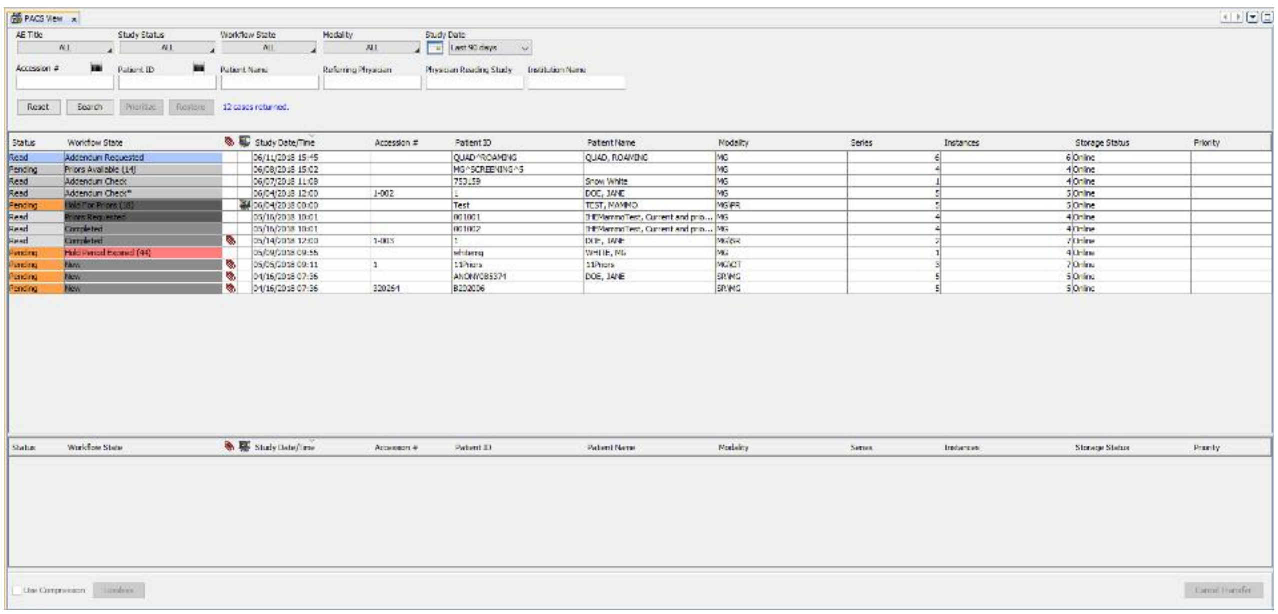
Several date presets (ALL, Today, Current Week etc.) are provided in a drop-down menu. However, if more specificity is required, click on the calendar icon next to the drop-down menu:

Fields will be displayed allowing the user to select a range of dates. Clicking one of the two calendar icons on the right will display a calendar allowing visual selection of dates:



Executing a Search

Clicking Search will send a request to the ImageGrid to retrieve all matching studies. When the request is completed, the matching studies will be displayed in the two tables as shown here:



The first (top) table displays all studies for all patients. The second table displays all studies for the patient selected in the top table.

The tables display the following information in each row:

- Study Status
- Workflow State
- Attachments
- GSPS Information
- Accession #
- Patient ID
- Patient Name
- Patient Date of Birth
- Study Date/Time
- Modality
- Referring Physician
- Study Description

- AE Title
- Number of Series
- Number of Instances
- Viewing by
- Institution

Clicking the table header in any column will sort the data in the table by the entries in that column.

Opening Studies

Double clicking on a study in the top table will open that study with its most recent prior. Double clicking a prior in the bottom table will open that prior alongside any open data. If a study for a different patient is already open, that study will be closed before opening the study for the new patient. If the study is already being viewed by another user, a warning dialog will pop up, allowing the current user to choose whether he/she still wants to open that study.

When a study is opened, it must be downloaded from the ImageGrid. The progress of the download will be displayed at the bottom of the screen. The download can be cancelled by clicking "Cancel Transfer".

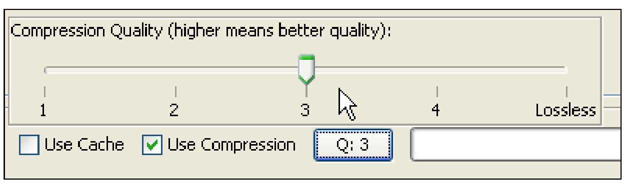
Selecting the "Use Cache" option before opening a study will bypass the download and use files saved locally, if that study has already been opened in the same session.

Selecting the "Use Compression" option before opening a study will request that any requested instances be compressed before being sent to the ImageGrid Viewer. This may save time for larger studies.

Activating the "Use Compression" option will enable the compression quality selection button. When this button is clicked a new window with the different quality factors will appear. A higher number will mean better quality, which implies that more data will have to be downloaded to the client.

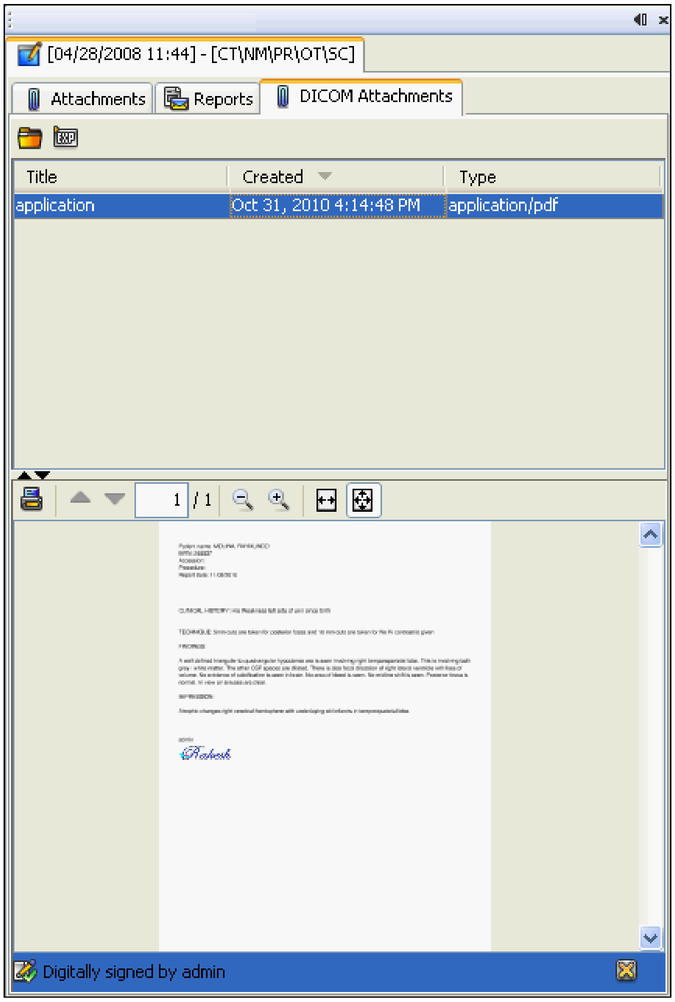
Note that some studies might not be compressed if Rendering Mode in Tools->Options->Connection->Download Settings is set to "Assisted Rendering" or "Auto".

It is advisable to not activate compression in fast networks.



Viewing attachments

The second column from the left in the study table displays attachment information. If an attachment is present in a study, a paperclip icon will be displayed. Clicking on this column, whether or not an attachment is present, will bring up the attachments window, which allows the user to view and add attachments.

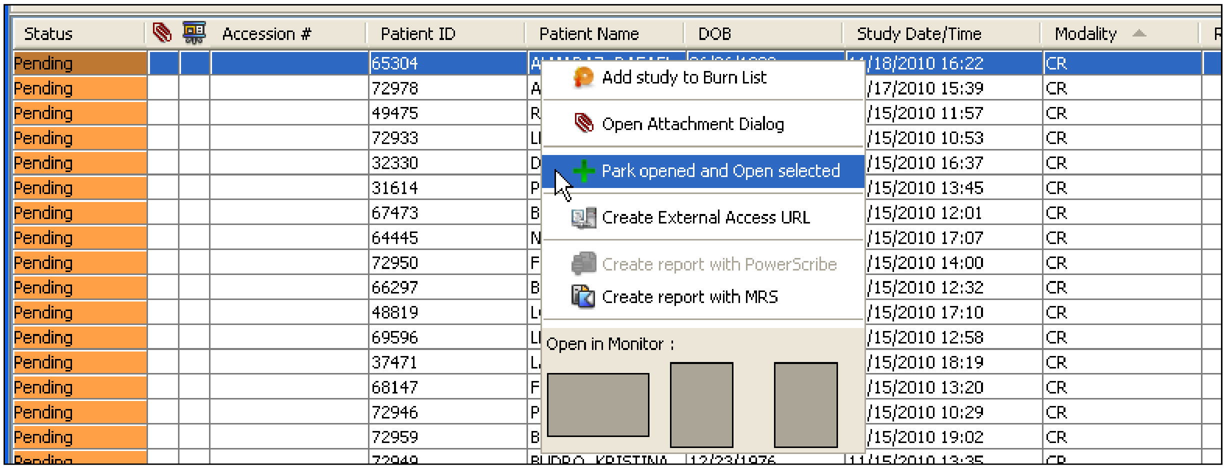

[04/28/2008 11:44] - [CT\NM\PR\OT\SC]
Attachments
Reports
DICOM Attachments
Title
Created
Type
application
Oct 31, 2010 4:14:48 PM
application/pdf
1
/ 1
Digitally signed by admin

Study Parking

Parking a Study

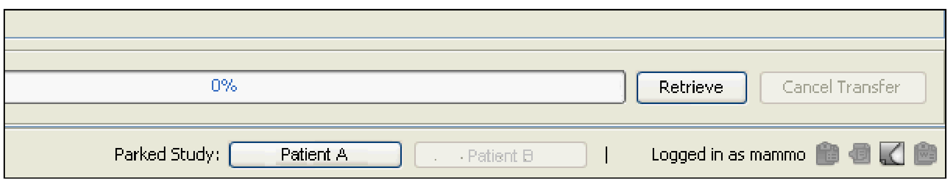
Study Parking is the ability to preserve the state of an already opened study so the user can open a second study and come back to the parked study later on.

To park a study, go to the PACS View panel and right click on the study you want to view. By clicking on 'Park Opened and Open Selected', the study already opened will be parked and the selected study will be opened at the same time:



Retrieving a Parked Study

Once a study has been parked, it is accessible from the Study Parking Panel that will be shown in the bottom right corner of the main window:



By clicking on either button, the corresponding study will be opened in the same state as it was when it was parked.

Shared Files

Certain files in ImageGrid Platform such as hanging protocols or mammography workflows may be shared with other users.

Sharing Files

There are two ways in which a file can be shared:

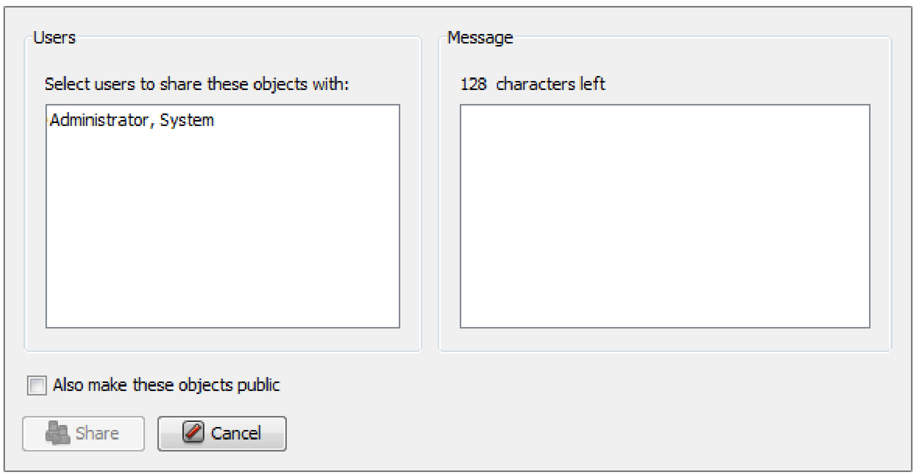
- **Making a file public** allows all users to find and copy the file.
- **Sharing a file with particular users** allows only specified users to makes copies of your file. Those users will receive messages the next time they log in, informing them about the new shared file.

The share dialog is shown below. This dialog may be opened from any manager supporting file sharing (for example, from the hanging protocols manager).

On the left is a list of all users. Select multiple users by holding the Control key and clicking with the left mouse button.

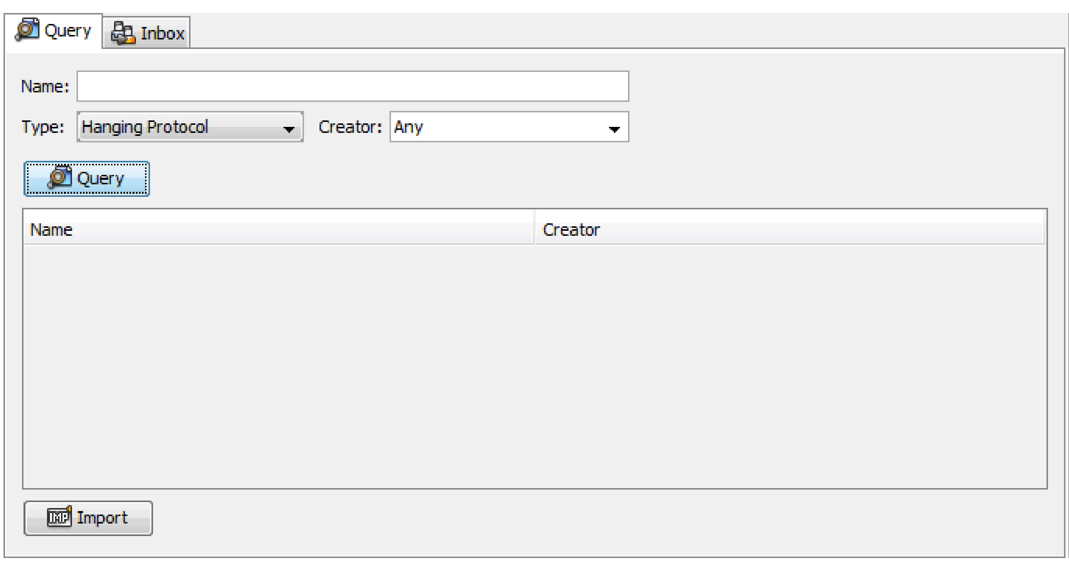
On the right, a message may be entered which will appear on the target users' machines along with the shared file.

In addition, checking the box at the bottom will make the file public, allowing any user to find and copy your file. However, only the selected users will receive notification messages about the new shared file.



Finding Public Files

Files which have been made public by other users may be found using the search dialog shown below. If a manager supports file sharing, then a button will be provided to open this dialog.

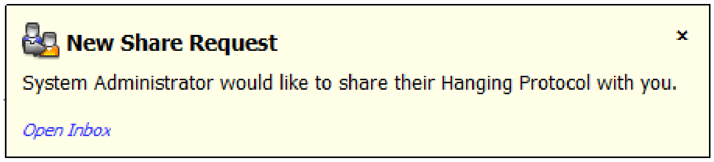


Find the file by entering the name or a portion of the name and clicking Search. Narrow down the result by specifying a particular user or file type.

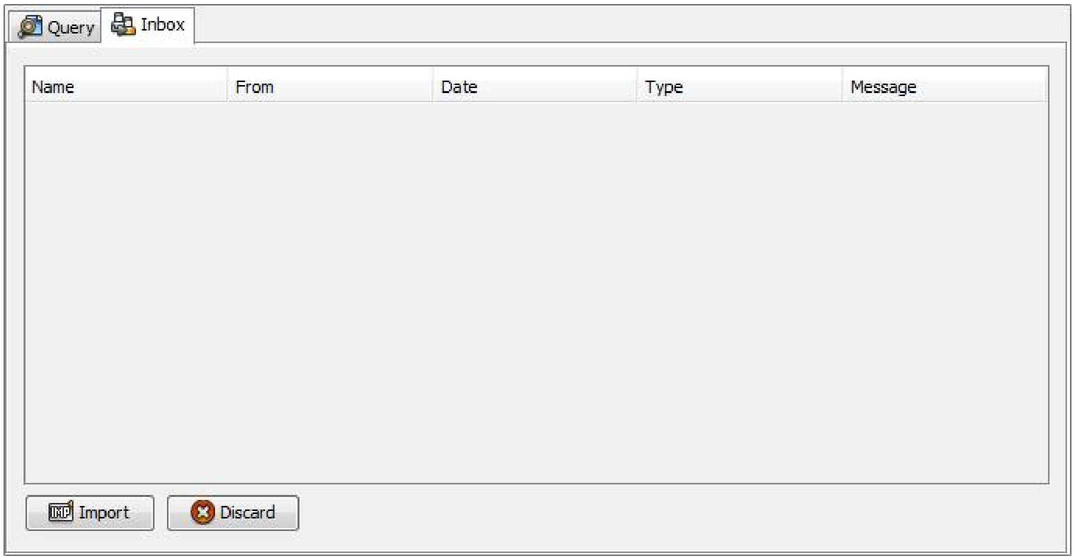
Make a copy of the selected file by clicking the Import button. The file will appear in the appropriate manager interface.

Receiving Files From Other Users

If another user shares a file with you, you will receive a message. If you are not logged in, the message will be displayed the next time you log in.



Click Open Inbox to display the File Inbox, shown below:



The table lists files sent to you by other users. Select a file and click the Import button to make a copy of the file, or click Discard to ignore the file and delete it from your inbox.

Workflow States

The Viewer supports a workflow to be employed by radiologists for reading studies, based on the availability of prior studies. Such a workflow is expected to help radiologists minimize the time spent on a study for which appropriate prior studies are not available. A study goes through a series of states in the workflow as described below.

Explanation of Workflow States

1. ***New***
   Default state of a study that appears on the ImageGrid server for the first time (from a modality, from another PACS, etc.).

2. ***Hold for Priors***
   - A radiologist may choose to delay reading a study if some priors necessary for reading (e.g., the most recent one) are unavailable or no priors are available at all.
   - The study will be maintained in a state called *Hold for Priors* for a configurable Hold Period (1 to 30 days).
   - The *Hold Period* is the maximum amount of time that can elapse before the study must be read irrespective of whether priors are available. It will begin on the day the study was performed, i.e., the study date.
   - A study will be taken off this state either when, a) The *Hold Period* Expires, or when b) Priors for the study become *Available*

3. ***Hold Canceled***
   In some cases, it is simply not possible to obtain priors of a patient. For example, prior exams may have been performed in a different country altogether. This state is used to indicate that an attempt was made to locate priors for the requested case, but any additional priors were unavailable.

4. ***Hold Period Expired***
   A state indicating that the configured window for delaying a study read has elapsed. Priors for the study could not be retrieved in time and the study must be read as soon as possible.

5. ***Priors Available***
   Priors of a study that was put on hold have been retrieved and the study is ready for reading.

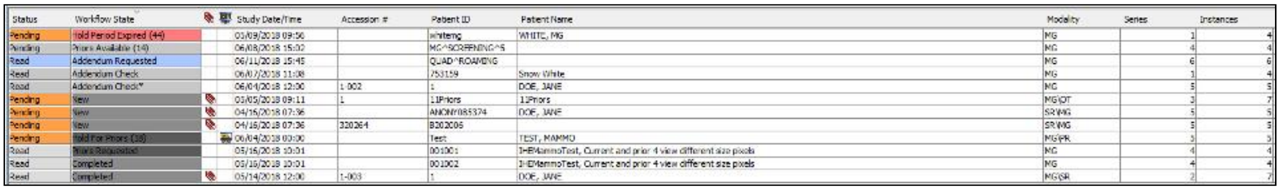
6. ***Priors Requested***
   - At times, a study may have some priors available on the server, but not all.
   - A radiologist may prefer a particular set of priors to be present for the read (this would occur most often when the most recent priors are not available).
   - The radiologist could then decide to read the study, create a report, but still request priors. The radiologist would have the ability to create an addendum whenever the requested priors become available.
   - Appropriate prior studies are needed to be retrieved externally (from another ImageGrid, importing from a CD, importing from ASTRA Plus, request from another facility etc.).

7. ***Addendum Check***
   - Priors of a study, that has been read, have been added to the server.
   - An addendum may then be created for the study at the radiologist's prerogative.
   - Priors can be made available to a system any time during QC. However, a prior study will not be considered relevant if it appears in the system after a user-configurable cutoff time has been reached since performing the current exam.
   - For instance, a prior that becomes available 6 months after the current is likely not going to be deemed useful and hence, re-read of the current study should not be triggered.
   - *Priors Cutoff Period* (1 to 3 months) is a configurable period beginning on the study date such that any prior study appearing outside the specified window will not put the study in the *Addendum Check* state.

8. ***Completed***
   State of a study that has been read and reported.

9. ***Addendum Requested***
   This is merely a communication vehicle for explicitly requesting a radiologist to re-read a study. Decision on whether an addendum is necessary is left to the radiologist. An example of such a case would be as follows.
   - A radiologist reads a study, but requests priors for it.
   - The appropriate priors cannot be retrieved within a configured *Priors Cutoff Period* of 30 days.
   - However, a prior study is found and added to the server on the 45th day after the study was performed.
   - The system will **not** automatically change the state of the study to *Addendum Check*.
   - Thus, a re-read could be requested explicitly, as a special case, using *Addendum Requested*.

The Viewer shows the state of a study in the PACS View or a radiology worklist. The states are color coded so that distinguishing between them becomes easier.



Status	Workflow State			Study Date/Time	Accession #	Patient ID	Patient Name	Modality	Series	Instances
Pending	Hold Period Expired (44)			03/09/2018 09:56		whitemg	WHITE, MG	MG	1	4
Pending	Priors Available (14)			06/08/2018 15:02		MG^SCREENING^S		MG	4	4
Read	Addendum Requested			06/11/2018 15:45		QUAD^ROAMING		MG	6	6
Read	Addendum Check			06/07/2018 11:08		753159	Snow White	MG	1	4
Read	Addendum Check*			06/04/2018 12:00	1-002	1	DOE, JANE	MG	5	5
Pending	New			03/05/2018 09:11	1	11Priors	11Priors	MG\OT	3	7
Pending	New			04/16/2018 07:36		ANONY085374	DOE, JANE	SR\MG	5	5
Pending	New			04/16/2018 07:36	320264	B202006		SR\MG	5	5
Pending	Hold For Priors (18)			06/04/2018 00:00		Test	TEST, MAMMO	MG\PR	3	3
Read	Priors Requested			05/16/2018 10:01		001001	IHEMammoTest, Current and prior 4 view different size pixels	MG	4	4
Read	Completed			05/16/2018 10:01		001002	IHEMammoTest, Current and prior 4 view different size pixels	MG	4	4
Read	Completed			05/14/2018 12:00	1-003	1	DOE, JANE	MG\SR	2	7

The Workflow State column provides some more visual cues.

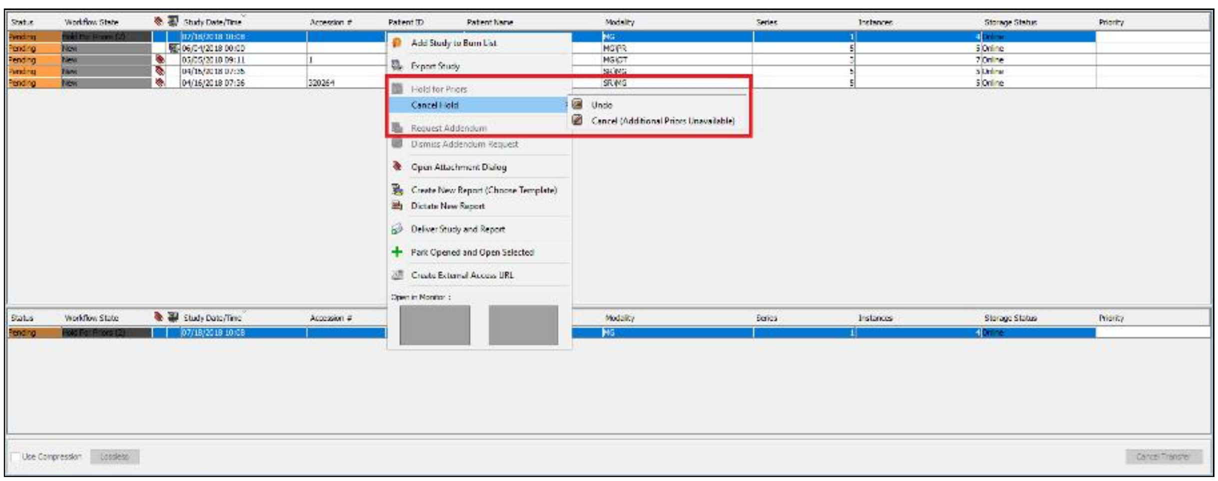
- The number in brackets for states *Hold for Priors*, *Hold Period Expired* and *Priors Available* represents the number of days passed since the study was performed, i.e., the study date.
- The UI also conveys a small difference in the Addendum Check states.
    - *Addendum Check*: Priors retrieved for a study for which priors were explicitly *Requested*
    - *Addendum Check**: Priors retrieved for a study for which priors were **not** requested

Modifying Workflow States

A user can change the state of a study from the Viewer in order to communicate a message to other ImageGrid users.

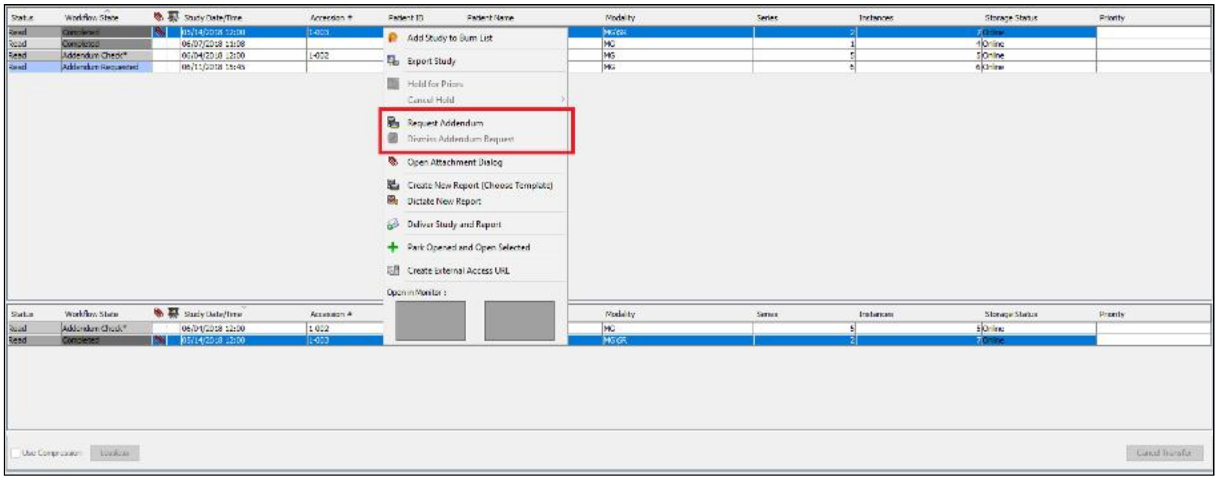
1. Hold for Priors
   A radiologist can put a study on hold from the right-click menu of a study table in the PACS View or a worklist.
   The option is enabled only if the selected study is in either *New* or *Priors Available* state.

2. Cancel Hold
   Any user can take a study off hold from the right-click menu as well. The option is enabled only if the selected study is in *Hold for Priors* state.
   'Undo' reverts a study back to *New* state and is useful if the study was put on hold inadvertently. Hold state of a study can be canceled if its priors cannot be retrieved at all for some reason.

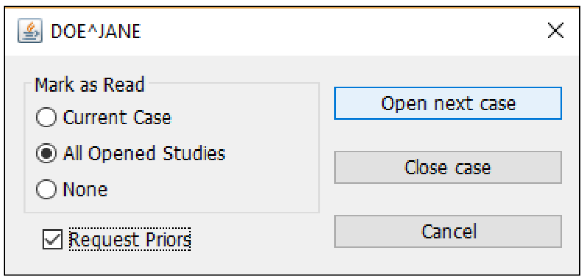


3. Request Addendum
   A user can request an addendum for a read study from the right-click menu of a study table.
   The option is enabled only if the selected study is in *Completed* state.

4. Dismiss Addendum Request
   A radiologist can dismiss a request for an addendum from the same right-click menu.
   The option is enabled only if the selected study is in either *Addendum Check* or *Addendum Requested* state.



5. Request Priors
   A radiologist can request priors for a study from the close dialog. The dialog is shown when the 'Close Study' button on the Platform's toolbar is clicked.



   The Request Priors check-box is enabled only if the study being closed is either *New*, *Hold Period Expired*, *Hold Canceled* or *Priors Available* and if either 'Current Case' or 'All Opened Studies' is selected under 'Mark as Read'.

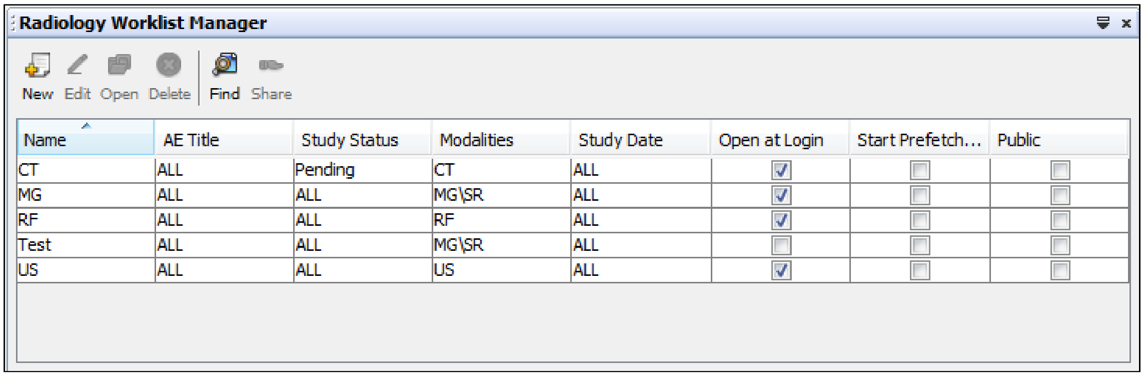
6. Complete Reading
   A study can be set to *Completed* any time by marking it as read from the close dialog.

Using the Radiology Worklist

The radiology worklist is an enhanced search interface. It increases reading throughput by providing both a named search filter and study pre-fetching.

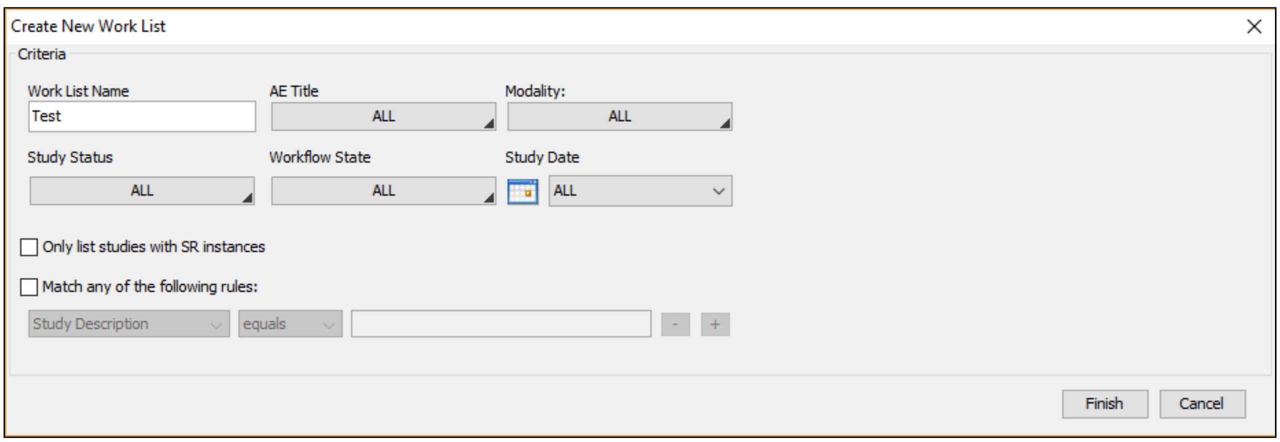
Radiology Worklist Manager

The radiology worklist manager is an interface to create, open, edit, and delete radiology worklists. To open the radiology worklist manager, navigate to the Tools menu and select the "Radiology Worklist Manager" option.



Create a New Radiology Worklist

To create a new radiology worklist, click on the button on the toolbar, and the Create New Work List window will show.



You can create a radiology worklist based on certain criteria such as modality, AE Title, study date range, etc. If the 'Only list studies with SR instances' box is checked, then only the studies of the chosen modalities, which have DICOM Structured Reports attached with them, would be included in the worklist. You can also add or remove rules to match some DICOM tags such as study description or referring physician name. The operators that can be used for this purpose are "equals", "contains", "starts with" and "ends with". The DICOM tag matching rules will be evaluated separately, which can be thought of as an "OR" operation between all the rules.

Edit a Radiology Worklist

Select a radiology worklist from the list, and then click on the button on the toolbar, then the radiology worklist criteria window will show. Edit the radiology worklist in the window and then click on "Finish" when done.

Open a Radiology Worklist

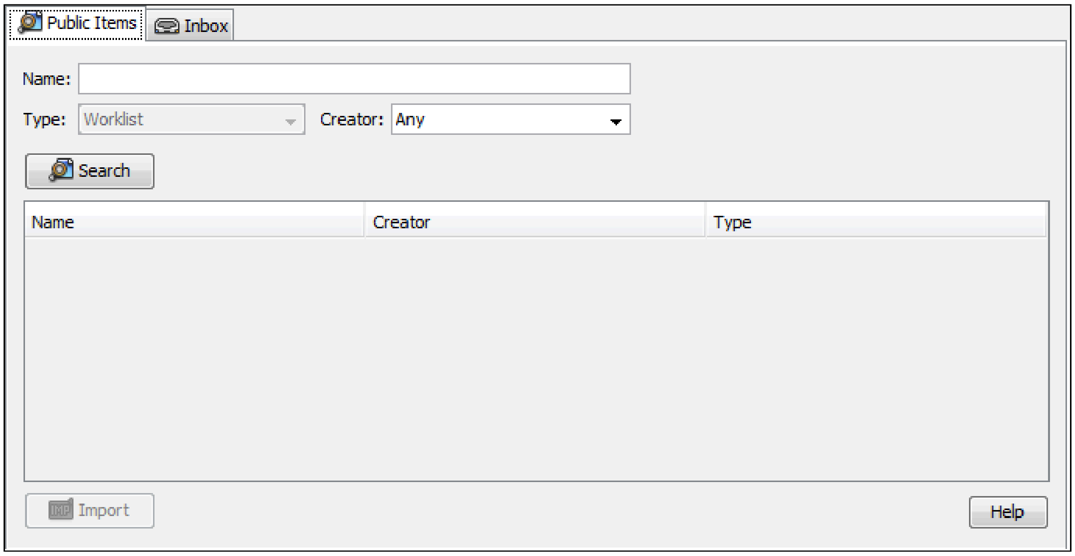
Select a radiology worklist from the list, and then click on the button on the toolbar, or double-click on a radiology worklist to open.

Delete Radiology Worklist(s)

Select one or multiple radiology worklist(s) from the list, and then click on the button on the toolbar to delete.

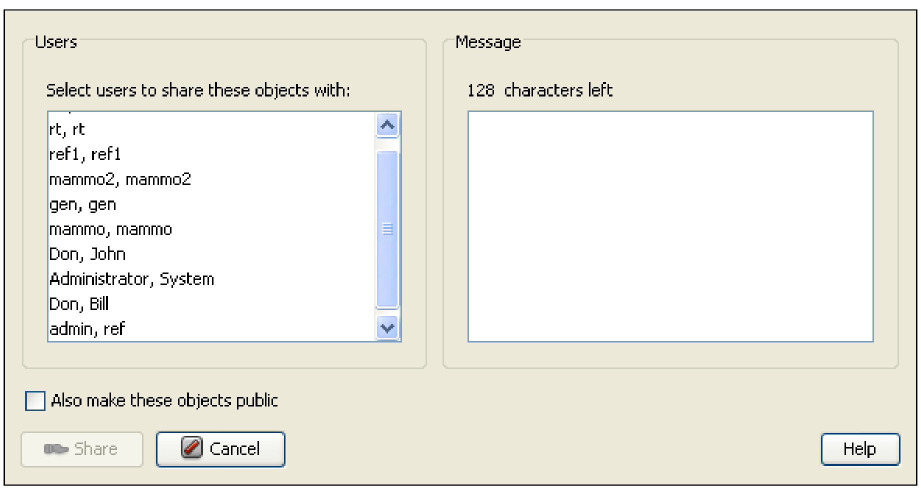
Find Public Radiology Worklist(s)

To find public radiology worklists on the ImageGrid, click on the button on the toolbar, then the Shared Objects Window will show.



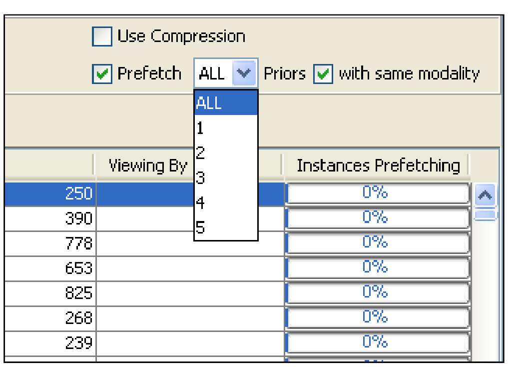
Share Radiology Worklist(s)

Select one or multiple radiology worklist(s) from the list, and then click on the button on the toolbar, then the Share Window will show.



Radiology Worklist Options

Before using a radiology worklist, there are three option checkboxes in the upper-right corner of the interface, along with a dropdown.

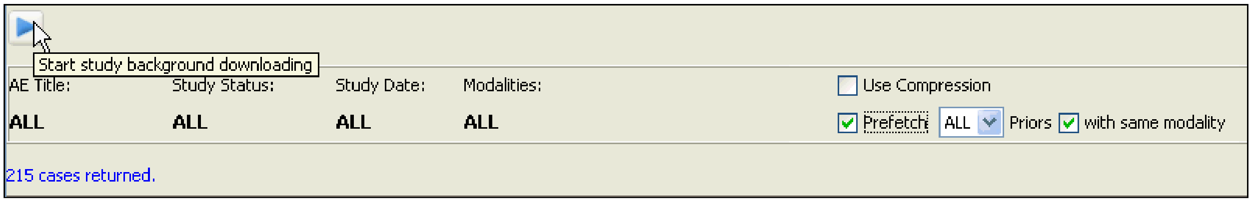


If the "Use Compression" box is checked, studies will be downloaded in a compressed form to minimize bandwidth usage. Note that some studies might not be compressed if Rendering Mode in Tools->Options->Connection->Download Settings is set to "Assisted Rendering" or "Auto".

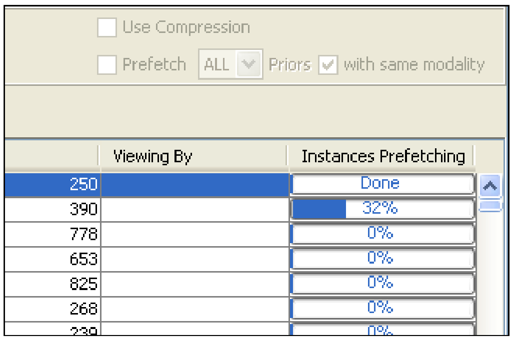
If the "Prefetch" box is checked then studies will be downloaded with the number of priors specified in the dropdown. If the "with same modality" box is checked, only the priors with the same modality will be downloaded.

Navigating the Radiology Worklist

A radiology worklist functions in a very similar way to the standard "PACS View" interface; however, study pre-fetching is only available from this radiology worklist interface. To activate study pre-fetch, navigate to the top-left portion of the radiology worklist tab, and click the blue play button. After the button is released, the studies in the radiology worklist will begin to download, and the play button will change to a pause button, which can be used to pause pre-fetching.



As studies download, their progress will be visible in the right-most column of the radiology worklist table.



Reading With the Radiology Worklist

A radiology worklist functions in a very similar manner to the general search interface. The advantage of using the radiology worklist is that, with pre-fetching enabled, the time spent on waiting for studies to load should be reduced significantly since studies had already been downloaded.

Priors Worklist

A radiologist needs current and prior studies of a patient to read an exam. All images for a patient need to be downloaded to the radiologist workstation before they could be read. The prior studies form a significant portion of the payload for one patient, especially if tomosynthesis objects are involved.

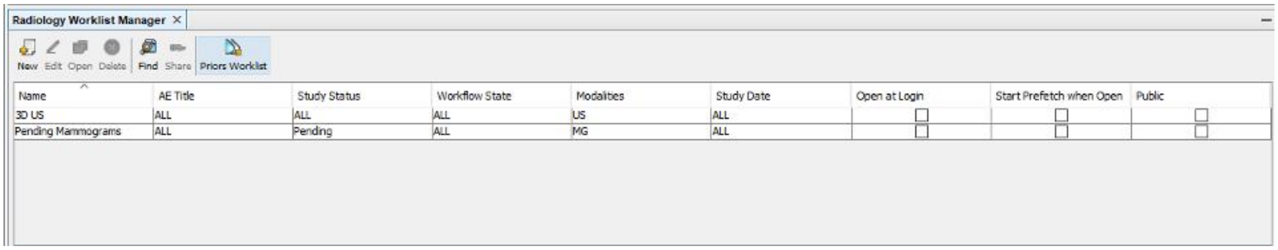
ImageGrid Viewer has the ability to download prior studies for patients scheduled on a particular day ahead of the exams being performed. The Viewer could start downloading prior studies as soon as a user logs in. It helps to ensure that the only images downloaded during business hours are for the current studies. This significantly reduces the time between images being captured and the studies being available for a radiologist to read, which is highly desirable for stat cases.

This feature needs to be configured from the Web Interface. It requires the following steps.

- Business Hours: The ImageGrid server attempts to prefetch the prior studies during off-hours, so that they would be ready to be downloaded to a workstation as soon as a user logs in at the beginning of business hours. Business Hours could be configured under Administraion -> System -> General Settings.
- Modality Worklist: The system needs to know the schedule for a particular day to be able to prefetch priors. It could be provided by pointing the server to a modality worklist. The schedule must be available at least one day ahead of the date of an exam for optimal performance. The MWL could either be local, set up with the help of RIS or HL7, or remote. It could be configured under Administration -> DICOM -> Prefetching Policies -> Settings.
- Prefetching Policy: A prefetching policy needs to be set up to gather the prior studies necessary for reading. It could be configured under Administration -> DICOM -> Prefetching Policies -> Policies.

Please refer to the PACS manual for details.

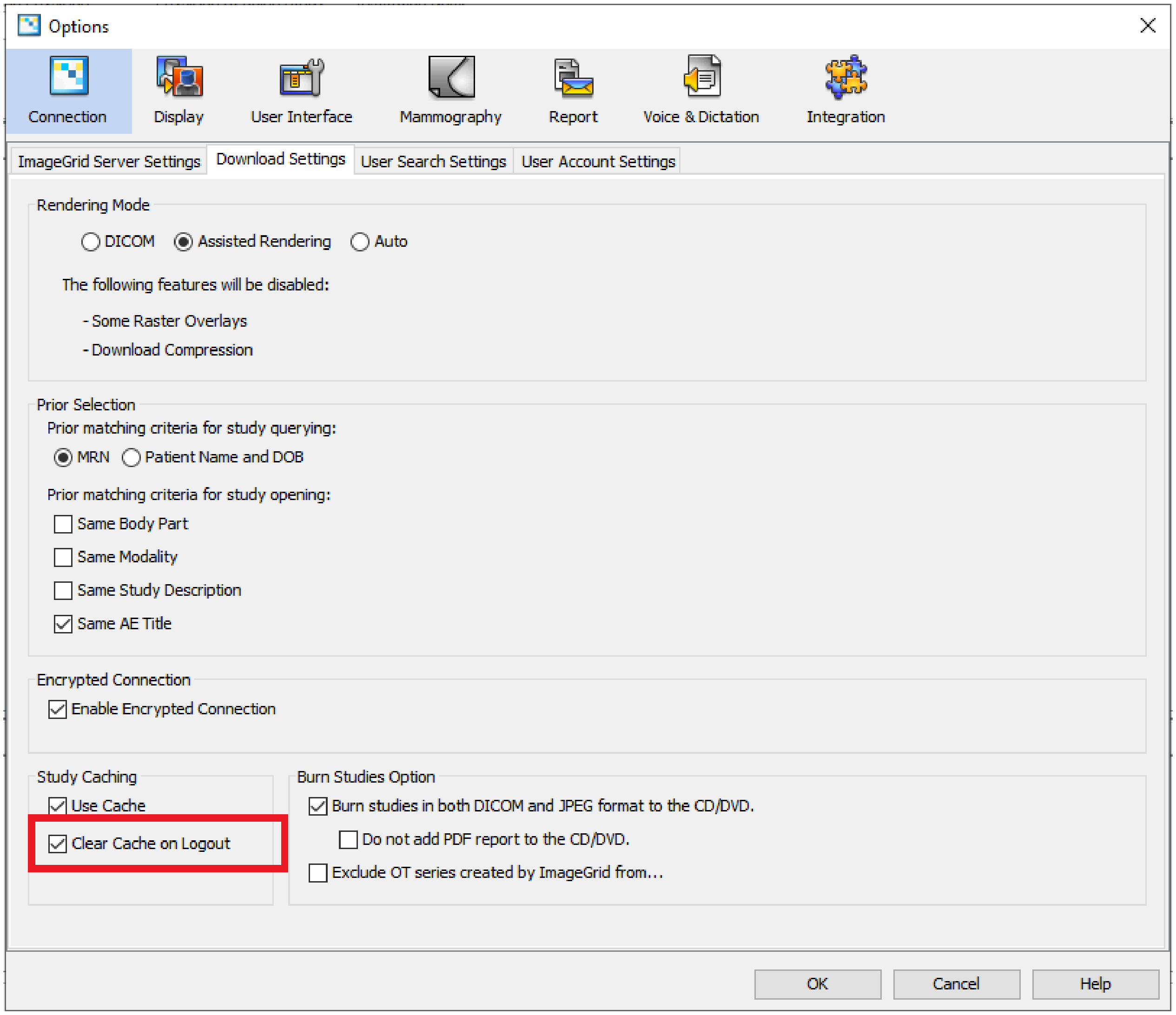
The configuration on the Platform side involves just creating a radiology worklist for Pending studies with a date range that includes "today". Once the worklist is configured and actively prefetching, the prior studies will be downloaded in the background according to the prior criteria set in the worklist. The list of priors that meet the criteria and the progress of their download could be observed in the Priors Worklist. It could be opened from Tools -> Radiology Worklist Manager -> Priors Worklist.



Name	AE Title	Study Status	Workflow State	Modalities	Study Date	Open at Login	Start Prefetch when Open	Public
3D US	ALL	ALL	ALL	US	ALL			
Pending Mammograms	ALL	Pending	ALL	MG	ALL			

Workstation Study Cache Management

Studies can be pre-fetched to the reading workstation as described in the previous section. This cache needs to be managed in order to prevent the disk from running out of space. The following option under Tools -> Options -> Connection -> Download Settings -> Study Caching determines how images get deleted from the workstation cache.

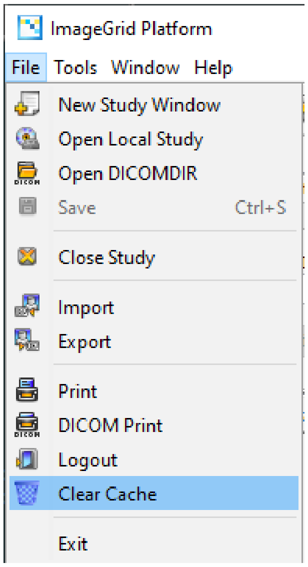


When checked, all studies get deleted from the workstation when a user logs out and the session is ended.

When un-checked, deletion of studies is managed by the ImageGrid Platform application. The status of studies, whether pending or read, is actively tracked. A set of studies belonging to a patient including current and prior studies gets deleted only when all studies are marked as read. The application scans the workstation cache once every 60 minutes and determines if there are any study sets that could be deleted and deletes them. No studies are deleted when a user logs out. This feature is particularly useful for radiologist reading workstations, where studies get read daily. It offers the advantage of not having to download a set of studies again and retains the study cache between user sessions. For example, if a radiologist has 20 current studies pending on their worklist at the end of a day, and they log out, the studies would be availble to read immediately when they login again the next morning. The studies would not need to be re-downloaded.

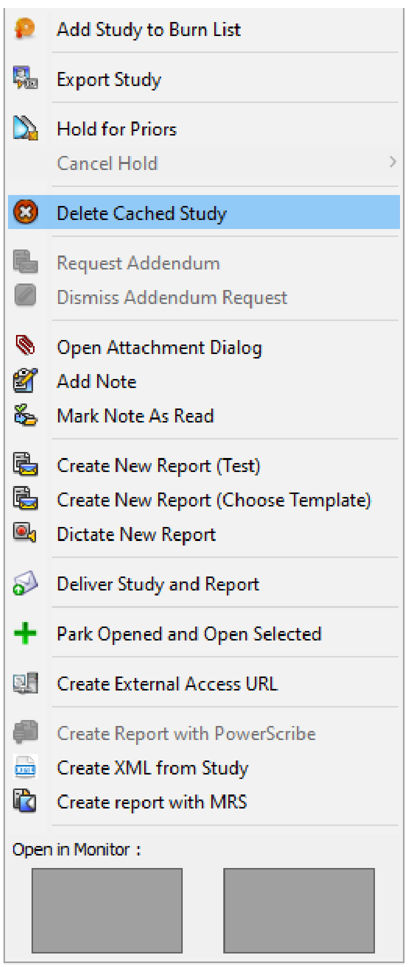
Clear Cache

All downloaded studies can be deleted manually using the Clear Cache option in the File menu.



Delete Individual Studies

A cached study can be deleted individually from the right click menu of the PACS View or a Radiology Worklist.

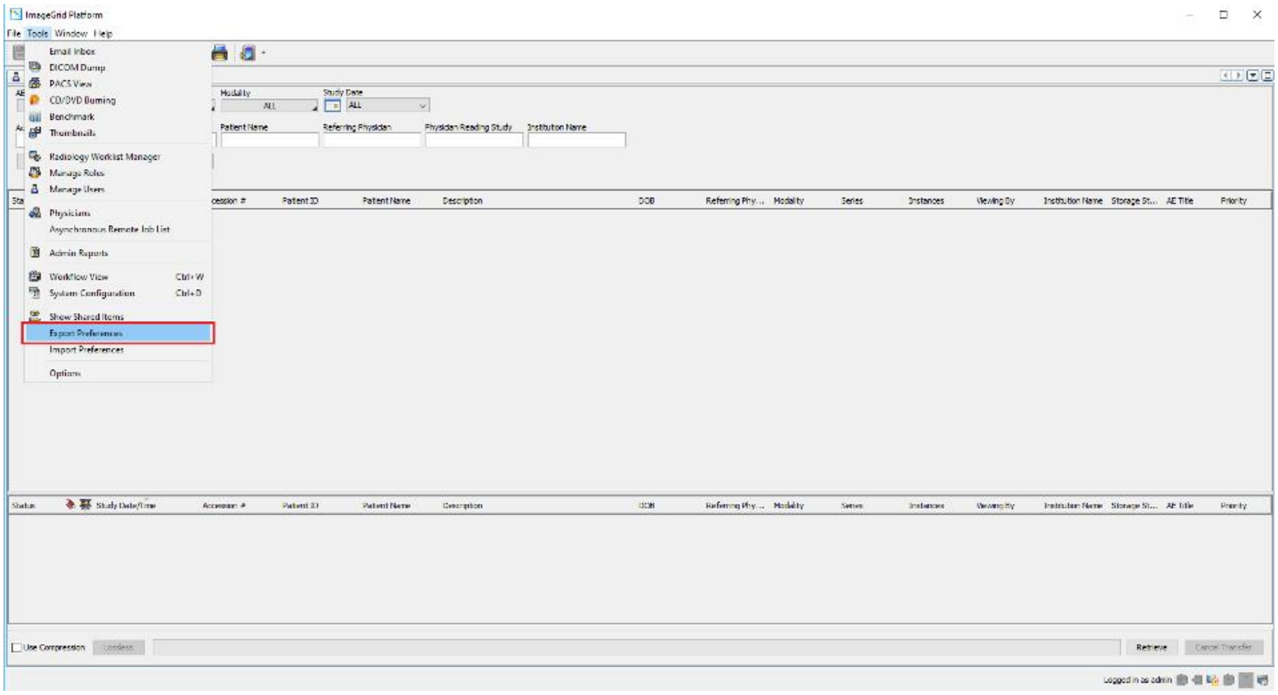


Transfer User Preferences

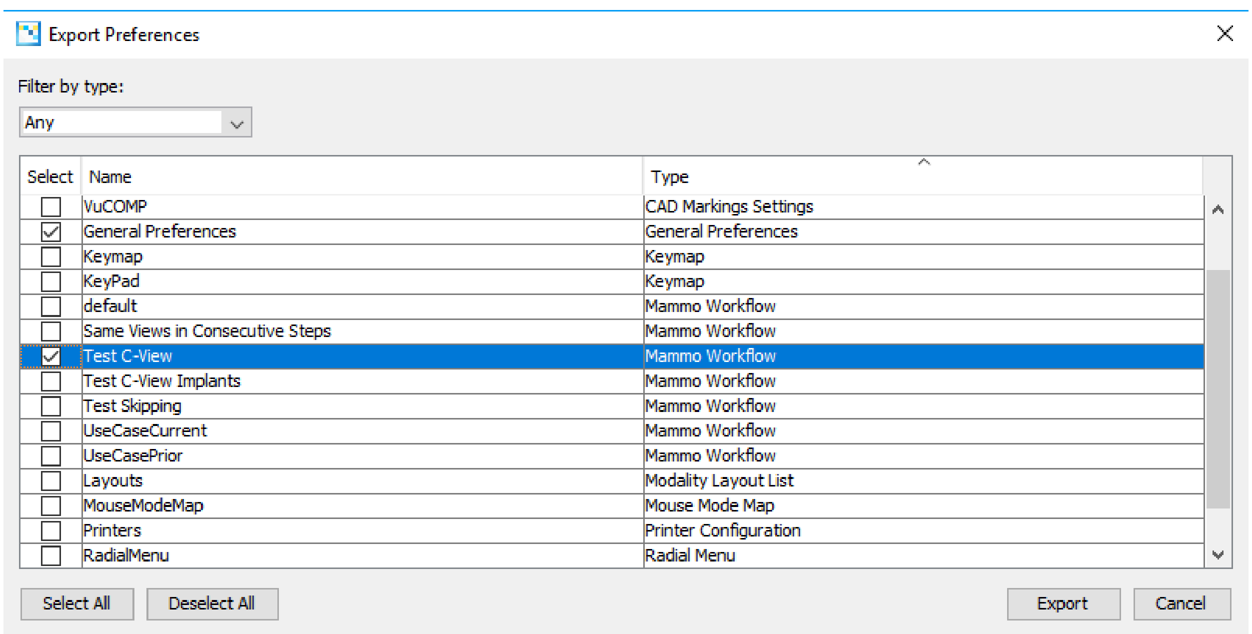
A user's preferences include Radiology Worklists (General Viewer), Hanging Protocols (Advanced Viewer), Mammography Workflows (Mammography Viewer), user interface settings such as toolbars, keyboard short-cuts, radial menu settings, display settings such as text overlays, study layouts and other miscellaneous preferences. ImageGrid Platform provides a tool that lets a user export their preferences and import them into another user's account. This ability proves quite useful for sharing important items between users.

Export Preferences

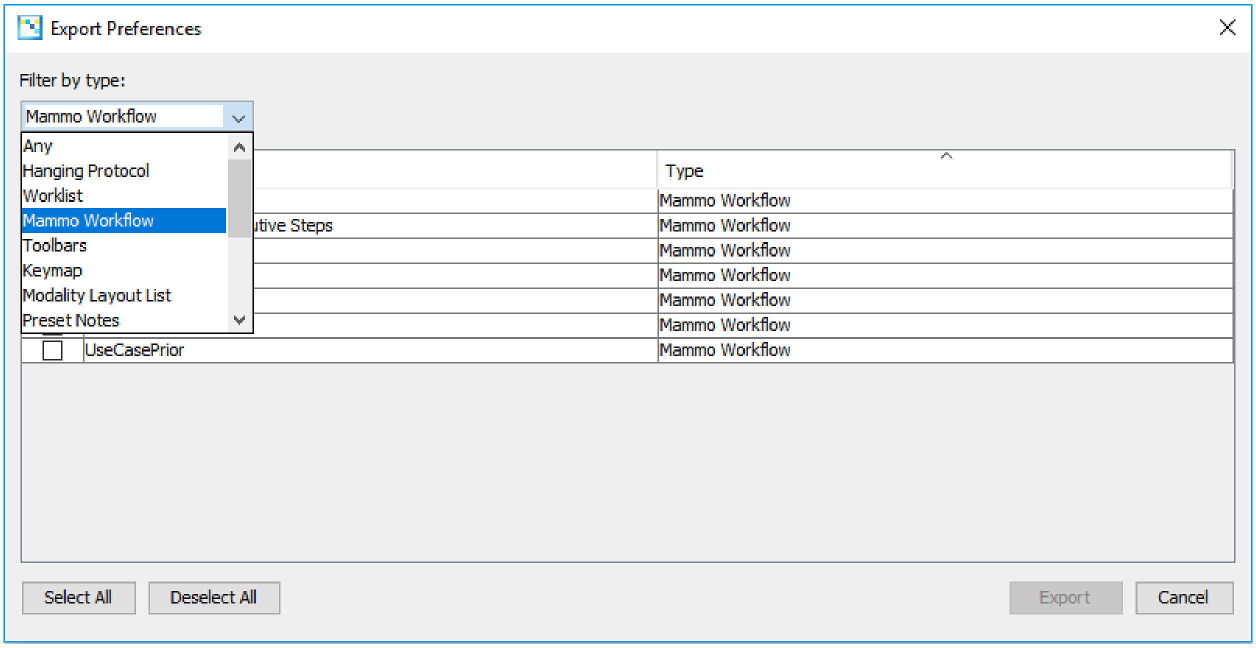
A user can save preferences of their choice to an XML file. Select Tools -> Export Preferences to begin the export process.



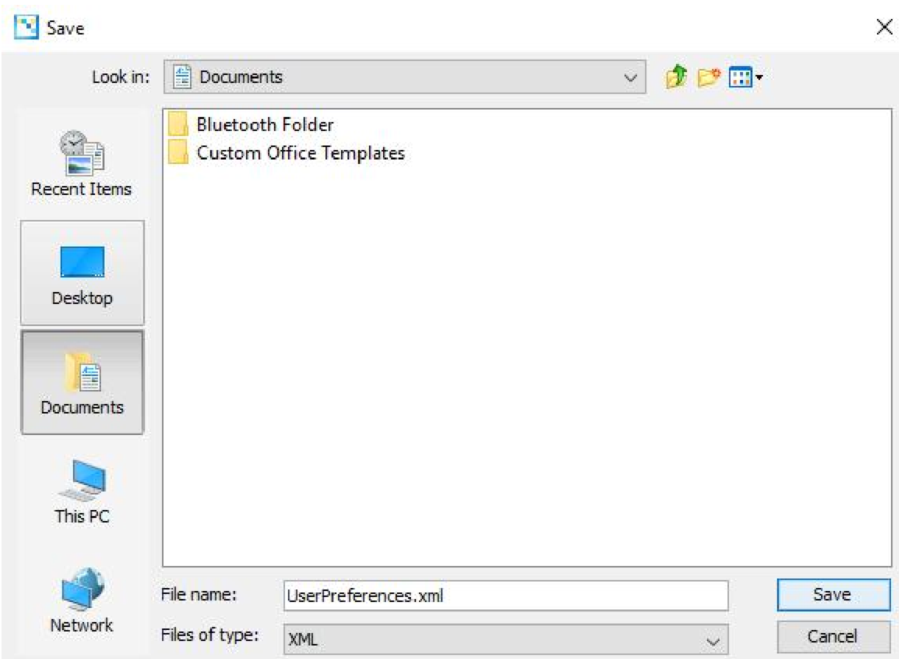
A dialog pops up with the list of preferences available for the user.



The user can select preferences to export by checking corresponding boxes in the first column. Preferences can be filtered to be displayed according to their categories.



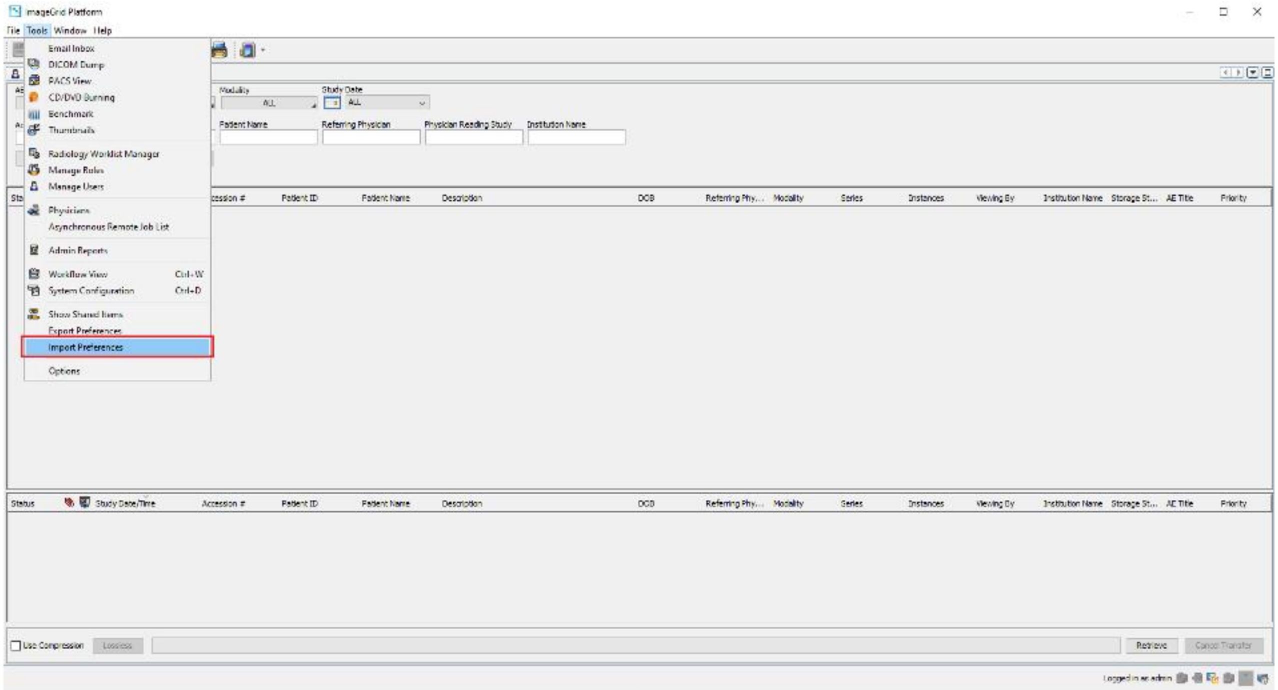
Once the preferences are selected, the user can click on the Export button to open a Save dialog. The user can then to navigate to a desirable directory and specify a name for the file to be saved.



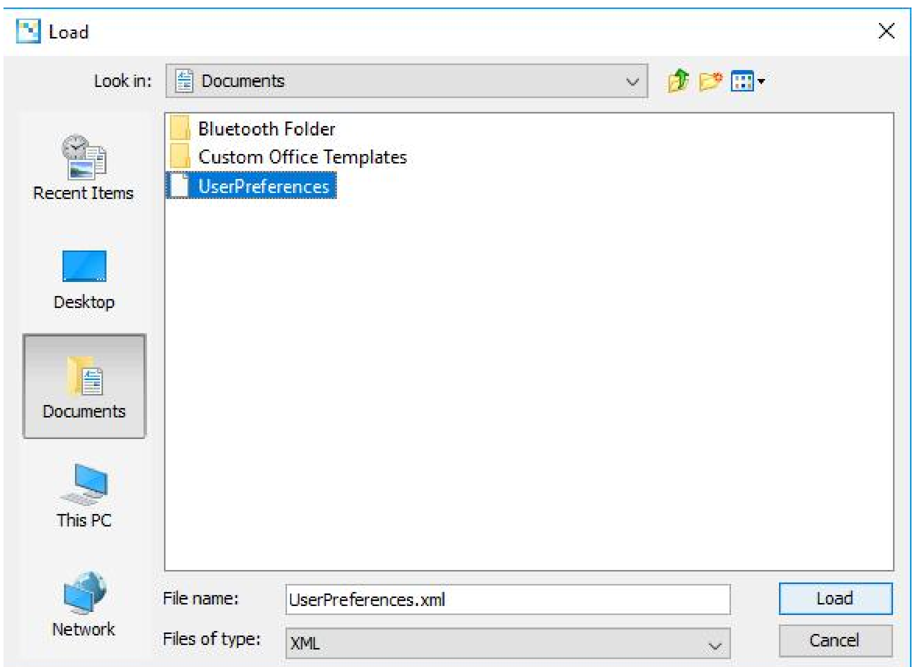
Clicking on the Save button, exports the preferences to an XML file at the specified location.

Import Preferences

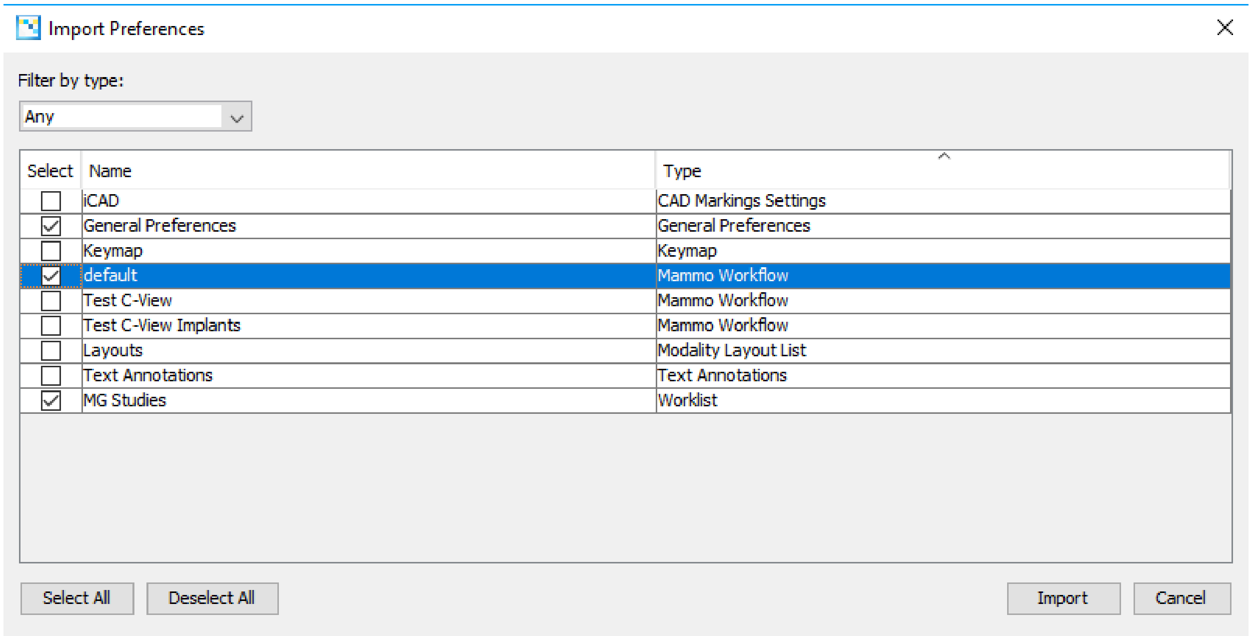
A user can load preferences from an XML file exported by another ImageGrid Platform user. Select Tools -> Import Preferences to begin the import process.



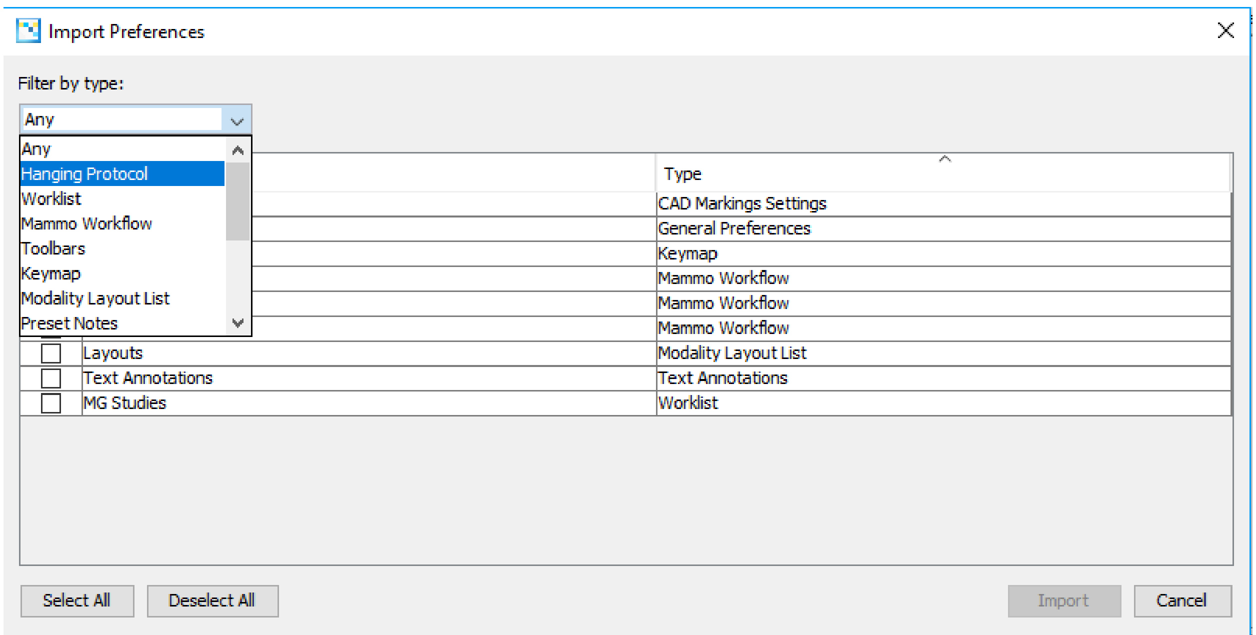
It prompts the user to choose a file to be loaded.



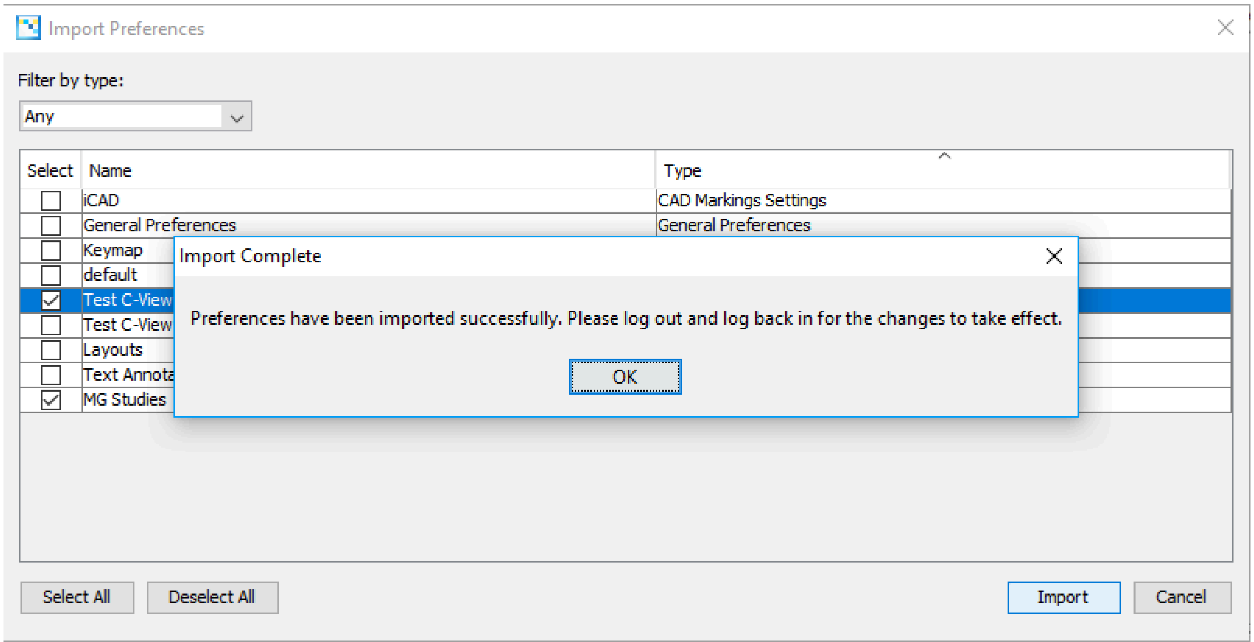
Loading an appropriate XML file pops up a dialog with a list of preferences available in the file to be imported.



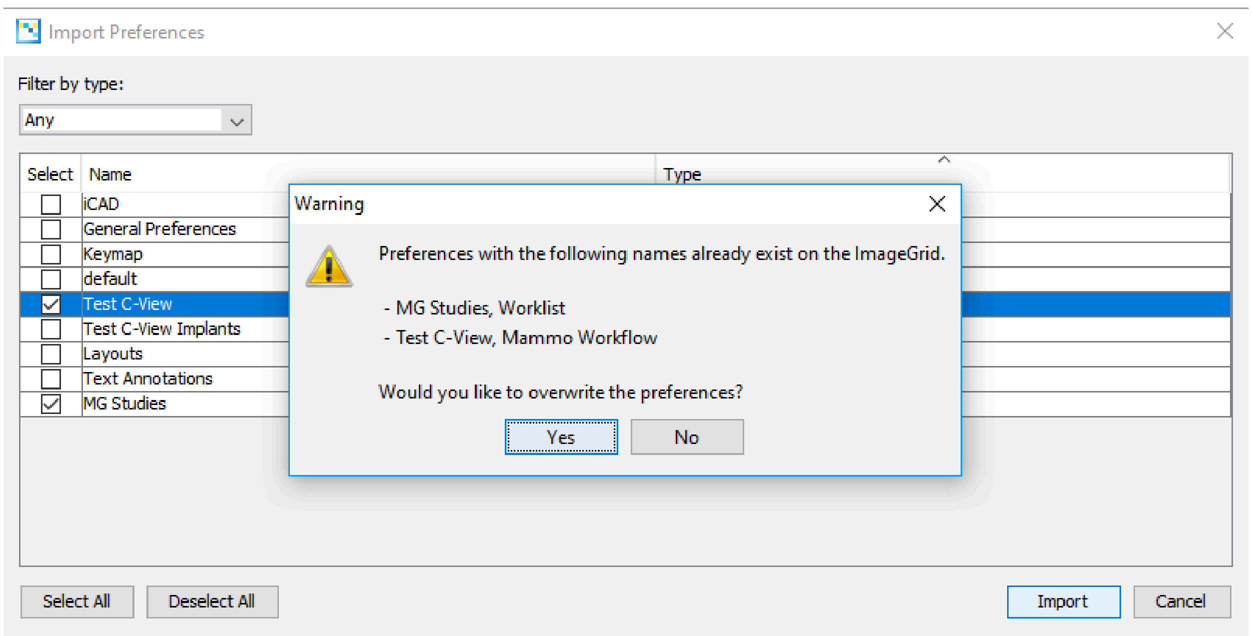
The user can select preferences to import by checking corresponding boxes in the first column. Preferences can be filtered to be displayed according to their categories.



The user can then import the selected preferences by clicking on the Import button. Some preferences take effect only when the user logs out and logs back in. Once the import is complete, a message gets displayed letting the user know about the same.



If there are preferences existing in the user's account which have names matching with any of the preferences being imported, a warning gets displayed informing the user about the name conflict. The user can then take an appropriate action.



ImageGrid Mammography Viewer

Image Viewing

To view a mammography study, open the study from the Search Window or a Radiology Worklist. The ImageGrid Viewer will download the current and prior studies specified from the Configuration Panel, and it will display the views specified in the first step of the chosen workflow.

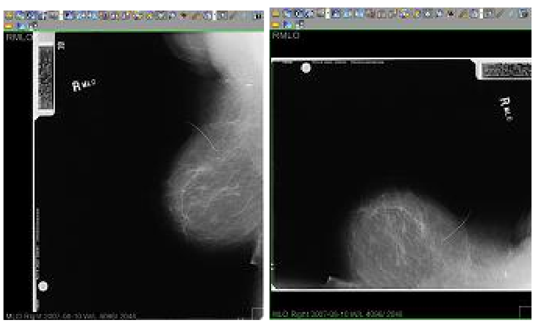
Basic Image Processing

Rotate, Invert, Flip

 **Rotate**

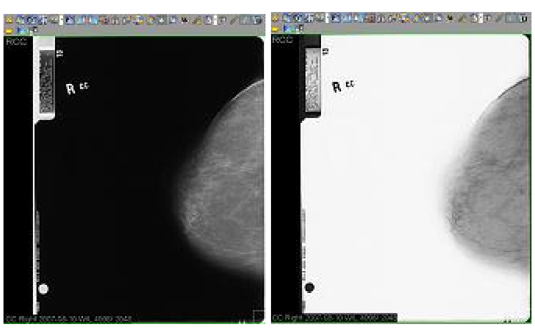
Select the image you want to rotate.

- Press the rotate left 90 degrees button in the top toolbar to rotate the image 90 degrees counterclockwise.
- Press the rotate right 90 degrees button in the top toolbar to rotate the images 90 degrees clockwise.
- The center of the rotation is always the center of the image. All the marks and graphic elements (line, arrow, ellipse and text annotations) will be rotated with the image.



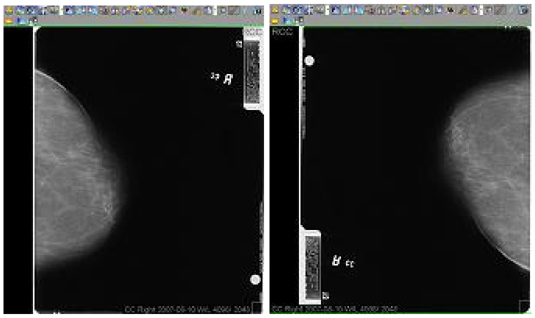
 **Invert**

- Select the image you want to invert.
- Press the Invert button in the top toolbar. The pixel values from the selected image will be inverted.
- Press the button again to deactivate the inversion, and the pixel values will be set to the original values.



 **Flip**

- Select the image you want to flip.
- Press the Flip Horizontal button in the top toolbar to flip the image around the horizontal axis.
- Press the Flip Vertical button in the top toolbar to flip the image around the vertical axis.



All the marks and graphic elements (line, arrow, ellipse and text annotations) will be flipped along with the image.

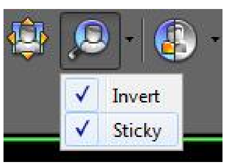
Pan, Magnification, Zoom

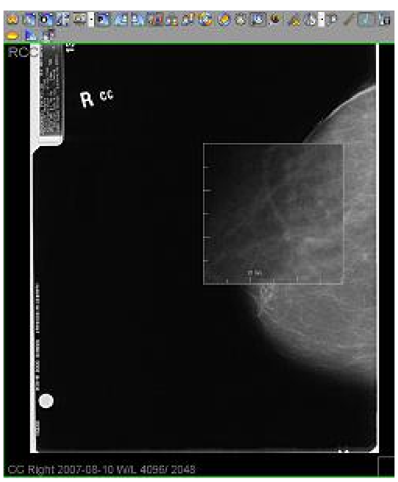
 **Pan - Left Mouse Button**

- Press the Pan button in the top toolbar.
- Place the mouse cursor on the image. Drag the mouse up, down, right, left by holding the left mouse button down to pan the image. All the marks and graphic elements (line, arrow, ellipse and text annotations) will be panned along with the image.

 **Magnification - Left Mouse Button**

- Press the Magnification button in the top toolbar.
- Place the mouse cursor on the image. Hold the left mouse button and move the mouse to the region of interest. All the marks and graphic elements (line, arrow, ellipse and text annotations) will not be shown when the magnifier is open.
- You can invert the magnified image with the invert dropdown button.
- You can also make the magnifier sticky with the sticky dropdown button. Sticky magnifier will preserve the magnified area on the image until the user double clicks on the magnifier.



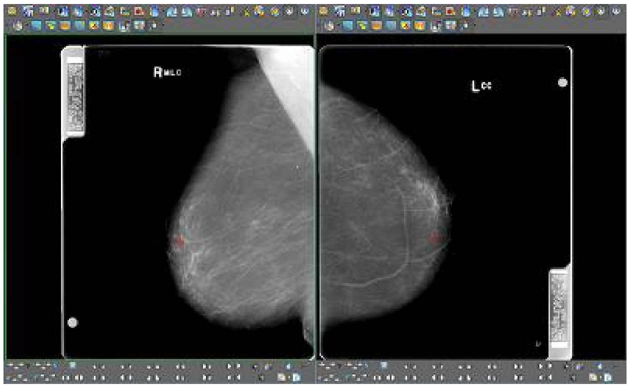


 **Zoom - Right Mouse Button**

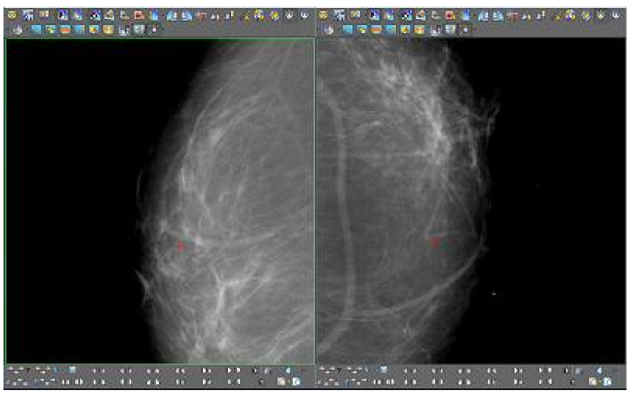
- Press the Zoom button in the top toolbar.
- Place the mouse cursor in the region of the image. Dragging upwards on an image with the right mouse button depressed will now zoom in, and similarly, dragging downwards will zoom out.
- You can also use mouse wheel to zoom in/out of an image.
- You can anchor the zoom center by holding the Control key and clicking an image with the zoom button. Zooming in and out will now be performed centered around the anchor point. You may delete the anchor point by selecting an anchor with the mouse and pressing the delete button. Click on the Clear all anchors dropdown button to clear all anchors.

- You can synchronize zoom with other images by checking the Synchronization dropdown button. Images will zoom synchronously around the anchor point.

Before Zoom



After Zoom

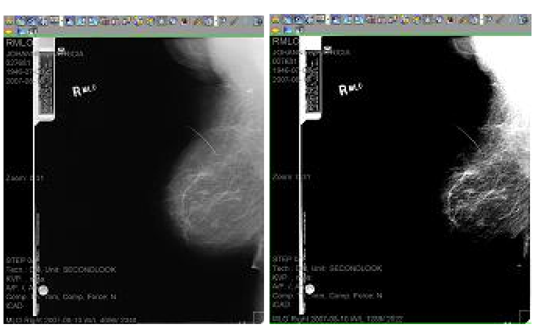


Window/Level

Window/Level has two values: window center and window width. Window center defines the center grayscale value you want to see for an image. The smaller the window center is, the brighter the image will be. Window width defines how many grayscale values above and below the center value you want to see. The smaller the window width is, the stronger the contrast will be. You can see the window/level values set in the bottom corner of the images.

 **Window/Level - Right Mouse Button**

- Press the Window/Level button in the top toolbar.
- Place the mouse cursor on the image. Moving up/down the mouse on an image with the right mouse button depressed will change the level (brightness center), and similarly, dragging right/left will change the window width (contrast range).



Reset Window/Level

- Press the Reset Window/Level button ( ) in the bottom toolbar. The window/level of all the images will be reset to be default value.
- You can also select one single image you want to reset and use the reset Window/Level dropdown button to reset that particular one.
- Press the Step thru Window/Level ( ) button in the bottom toolbar. The window /level of all the images will cycle through a sequence of preset values.

Probe - Left Mouse Button

With the probe tool, you can have the values of pixels that are of interest.

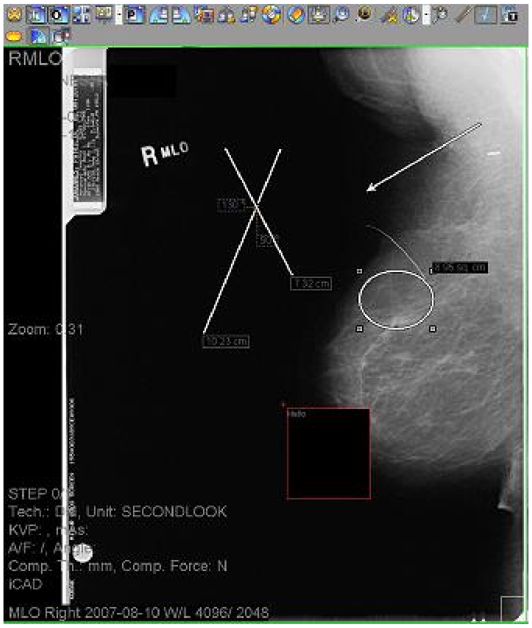
- Press the Probe button in the top toolbar.
- Click on the image with the left mouse button. The pixel value at the position of the mouse in the image will be displayed.

Annotations

Annotation Tools

Annotation tools are accessed via the top toolbar:

- Clear All Annotations - Removes all unsaved annotations in the active display.
- Line Annotations Tool - Allows drawing of lines by dragging with the right mouse button.
- Arrow Annotations Tool - Allows drawing of arrows by dragging with the right mouse button.
- Ellipse Annotations Tool - Allows drawing of ellipse by dragging with the right mouse button.
- Cobb Angles - Renders intersecting lines with the angles between them when turned on.
- Text Annotations Tool - Adds a text annotation when clicked with the right mouse button at the desired location on the image.



With the Line, Arrow or Ellipse Annotations tool selected, press the right mouse button and drag. The selected shape will be added to the active image. Release the mouse button to stop drawing.

To resize a shape, click the right mouse button on one of its endpoints and drag.

To move a shape, click the right mouse button on the shape and drag to the desired position.

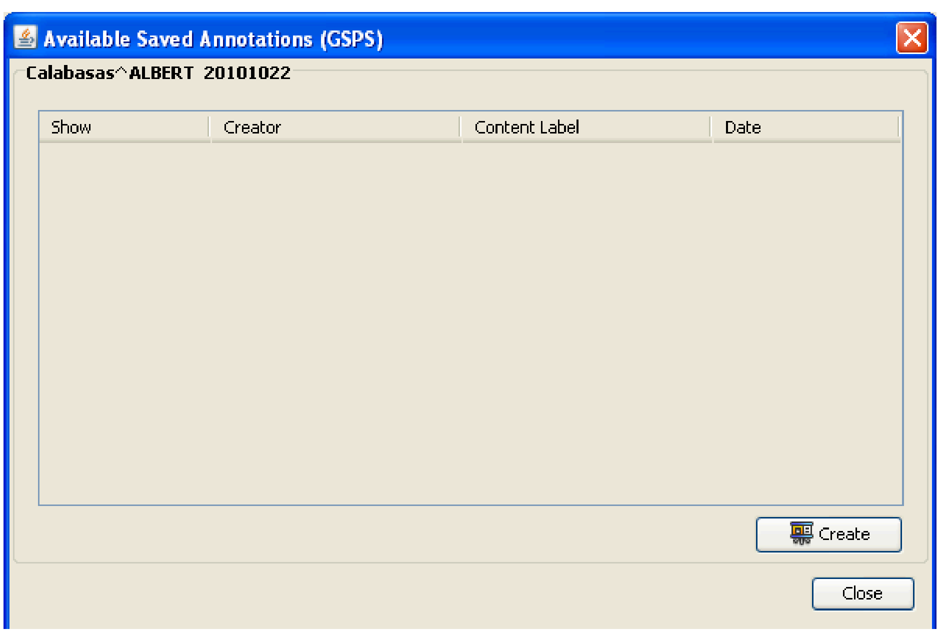
To delete a selected shape, press the Delete key on the keyboard.

The state of the Cobb Angles button is maintained between user sessions, i.e., if a user logs out, the state of this button (ON or OFF) is saved and it is restored when the same user logs in again.

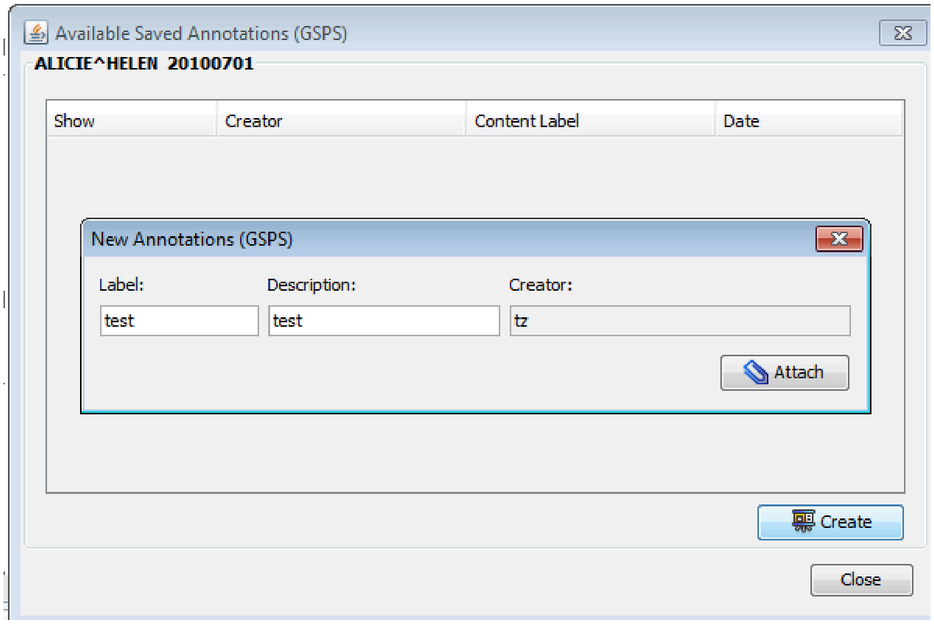
Saving Annotations - Grayscale Softcopy Presentation State (GSPS).

Annotations and window/level information can be saved as a Grayscale Presentation State (GSPS). These files contain information about shapes and texts added to the image. If saved, they will be sent to the ImageGrid and stored for later viewing.

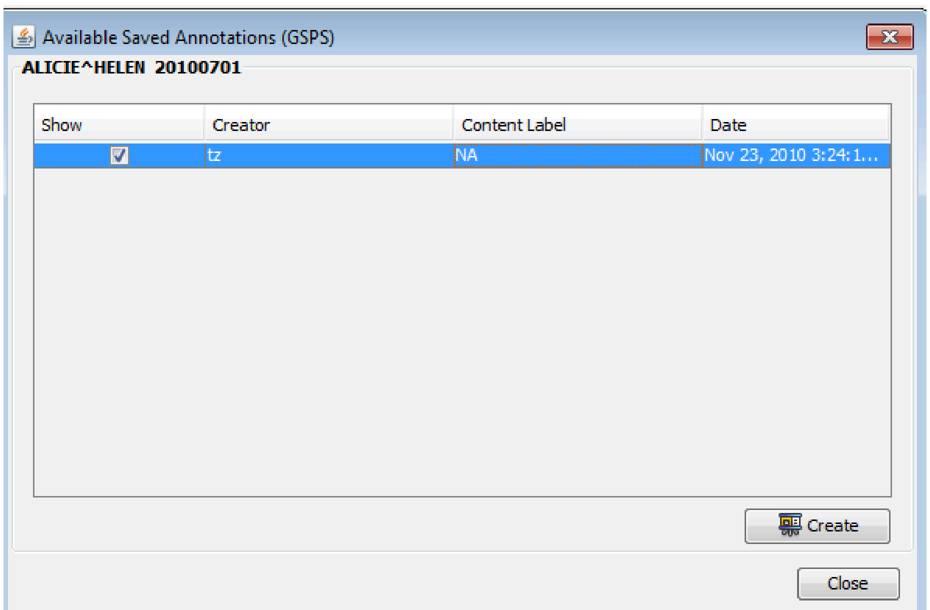
Click the Save Annotations (GSPS) button in the top toolbar (). The Available Saved Annotations dialog will be shown:



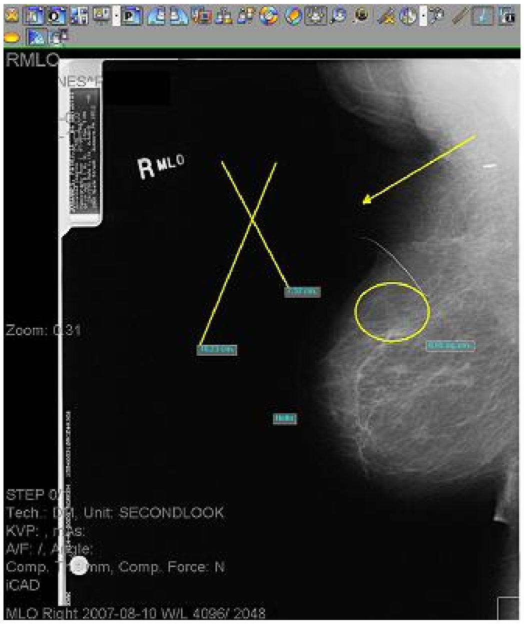
This dialog allows the user to create Presentation States using the buttons shown. Click on the create button, you will be able to create a GSPS by giving a label and name to it.



If there is no annotation, a warning box will show.

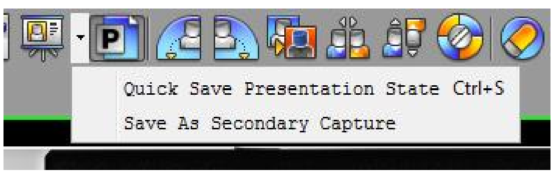


In the GSPS list, each Presentation State may be shown or hidden by clicking the appropriate check box in the left-most column of the table. To quickly save annotations, use the keyboard shortcut (by default CTRL+Q), or select "Quick Save Annotations (GSPS)" from the drop down menu next to the Save Annotations (GSPS) icon on the imaging toolbar, then the GSPS will be saved with a default name.



Secondary Capture

To save a secondary capture image of the selected display, select "Save As Secondary Capture" from the drop down menu next to the Save Annotations (GSPS) icon on the top toolbar.

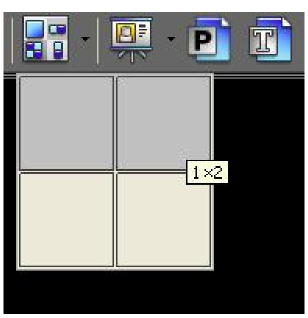


The secondary capture image will be added to the study as a new instance in a new series and saved to the ImageGrid.

Other Tools

 **Layout**

- Select the monitor you want to lay out.
- Click on the "Layout" button, and a menu will pop up.
- Select the desired layout, and the layout of the current monitor will be changed.

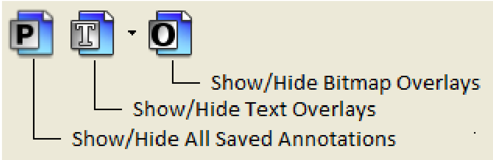


 **Overlays**

There are three optional sets of data which can be rendered as overlays on top of visible image data:

- Annotations (GSPS)
- Text Overlays and Patient Demographics
- Bitmap Overlays

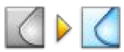
Turning these overlays on and off is achieved by clicking the appropriate button on the top toolbar:



 **Reset Image Settings**

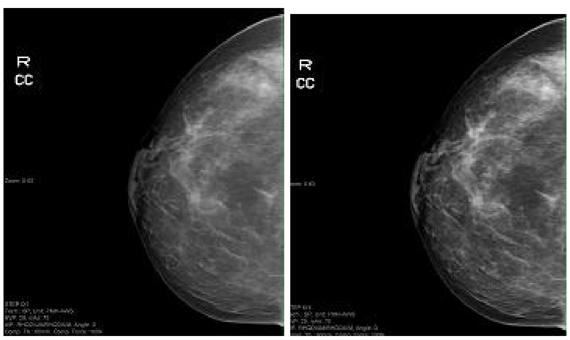
- Select the image you want to reset.
- Press the Reset Image Settings button in the top toolbar to reset the image to its initial state.

With the reset function, you can reset the image to its original state. Once the reset button is pressed, all the image processing actions (rotate, flip, invert, pan, zoom, window/level, CLAHE) will be removed but all the annotations will be kept. This reset function cannot be undone.

 **CLAHE**

CLAHE stands for Contrast Limited Adaptive Histogram Equalization. CLAHE is a technique used to improve the local contrast of an image. It is a generalization of adaptive histogram equalization and ordinary histogram equalization.

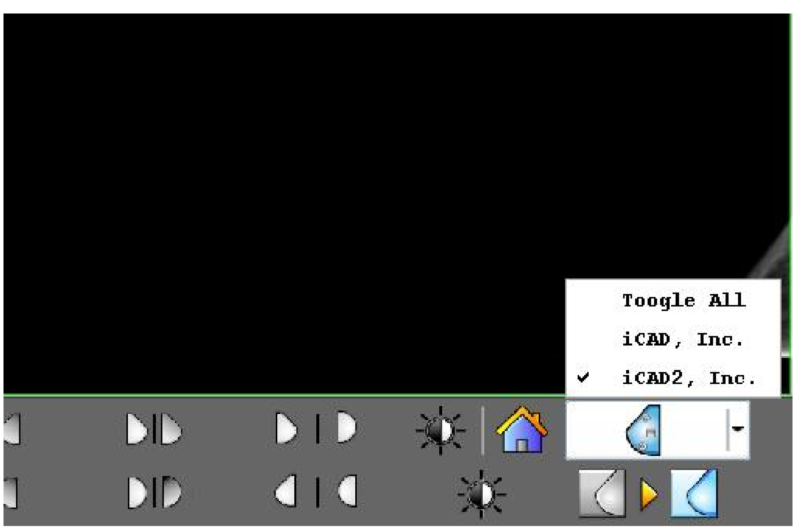
- Press the CLAHE button in the bottom toolbar. CLAHE will be applied to all the images.



 **Toggle CAD Markings**

The ImageGrid Mammography Viewer can display CAD generated by iCAD and R2 appliance. To display CAD information, press the CAD button in the bottom toolbar, and the markings and a summary of number of markings will be shown on corresponding images. A detailed structure report of CAD can be viewed from the Attachment Panel.

The ImageGrid Mammography Viewer supports multiple CAD runs in the same study. To select/unselect the CAD Markings associated to the different runs use the drop down in the right part of the CAD button.



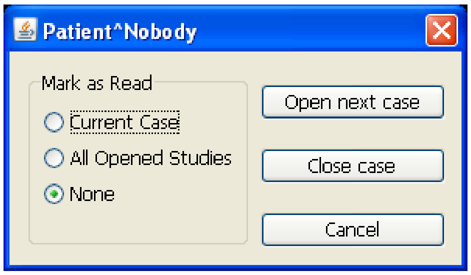
 **Structured Roaming**

The "Toggle Roaming" button on the top toolbar activates/deactivates the structured roaming maps on both monitors. When zooming in, the actual display area is indicated in the roaming map. This feature allows the user to know which part of the image they are looking at.

Left-click dragging on the roaming window will move the roaming window over the mammography image. Right-click dragging on the roaming window will move the mammography image so that the center of the image is located at the mouse cursor. Double clicking a roaming window will close all of the roaming windows.

 **Close Study**

To close the study, press the close button on the top toolbar, and a dialog with a number of options will show up.



If "Mark READ" is selected, all the studies opened (including priors) are marked as READ. If "Open Next" is selected, the viewer will close the current study and automatically open the next study in the radiology worklist that the current study is opened from.

Right-click Pop-up Menu

Upon right-clicking on any mammography image, a menu with several options will pop up.

The first part of the menu contains some commonly-used tools. The user can select these tools from the menu instead of the toolbar.

The second part of the menu provides the Zoom Preset options. The Zoom Preset section lets the user change the way images will be scaled and centered on the viewports. The options are following:

- **Whole Image**: The whole image is scaled to fit on the screen.
- **Fit to Viewport**: The outline of the breast will be detected and the image will be resized to fill as much of the viewport as possible.
- **True Size**: The image will be resized to be displayed so that one centimeter on the screen corresponds to one centimeter on the image.
- **Full Resolution**: The image will be resized to be displayed so that one pixel on the screen corresponds to one pixel on the image.

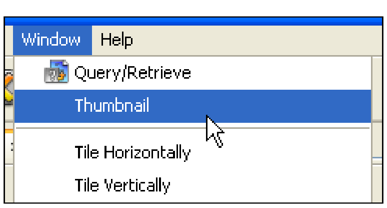
If "Synchronized Zoom Presets", is selected, zoom presets will be applied for on the screen at once. If not, it will just change the zoom preset for the active image.

The last part of the menu lists all opened Mammography studies. If more than one prior study is downloaded, the user can set the active prior from here. The setting is temporarily applied to the pre-defined views and will not override the default active prior setting.

The user can also select any view to display in the viewport from the list.

Thumbnail Tool

Activate the thumbnail tool by clicking "Thumbnail" on the Window menu:



The thumbnails panel is displayed. Each opened study contributes one tab to this panel. Each tab contains one thumbnail icon per series in the appropriate study.

The name of the view is shown on top of the images.

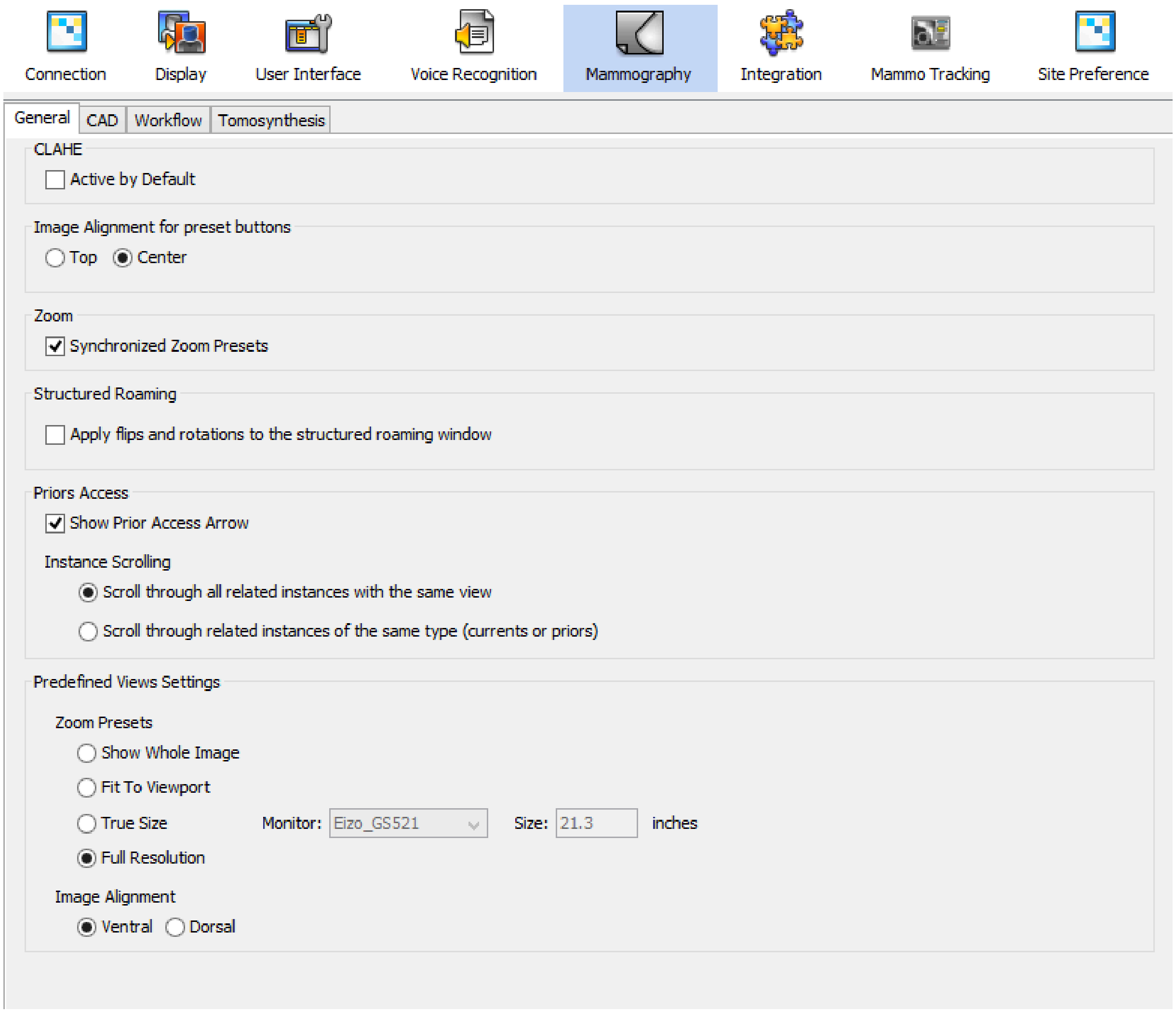
At a given time, those series that are visible will be colored with green edges.

Those series that have been displayed at least once will be marked with a green check on the bottom right corner.

Drag one of the thumbnails into a viewport to load the depicted series there.

Mammography Configuration

To set Mammography specific configurations, select Tools > Options from the application menu and select the Mammography > General tab. In this tab, the user can set the initial configuration for the image viewing options and other settings for Vertical Image Alignment, Zoom, Structured Roaming, and Predefined View.



Initial Configuration

The Initial Configuration section lets the user configure the way images will be viewed.

- **CLAHE**: The "Activate CLAHE" check box, if selected, will apply the CLAHE algorithm every time an image is shown on the screen.
- **Priors Access**: The "Show Priors Access" check box, if selected, will enable the Priors Access function every time a study is opened. With the Priors Access function, the user can go over the related priors by clicking on the arrow icons on the screen or by scrolling the mouse wheel while holding down the SHIFT key.

Vertical Image Alignment

The Vertical Image Alignment specifies the relative vertical alignment of the image in the viewport when it is opened.

- **Top**: It will align the image to the top corner of the viewport.
- **Center**: It will align the image to the center of the viewport.

Zoom

If "Synchronized Zoom Presets", is selected, zoom presets will be applied on both screens at once. If it is not selected, changing the zoom preset will only change the zoom preset for the active image.

Structured Roaming

If "Apply flips and rotations to the structured roaming window", is selected, applying flips and rotations from the top toolbar will flip and rotate the structured roaming image.

Predefined View

The Predefined View section lets the user change the way images will be scaled, centered, and aligned on the viewports when using the predefined views on the bottom toolbar.

- **Zoom Presets**
  - **Whole Image**: The whole image is scaled to fit on the screen.
  - **Fit to Viewport**: The outline of the breast will be detected and the image will be resized to fill as much of the viewport as possible.
  - **True Size**: The image will be resized to be displayed so that one centimeter on the screen corresponds to one centimeter on the image.
  - **Full Resolution**: The image will be resized to be displayed so that one pixel on the screen corresponds to one pixel on the image.
- **Image Alignment**
  - **Ventral**: It will show right views on the left viewports and left views on the right viewports.
  - **Dorsal**: It will show right views on the right viewports and left views on the left viewports.

  The inner sides of the breasts will be facing each other in each case.

Workflow Designer

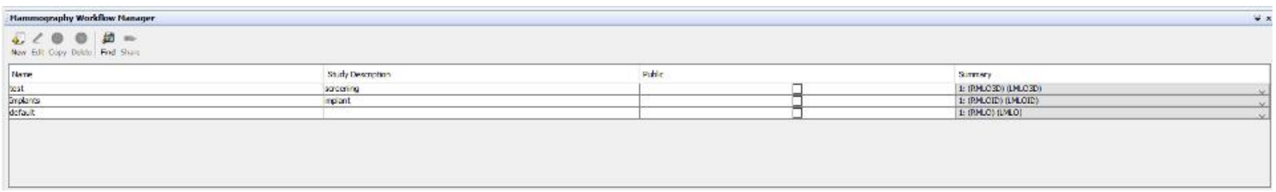
The ImageGrid Mammography Viewer allows the users to define their routine Mammography study reading procedures in a *workflow* (Mammography Hanging Protocol). A workflow consists of several steps, and in each step the user can specify which views to display and image processing applied on the views.

Mammography workflows are created and managed via the Mammography Workflow Manager interface. Open it by Selecting Tools > Mammography Workflow Manager from the main application menu.

Mammography Workflow Manager

The Mammography Workflow Manager presents several options via the toolbar and allows the user to modify options for the chosen workflow selection criteria. Please refer to the 'Workflow Configuration' section for details regarding the workflow selection criteria.

Study Description Criteria



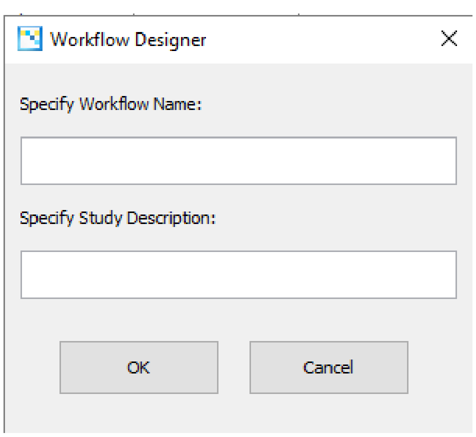
The user can specify a keyword to be searched in a study's description in the Mammography Workflow Manager table by double clicking on the Study Description column of the desirable workflow. The description can also be specified while creating a new workflow. If the keyword of a workflow is present in the description of a study, then the study gets opened with that workflow set to be active.

Screening-Diagnostic Criteria

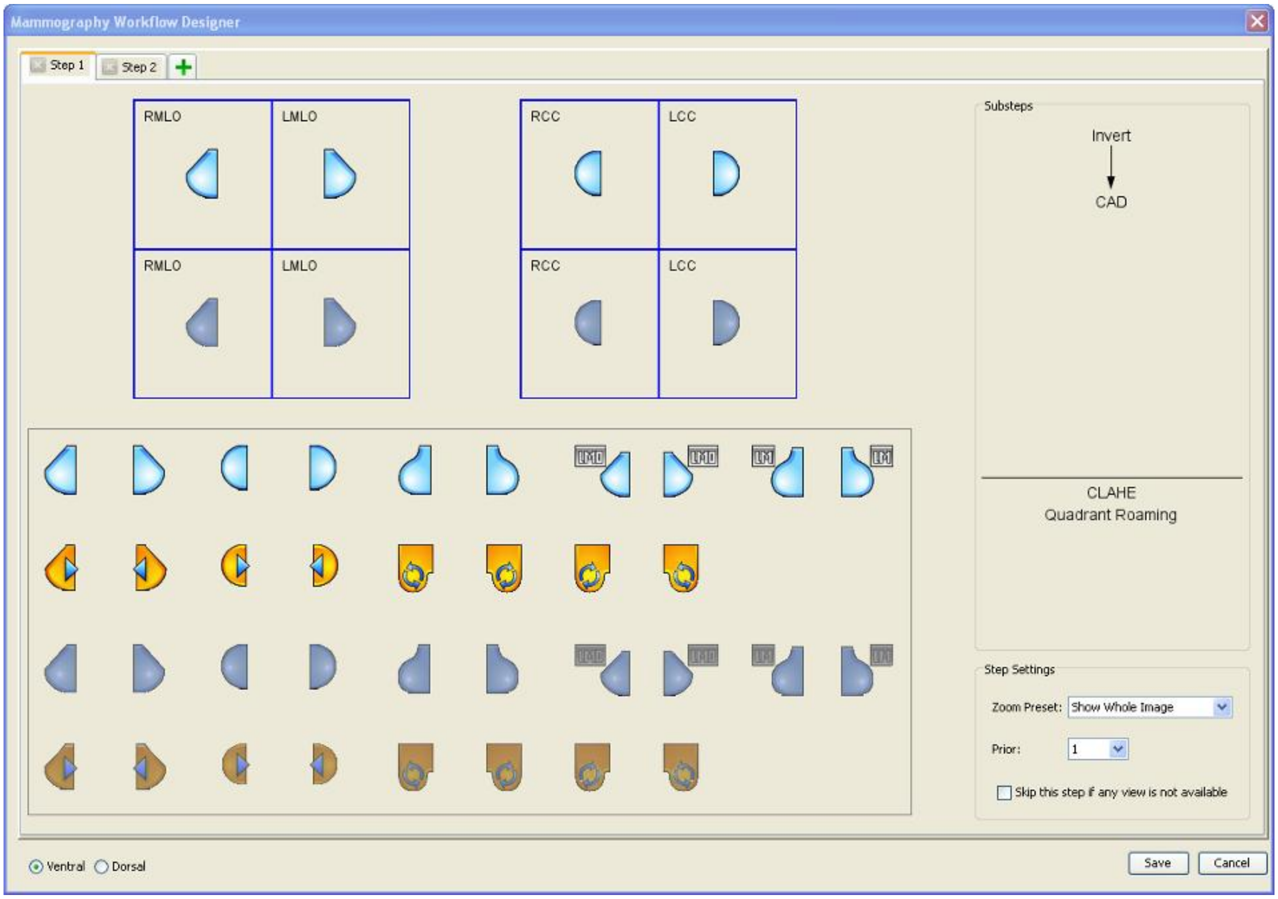
The user can select what workflow is going to be used for screening and diagnostic cases. That decision can be made based on two different tags, and the user can make this selection using the dropdown in the Workflow tab under Tools > Options from the application menu and selecting the Mammography > Workflow tab.

- ***Mammography Image Type****: The ImageGrid Viewer will use a private DICOM tag (0041, 1002) to differentiate screening and diagnostic studies. If the tag is not present, the study is viewed as diagnostic case.*
- ***Reason For Study****: The ImageGrid Viewer will use the tag 'Reason For Study' (0032, 1030) to differentiate screening and diagnostic studies. If the tag is not present, the study is viewed as a diagnostic case.*

Creating Mammography Workflows



To create a new workflow, click on the New button on the Mammography Workflow Manager toolbar and enter the name for the new workflow when prompted. The workflow designer will be shown.



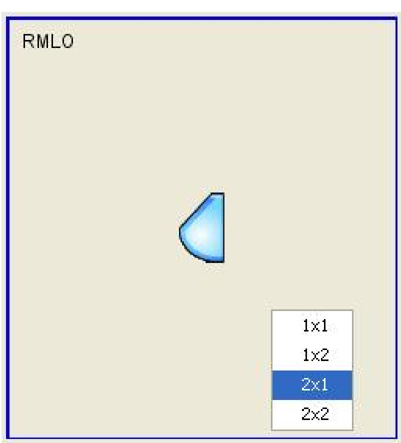
Create or Delete a Workflow Step

Each tab in the workflow designer window defines a step of the workflow. To insert or create a new step, right click on the top of the window and select the desired option, or click on the "+" button to add a new step to the end. To delete a step, click the "x" on the tab.

Design a Workflow Step

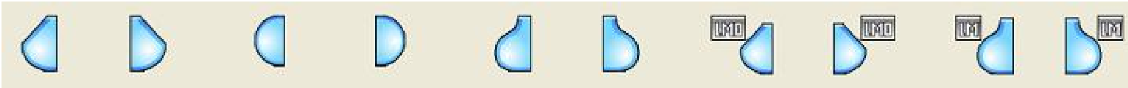
The two panes in each step panel correspond to the left and right diagnostic monitors.

Different layouts can be set for each monitor. To set the layout, right-click on the empty area of a pane and choose the layout from the pop-up menu.

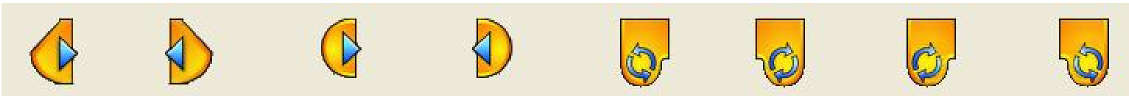


Below the panes are the set of available mammography views which may be applied to the steps. The first two rows of views represent current views, and the last two rows are the corresponding priors. To view a view in the step, simply drag and drop the corresponding view icon to the two panes.

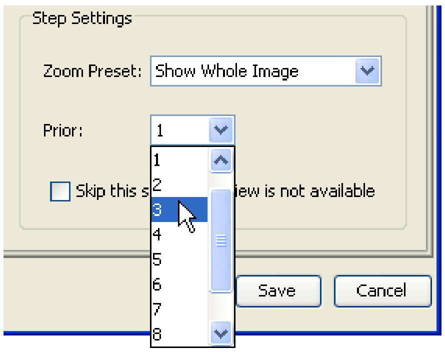
Views in the first row (from left to right): RMLO, LMLO, RCC, LCC, RML, LML, RLMO, LLMO, RLM, and LLM.



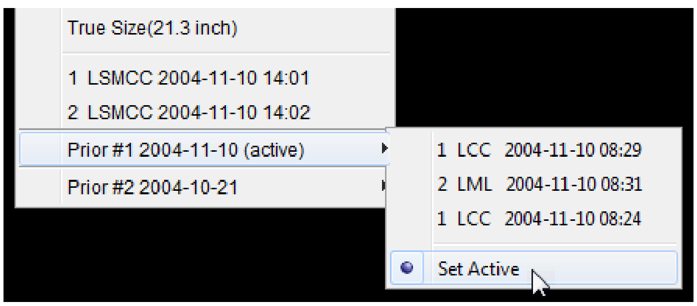
Views in the second row (from left to right): RMLOID, LMLOID, RCCID, LCCID, RCCRL, LCCRL, RCCRM, and LCCRM.



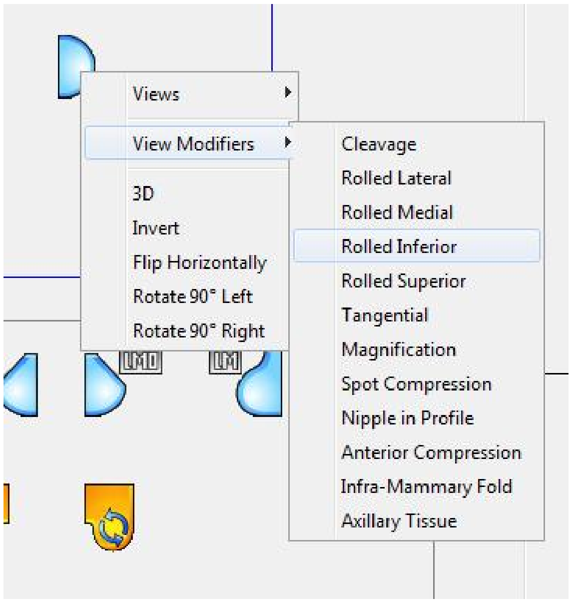
When viewing a prior view, the user can select which prior to be displayed for each step from the "Prior" option on the bottom-right corner of the window. The options include the Active Prior, which is set as the most recent prior as default, and priors 1 to 10. The priors are organized from newest (1) to oldest (n, being n the total number of priors on a given patient).



If the Active Prior has been selected for the current step, at any point of the workflow, the active prior can be changed by selecting a prior from the popup menu.



Special views or view modifiers can be selected by right-clicking on the view icons in the panes. For example, if the user want to have FB, SIO, or exaggerated views, he/she can drag a CC icon to a pane, right-click on the icon, and select views and then the view he/she wants. For Magnification or Spot Compression, drag any view icon to the pane, right-click on the icon, and select view modifiers and the modifier he/she wants.

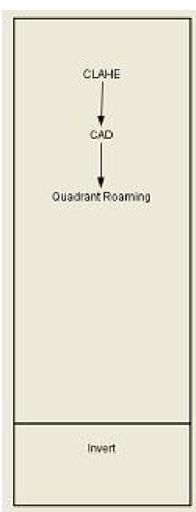


Sub-Steps

On the right side of the window the user can find the sub-step designer with four options:

- **Quadrant Roaming**: It shows the four quadrants of the images sequentially. This is normally used to see and compare the same sector of currents and priors at the same time.
- **Invert**: It inverts all the images currently being displayed.
- **CLAHE**: It applies the CLAHE image enhancement algorithm on all the images being displayed.
- **CAD**: It displays the CAD overlays on all the images currently being displayed.

To create new sub-steps in a step, simply drag and drop the options from the lower area into the upper area. To remove a sub-step, drag and drop the option from the upper area to the lower area. When going through the workflow steps, the sub-steps are executed in the order specified in the upper area.



Configurations

In the designer, There are some configurations that the user can set for a workflow or a workflow step.

- **Ventral/Dorsal**: In the bottom-left corner, the user can choose to use ventral or dorsal hanging. When Ventral is selected, the right views are displayed as the nipples facing to the left, and left views are displayed as the nipples facing to the right. When Dorsal is selected, the views are displayed in the opposite direction as in ventral hanging.
- **Zoom Presets**: In the bottom-right corner, the user can set the default zoom preset for this step.
- **Skip Step**: In the bottom-right corner, there is a check box where the user can choose whether to skip this step. When the check box is selected, if there is one or more views specified in this step do not exist in the opened study, the step will be skipped.

When the design of the workflow is done, click the save button, and the workflow will be saved in the ImageGrid that the user is connecting to.

Editing Mammography Workflows

To edit an existing workflow, select the workflow in the Mammography Workflow Manager, and click the Edit button on the toolbar. The Workflow Designer window will be displayed for editing.

Copying Mammography Workflows

To create a copy of an existing workflow, select the workflow in the Mammography Workflow Manager, and click the Copy button on the toolbar.

To simply rename an existing workflow, double click on its name in the Mammography Workflow Manager, specify a new name and press Return.

Deleting Mammography Workflows

To delete an existing workflow, select the workflow in the Mammography Workflow Manager, and click the Delete button on the toolbar.

Workflow Navigation

There are four tools that are used to walk through the workflow steps:

- **Go to Selected Step** - Clicking this button will display a list of all workflow steps. Select the step that you want to jump to from the list and the views of the selected step will be displayed on both monitors
- **Go to Home Step** - Clicking this button will display the views of the first step in the workflow.
- **Go to Next Step** - If there is any sub-step in the current step, the viewer will execute the next sub-step. If there is no sub-step or all sub-steps in the current step have been executed, the views of the next step will be displayed on both monitors.
- **Go to Previous Step** - The views of the previous step will be displayed on both monitors

Pre-defined Mammography Views

The ImageGrid Viewer has a set of pre-defined Mammography views that can be quickly accessed from the bottom Mammography toolbar:

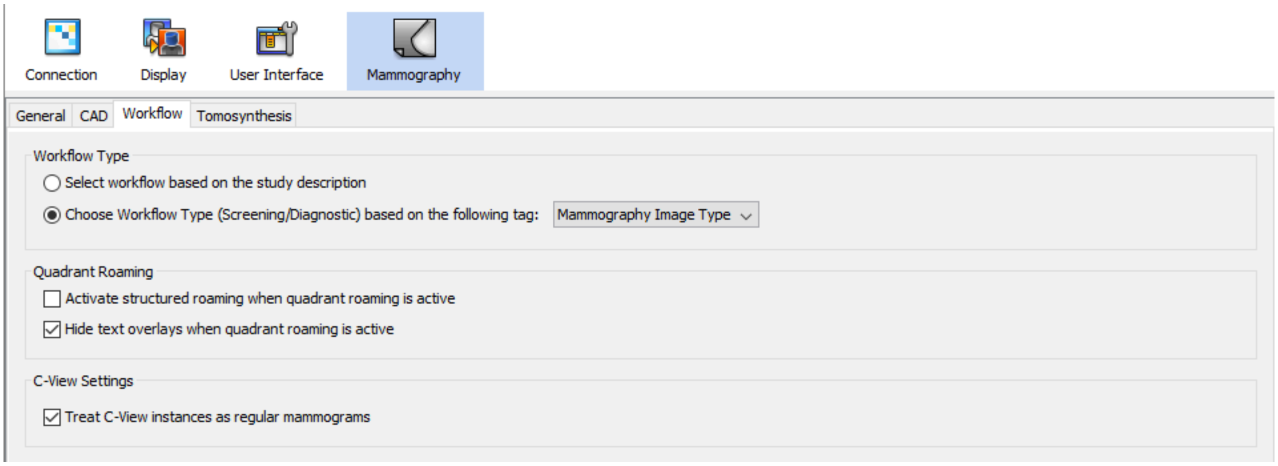
- Show MLO and CC
- Show RMLO and LMLO
- Show MLO Prior
- Show RCC and LCC
- Show CC Prior
- Show RML and LML
- Show ML Prior
- Show RCC Current/Prior
- Show RMLO Current/Prior
- Show LCC Current/Prior
- Show LMLO Current/Prior
- Show RMLO and RCC
- Show LMLO and LCC

Upon clicking on each icon, the view(s) on the left of the line in the icon will be displayed on the left monitor, and the view(s) on the right will be displayed on the right monitor.

The dorsal/ventral and active prior settings are applied to these pre-defined views.

Workflow Configuration

To set Workflow specific configurations, select Tools > Options from the application menu and select the Mammography > Workflow tab. In this tab, the user can set configurations for Workflow Type and Quadrant Roaming.



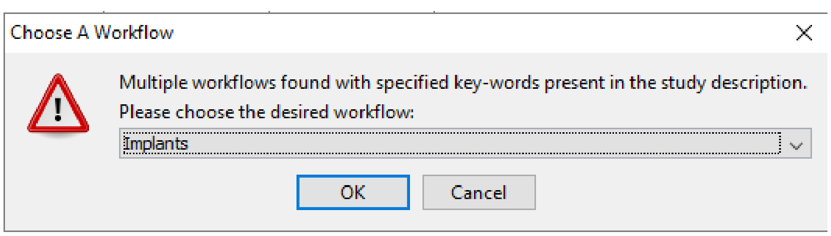
Workflow Type

The user can select the workflow selection criteria. A workflow may be selected based on either the presence of specified keywords in the description of a study or the screening-diagnostic tags available in a study's metadata.

Study Description Criteria

A workflow can be chosen from a list of available workflows based on the description of a study. The user can specify a certain keyword for each workflow. If the description of a study

- contains the keyword associated with a workflow, then the study is opened with that workflow set to be active.
- contains the keywords associated with multiple workflows, then the user is presented with an option to choose one workflow.



- does not contain any keyword specified, then the study is opened with the default workflow set to be active.

Screening-Diagnostic Criteria

The user can select what workflow is going to be used for screening and diagnostic cases.

That decision can be made based on two different tags, and the user can make this selection using the dropdown in this panel.

- **Mammography Image Type**: The ImageGrid Viewer will use a private DICOM tag (0041, 1002) to differentiate screening and diagnostic studies. If the tag is not present, the study is viewed as diagnostic case.
- **Reason For Study**: The ImageGrid Viewer will use the tag 'Reason For Study' (0032, 1030) to differentiate screening and diagnostic studies. If the tag is not present, the study is viewed as a diagnostic case.

Quadrant Roaming

- **Structured Roaming**: The user can activate structured roaming when the quadrant roaming sub step is active.
- **Text Overlay**: The user can hide text overlays when the quadrant roaming sub step is active.

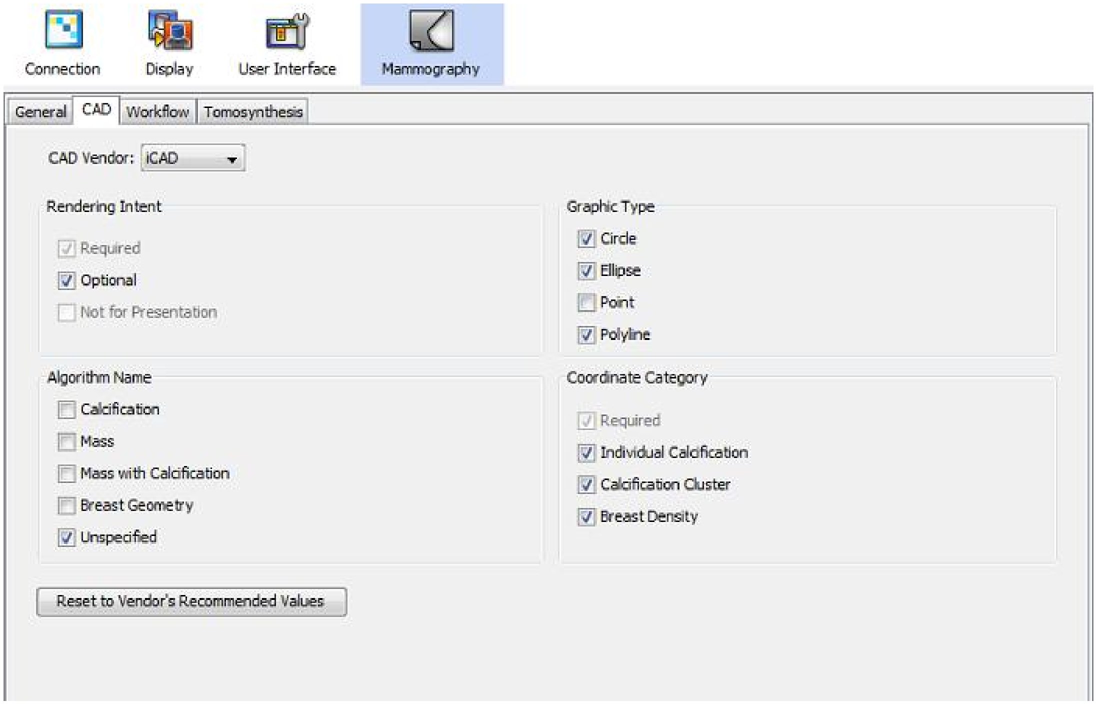
C-View Settings

This option enables the user to not distinguish between C-View instances and regular 2D instances. When this box is checked, a C-View modifier added to a workflow step is ignored. Regular 2D instances and C-View instances, if present, are both displayed in such steps alike.

CAD Markings

The ImageGrid Mammography Viewer allows the users to display any CAD markings on the images, as long as they are present in the Structured Report attached to the corresponding study. Along with that, the user can also select the type of markings (Circles, Ellipses, Polylines or Points) that will be displayed when the CAD Button in the bottom toolbar is toggled.

In order to do that, select Tools > Options from the application menu and click on the Mammography > CAD tab.



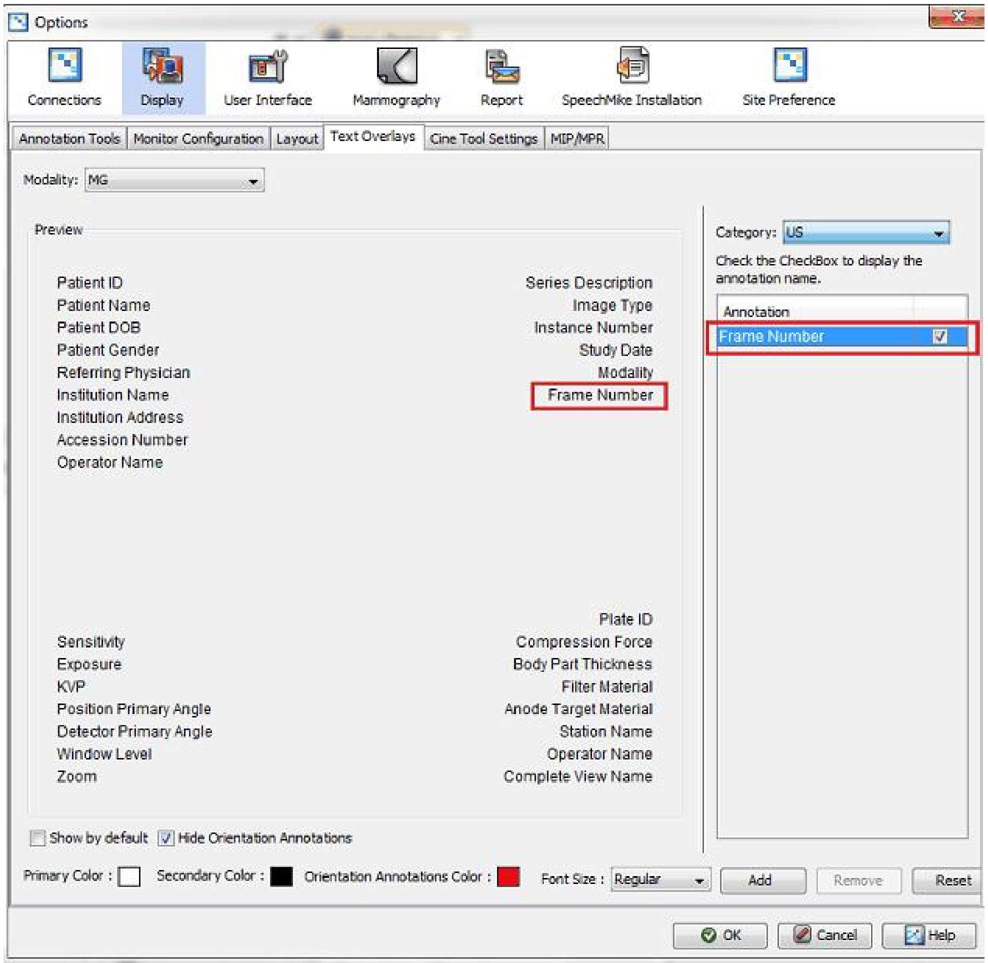
Tomosynthesis Image Viewing

To view a Tomosynthesis study, open the study from the Search Window or a Radiology Worklist. The ImageGrid Viewer will download the current and prior studies specified from the Configuration Panel and it will display the views specified in the first step of the same workflow chosen in mammography viewer.

Frame information

Text Overlays

Selecting the Customize Overlays submenu will popup up the Text Overlays panel. Select Frame number under US submenu and move it into the preview panel. Click on OK to apply any modifications.



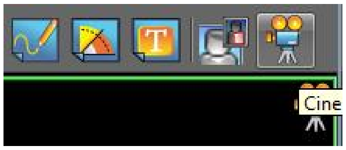
Current frame information will show as text overlays along with the images

Scrolling Frames

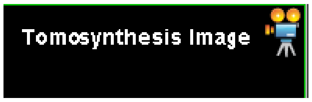
We offer three ways to browse through Tomosynthesis image frames.

Cine Tool

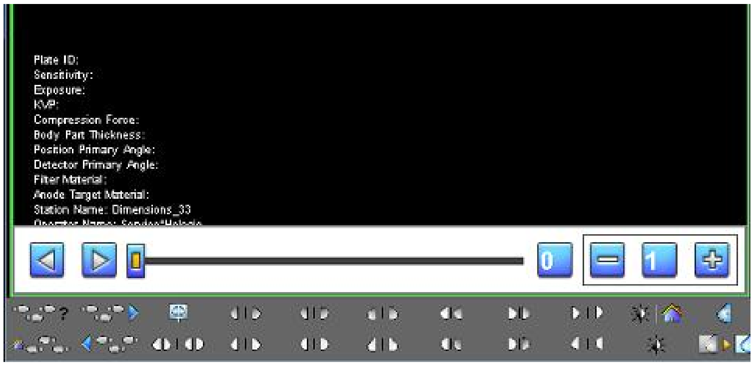
To use the cine tool, click on the cine tool icon on the imaging toolbar:



A cine icon will be displayed in the Tomosynthesis image viewports:



Activate the Cine Panel by moving the mouse to the bottom of the viewport:



A Tomosynthesis image can be played forward or backwards. Playback can be started by clicking once on one of the two buttons shown above. Clicking a second time pauses playback.
Also, the user can manually scroll through all the frames of a Tomosynthesis image by using the slider. The text box next to the slider shows the frame-rate suggested by the DICOM tags. Before or during playback, the frame-rate can be changed using the "+" and "-" buttons. The actual frame rate during playback is displayed in the text box in between these two buttons.

Mouse Wheel

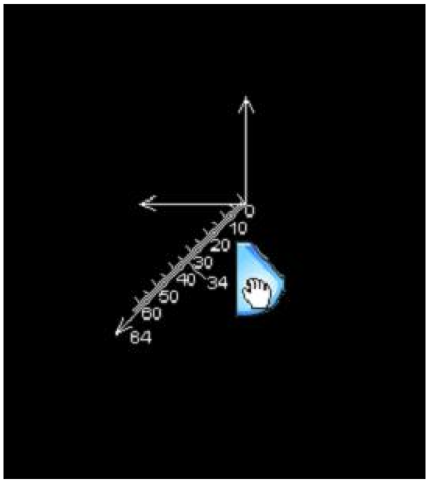
When the mouse cursor is on top of a tomosynthesis image, hold the CTRL key on the keyboard and use the mouse wheel to scroll to the previous/next frame of the current image.

Axes Tool

To use the axes tool, click on the axes tool icon on the imaging toolbar:

The Tomosynthesis Axes will appear in the Tomosynthesis image viewports. Each tick on the axes corresponds to a frame sliced on that direction.

Place the mouse cursor on the icon with a shape of breast. Dragging the icon with mouse button pressed will scroll through all the frames of a Tomosynthesis image. The current frame number is indicated by the number displayed on the left of the icon.



Besides, the Tomosynthesis Axes can be dragged to any location of the image viewports with the mouse button pressed on any other position except the icon of the axes.

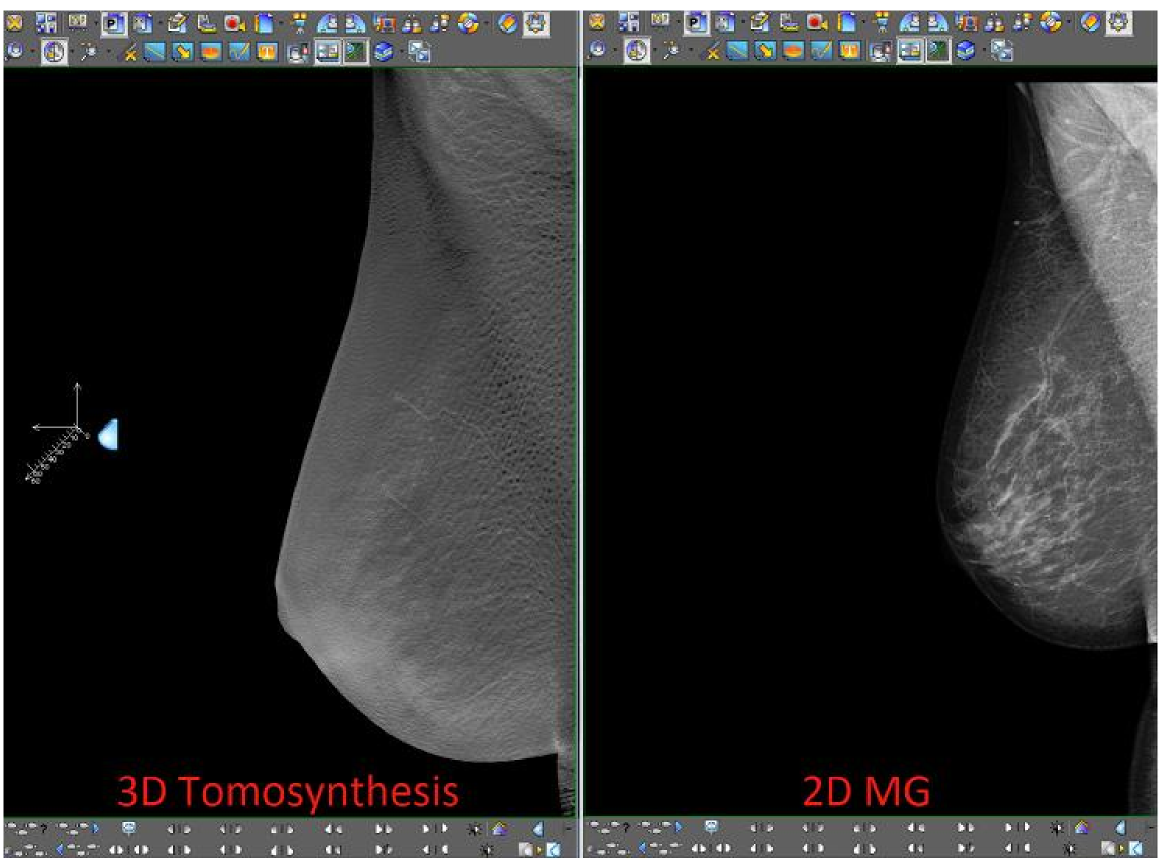
Toggle 2D/3D Views

To use the Toggle 2D/3D tool, click on the toggle tool icon on the imaging toolbar:

This tool consists of 2 states: switch and restore.

Switch State

When the user opens a study/navigates to a new Mammo Workflow step/gets back to the current Mammo Workflow step, the tool is set to switch state. That is, clicking this icon will switch between the 2D MG image and the 3D Tomosynthesis image in the active viewport, if available.



By default, toggled image will be displayed with "Fit to Viewport" zoom setting.

This operation is not applicable to the following conditions:

- Empty Viewport.
- Selected image is C-View Image.
- Selected image is Secondary Capture.
- Selected image does not have Tomosynthesis image (or its corresponding 2D MG image) in this study.

A message at the bottom right corner will be displayed to notify users that this operation "Cannot switch between 2D and 3D Views" if any of the conditions mentioned above is met. Specific reason will be displayed as well.

If a switch state operation is not successful due to the inapplicable conditions, the state will not change.

Restore State

After switch state, if this icon is clicked again, this tool will be set to restore state. That is, clicking it again will restore the current Mammo Workflow step (just like getting back to the current Mammo Workflow step).

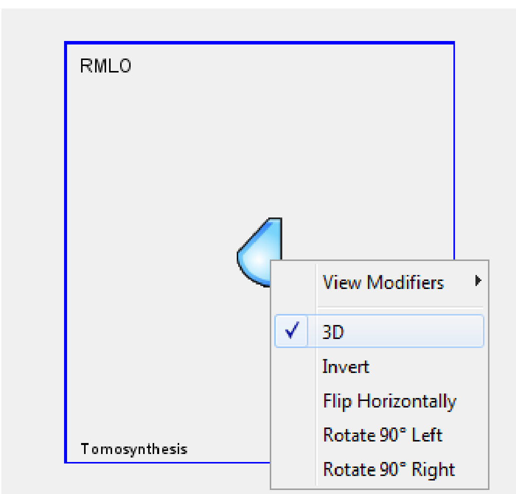
Please note that any of the following operations performed between the switch state and restore state will be lost once the Mammo Workflow step is restored:

- Pan.
- Rotate Left/Right.
- Flip Horizontal/Vertical.

The two states will switch back and forth continuously if user keeps clicking it.

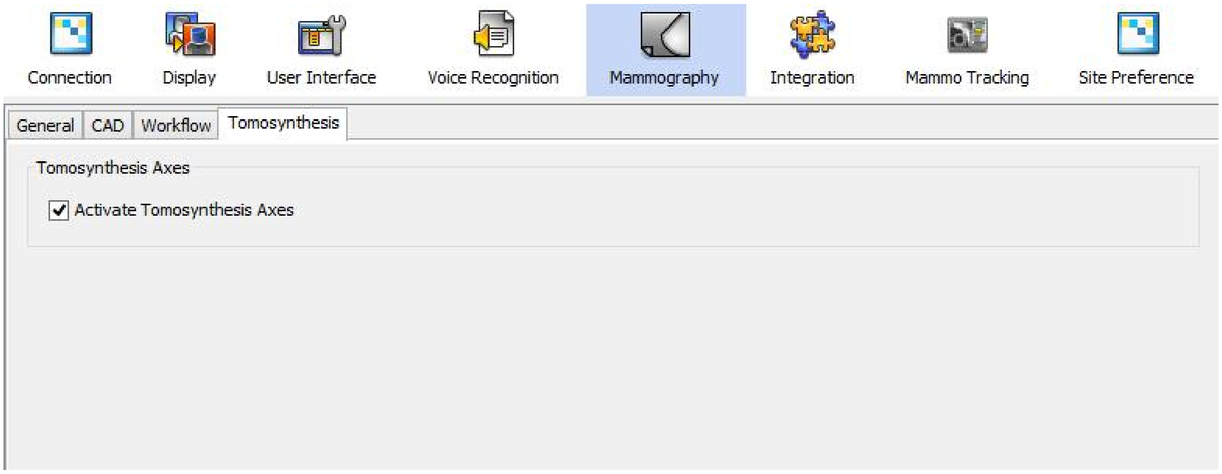
Designing Tomosynthesis Workflow Step

To design a Tomosynthesis specific workflow step, right-click on the view icon in the step panel and select "3D". The word "Tomosynthesis" will then appear at the lower-left corner of the step panel, indicating that the current step is for Tomosynthesis image only.



Tomosynthesis Configuration

To set Tomosynthesis specific configurations, select Tools > Options from the application menu and select the Mammography > Tomosynthesis tab. In this tab, the user can set configurations for Tomosynthesis Axes and Tomosynthesis MIP.



Tomosynthesis Axes

The "Activate Tomosynthesis Axes" check box, if selected, will display the Tomosynthesis Axes every time a Tomosynthesis image is shown on the screen.

Tomosynthesis MIP

The default number of frames over which to apply MIP can be customized via the "MIP Depth" spinner.