mScope 3.6.1 Education Portal User Guide

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1. Introduction

Aurora Interactive's mScope Education Suite enables universities and other professional organizations to easily and intuitively view, manage, distribute, enrich, share and collaborate around digital medical content using any Web browser connected to the Internet.

This document describes the functionality and implementation of the mScope Education Suite v3.5.

It addresses the needs of users, administrators and IT personnel.

2. mScope Components and Concepts

This section describes the main components of an mScope Education Suite, how they interact and their primary functions.

2.1. mScope Overview

The mScope Education Suite is a Web-based thin-client application that:

- manages all forms of media and information required to support medical education
- uses a centralized mScope Portal server to organize and share medical media and information and route user requests to view media stored on one or more distributed Media Servers
- uses the mScope Viewer to allow users to view, enrich and collaborate around media without displacing it from its Media Server
- operates on multiple operating systems (e.g. Windows, Mac)
- may be launched within multiple browser types (e.g. Internet Explorer, Safari, Mozilla Firefox, etc.)
- supports many image formats (all major whole-slide scanner manufacturers, DICOM, digital video, digital cameras, etc.)

The following diagram illustrates a typical mScope implementation:

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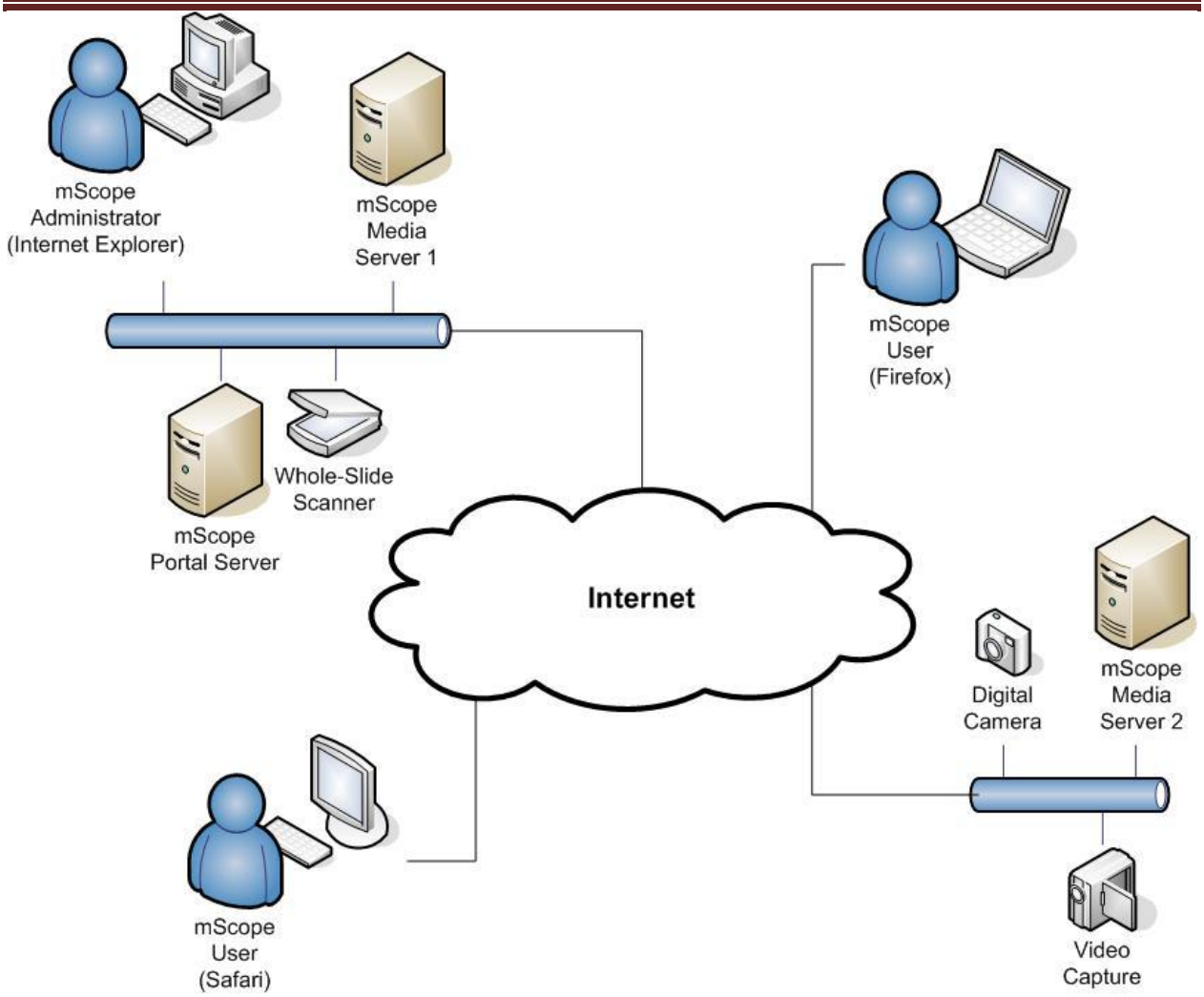

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2.2. What is Media

In the context of the mScope Education Suite, media is defined as any file containing visual information. mScope supports hundreds of media formats. Examples include:

- 2D images (e.g. .jpg, .gif, etc.)
- video (e.g. .mpeg)
- whole-slide images produced by slide scanners (e.g. Aperio, Hamamatsu, Zeiss, etc.)

Media is displayed in the mScope Portal using thumbnails

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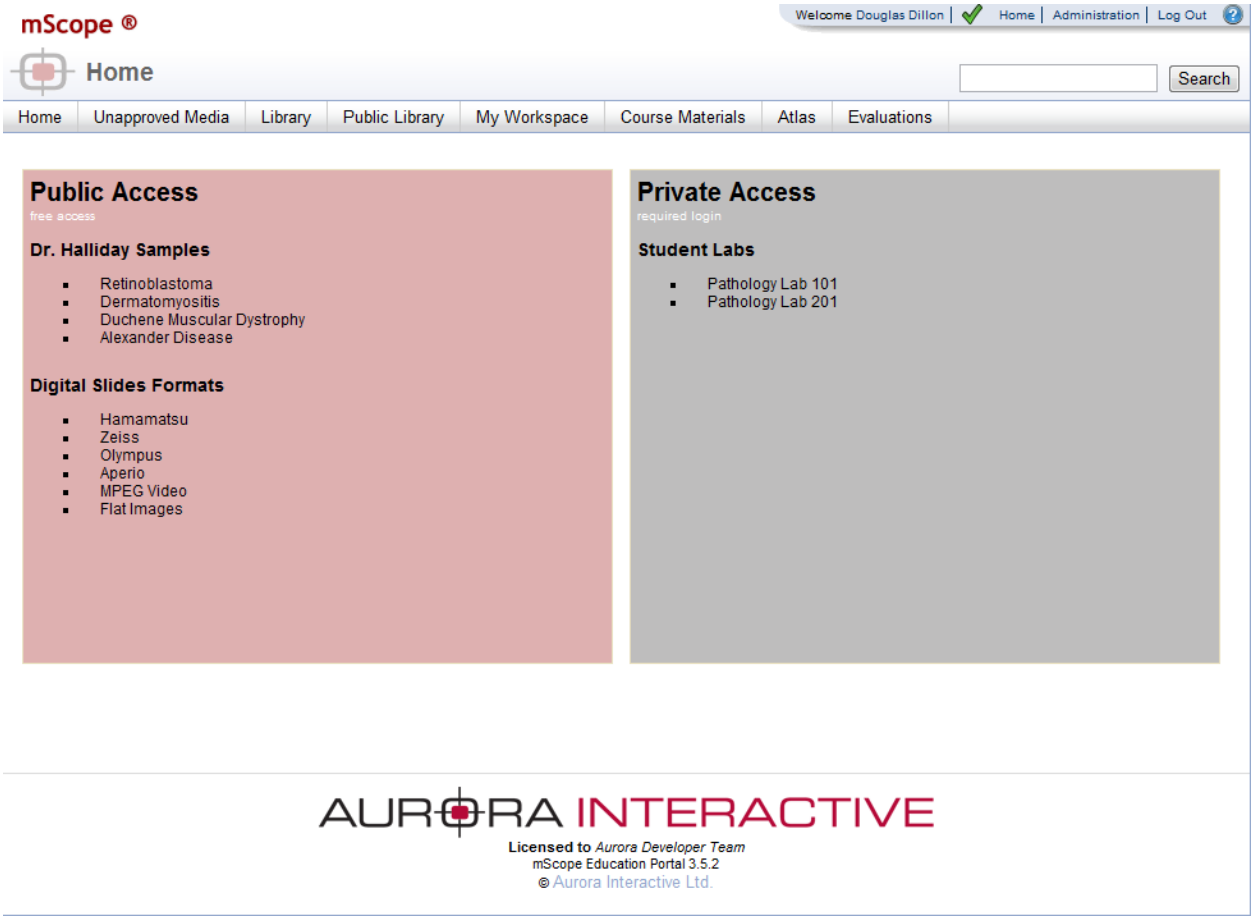
2.3. mScope Portal Overview

The mScope Portal may be accessed through any Web browser (e.g. Internet Explorer, Mozilla Firefox, Safari, etc.) and is the primary work area for users and administrators of the mScope Education Suite. It is through the mScope Portal that users and administrators access, upload, manage, link, enrich and share content.



The Portal may be configured to include all or some of the following modules (tabs):

- Unapproved Slides
- Library
- Public Library
- My Workspace
- Course Materials
- Atlas
- Evaluations

For a detailed description of the mScope Portal, its modules and their features, please refer to **Section 4.0 mScope Portal**.

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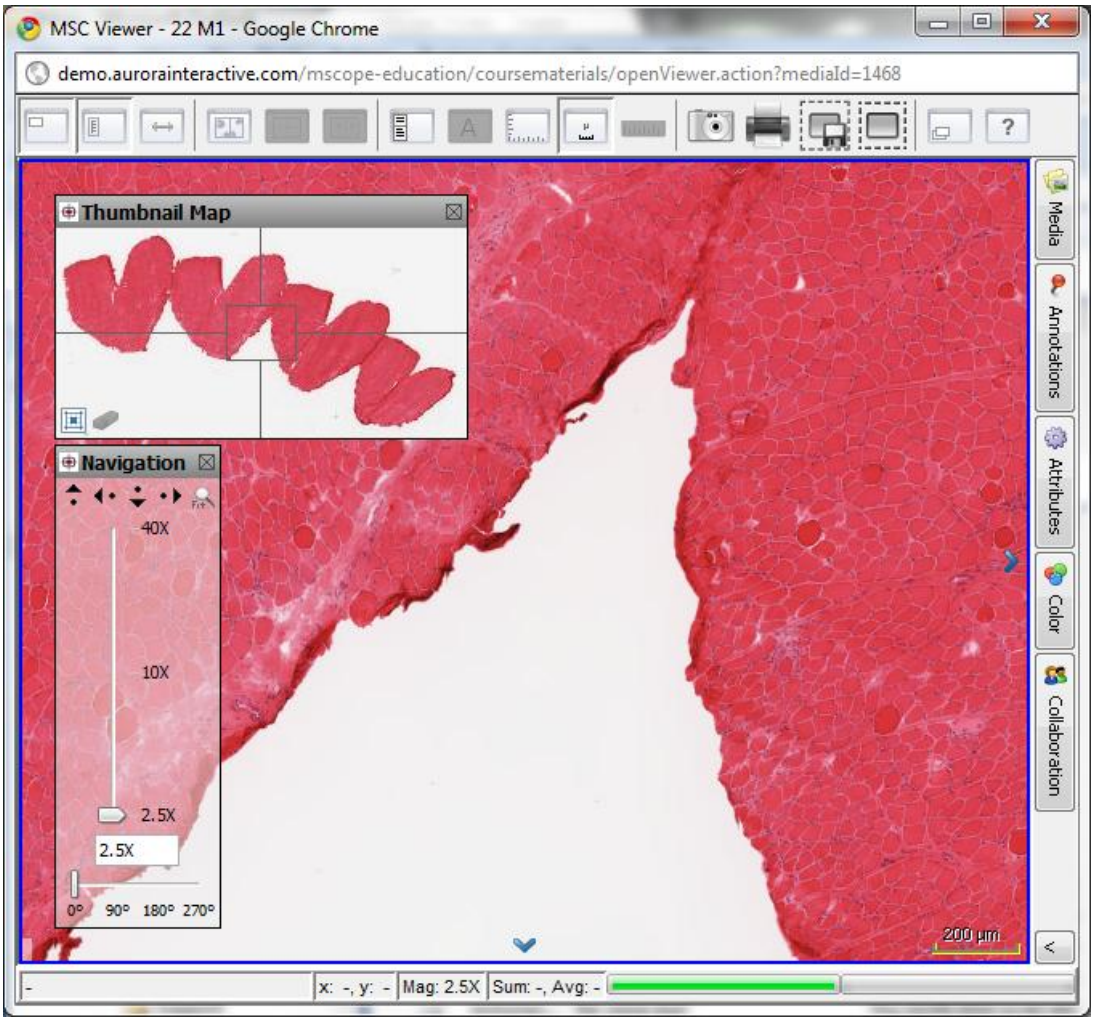
2.4. mScope Viewer Overview

The mScope Viewer is a Java application that is launched when a user clicks on a media thumbnail in the Portal. In order to eliminate the requirement to download the entire media file (which in some cases is several GBs in size), it selectively and intelligently loads the data corresponding to the region within the viewing area. The mScope Viewer includes tools to allow users to navigate, zoom and export media.



The Viewer may also be configured to include all or some of the following modules (tabs):

- Attributes
- Color
- Collaboration
- Annotations
- Media

For a detailed description of the mScope Viewer, its modules and their features, please refer to **Section 5.0 mScope Viewer.**

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3. mScope FAQ

This section addresses frequently asked questions (FAQs) from mScope Education Suite users and administrators.

3.1. Hardware and software requirements

The following table highlights the minimum and recommended hardware and software configurations for administrators and users of the mScope Education Suite v3.1:

	Minimum	Recommended
Operating System	Windows XP, Mac OS 10.4	Windows XP+, Mac OS 10.4+
Internet Browser	MSIE 6.0, Firefox 2.0, Safari 3.0	IE 7+, Firefox 3.0+, Safari 3.0+
Cookies	Enabled	Enabled
Additional Software (plug-ins)	Java 1.5+	Java 1.6+
Java Virtual Memory	64 MB	128 MB+
CPU	2GHz single core	Dual core+
RAM	1 GB	2 GB+
Hard Drive Space	Not applicable	Not applicable
Screen Resolution	1024 x 768	1024 x 1280+
Network Connection	3 Mbps	10 Mbps+

3.2. Language Setting

The mScope Education Suite is designed to detect the language setting of the user's Internet browser and display the appropriate translation. In the event the user's Internet browser setting is not supported, English will be displayed as the default language.

The mScope Education Suite v3.1 currently supports the following Internet browser language settings:

- English
- French
- Spanish
- German

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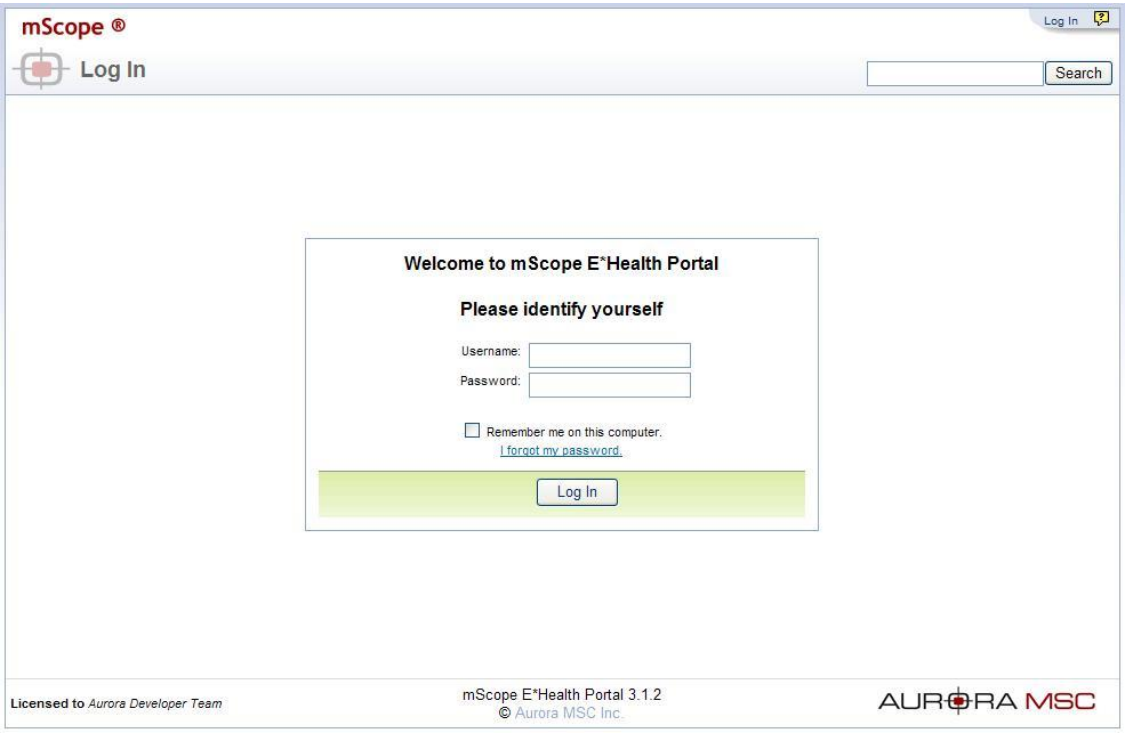
3.3. Logging in and out

To enter the mScope Portal users must authenticate themselves by logging in. Clicking the "Log in" button at the top right of the mScope Portal window will bring up the page shown below. The user must then enter their username and password to gain entry. By selecting the "Remember me on this computer" checkbox, the next time the user visits the login page; his or her password will automatically be entered when the username has been typed in.



3.4. Forgot my password

If you forgot your password you may select the "I forgot my password" link.

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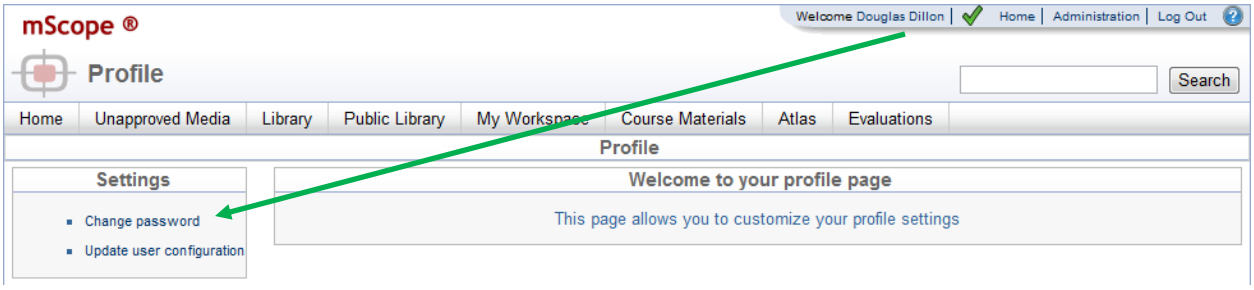
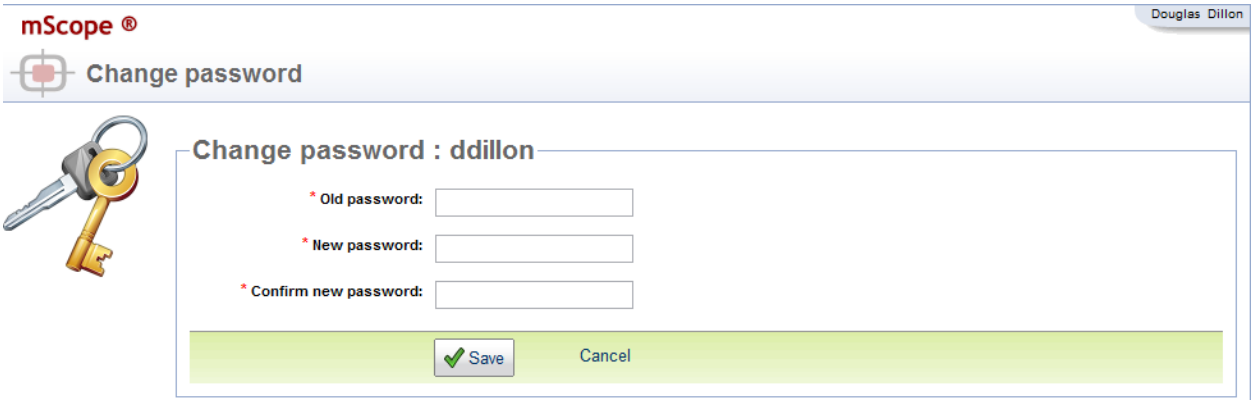
3.5. Change Password

Users can change their password by clicking their username in the top right of each mScope Portal page beside "Welcome". This will load the Profile page. Simply click "Change Password" in the left menu and enter your old and new passwords:





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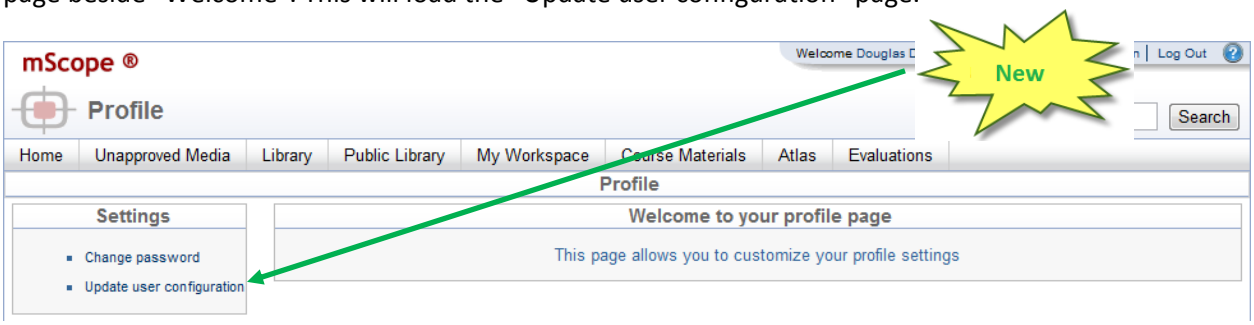
3.6. User Configuration

Users can change viewer properties by clicking their username in the top right of each mScope Portal page beside "Welcome". This will load the “Update user configuration” page.

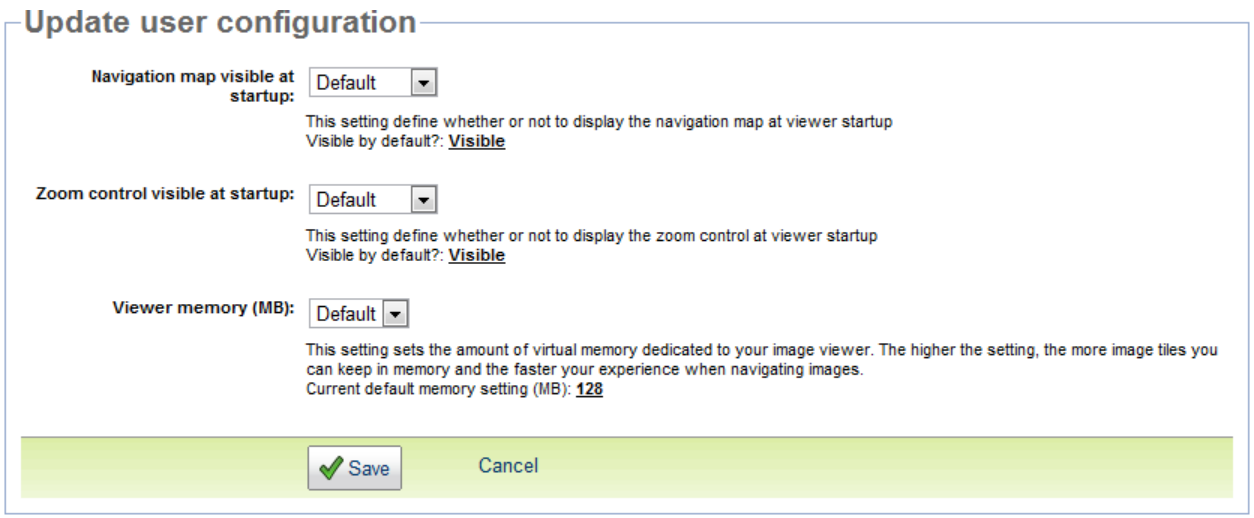


The following aspects of the viewer may be configured:

Navigation Map Visibility: on or off by default at startup

Zoom Control Visibility: on or off by default at startup

Viewer memory: increases performance by allowing the viewer to download data before you need it



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3.7. Settings not supported

When a user logs in the system performs a check to verify that the user's computer has all the required components and software to run mScope. If this process is successful, they will be brought to their home page. If the process fails, a warning message is issued.

By clicking the link "View more information" you will be directed to a Setting Summary page highlighting your settings as they compare to system requirements:

Setting Name	Current Settings	Certified Settings	Result	Links
Browser	firefox/2.0.0.5	MSIE 6.x+, Firefox 2.0.0.2+		
OS	intel mac os x	Windows NT 5.1+, MAC		
Javascript	Javascript 1.2	JavaScript 1.2+		
Java		Java 1.5+		Java 1.5+
Cookie	Enabled	Enabled		
Screen Resolution	2560x1600	1024x768+		
User Agent	Mozilla/5.0 (Macintosh; U; Intel Mac OS X; en-US; rv:1.8.1.5) Gecko/20070713 Firefox/2.0.0.5			

Clicking on the "Links" will redirect you to a website that supplies the required fix for the settings issue. **Note:** It is possible that your network administrator may prevent you from applying the updates. You'll need to consult with them if this occurs.

One common cause of the "Settings not supported" message that is not highlighted in the Setting Summary above is when the Web browser's security settings are too high. In this case, reduce them by one increment and refresh the Log in page to see if that corrects the problem.

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4. mScope Portal

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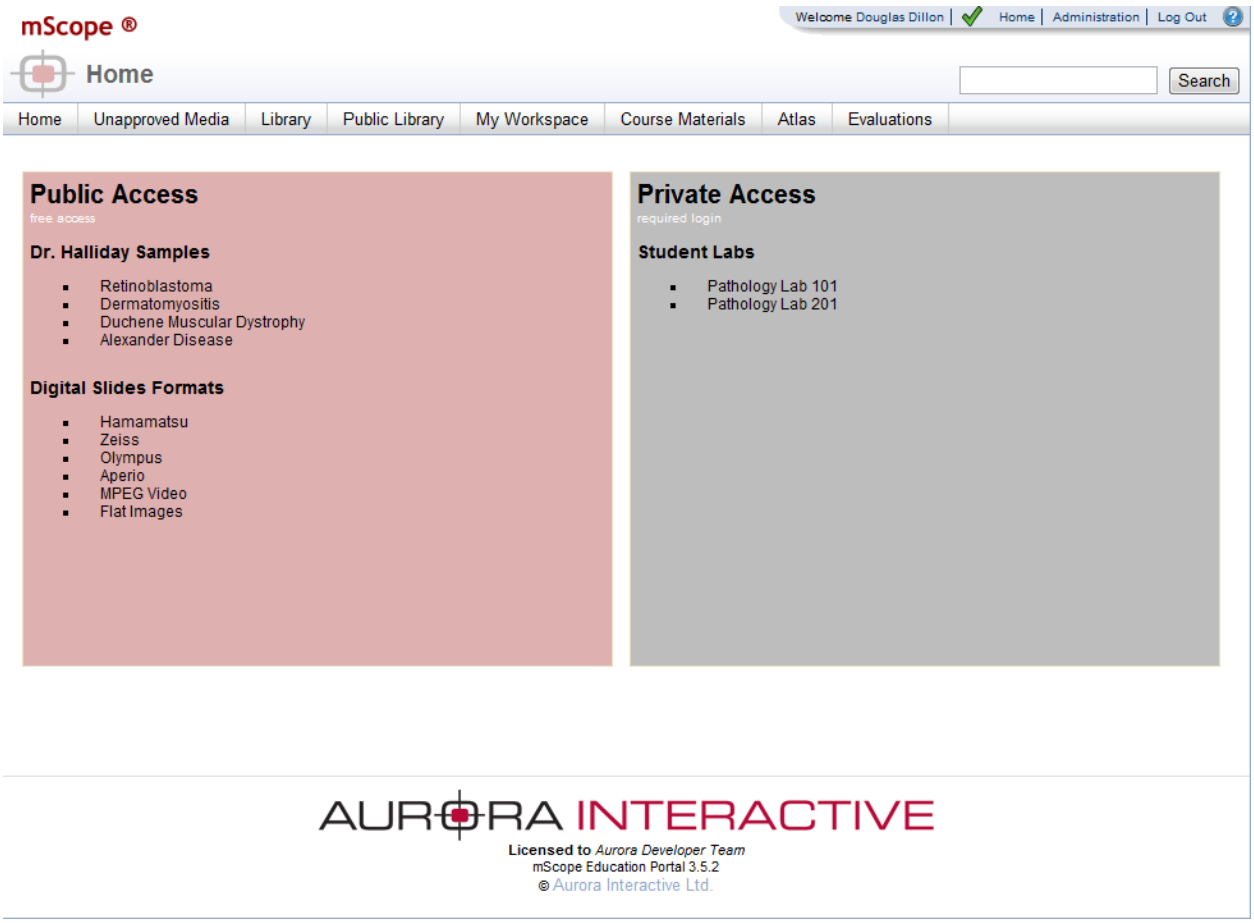
The Portal may be configured to include all or some of the following Modules (tabs):

- Unapproved Slides
- Library
- Public Library
- My Workspace
- Course Materials
- Atlas
- Evaluations



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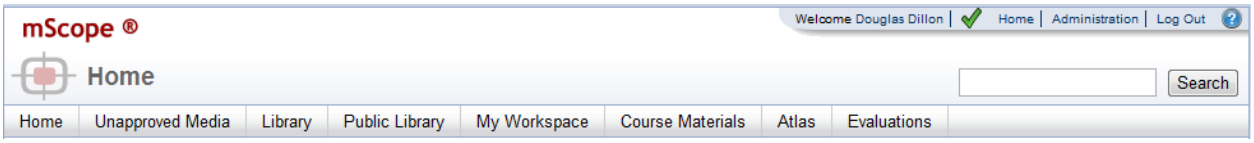
4.1. Portal Header



The mScope Portal Header is accessible from all pages of the Portal and includes the following elements:

User Profile

By clicking the username after "Welcome" in the top right of the Header, the user is redirected to the Profile page where his or her password can be changed.

Home & Requirements

Clicking "Home" in the top right of the Header is identical to clicking "Home" in the Module Navigation menu and redirects the user to the mScope Education Suite Home page. Additionally, mScope displays requirement validation to the left of the Home link. A check mark denotes that your computer has the minimum requirements for browser, java, and screen resolution. If any are not met an “x” will appear.

Administration

The "Administration" link in the top right of the Header may or may not appear depending on whether or not the User has administrative privileges. If it does appear, clicking it redirects the User to the Administration page where Users, Groups, Servers, Licenses, Media Attributes and Media Links are managed.

Log Out

Clicking "Log Out" in the top right of the Header logs the User out and redirects them to the Home page.

Help

Clicking redirects the User to Aurora MSC's mScope Help website, where documentation and technical support can be obtained.

Search

The "Search" tool allows Users to Search Media, Folders, Projects and Cases and returns all results that contain the characters entered. Example: a search for "pro" will return "project', "protein", "prohibit", etc.

Module Navigation menu (tabs)

By clicking the Module Navigation menu tabs, the User is redirected to the desired Module. Note that the Module the user is currently in is displayed above the Module Navigation menu beside the mScope bullseye. Some Modules shown above may not be displayed. Which ones appear will depend on your system license and User Permissions.

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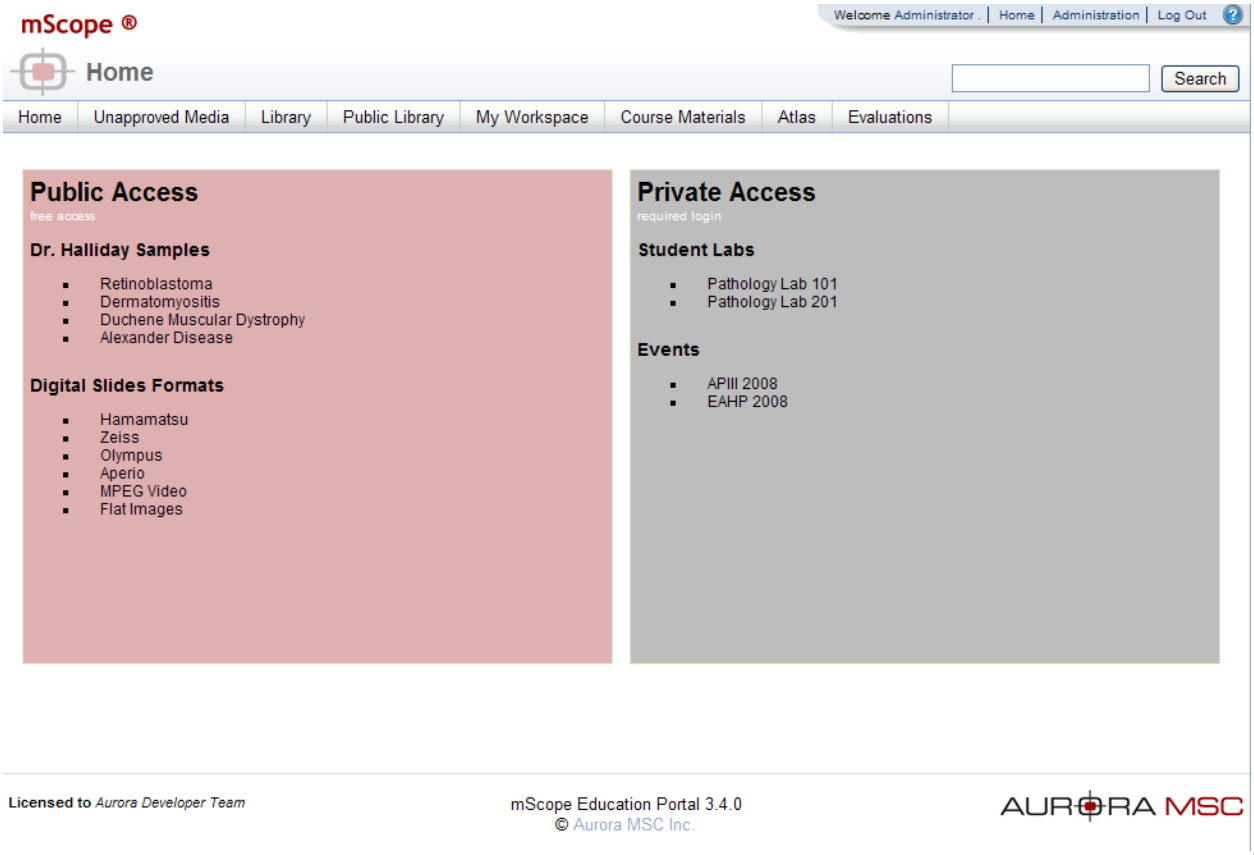
4.2. Home

The Home page can be reached by selecting "Home" in the Portal Header or Module Navigation menu (tabs). It is a Public page whose information is displayed to anyone visiting its URL without requiring them to Log In.



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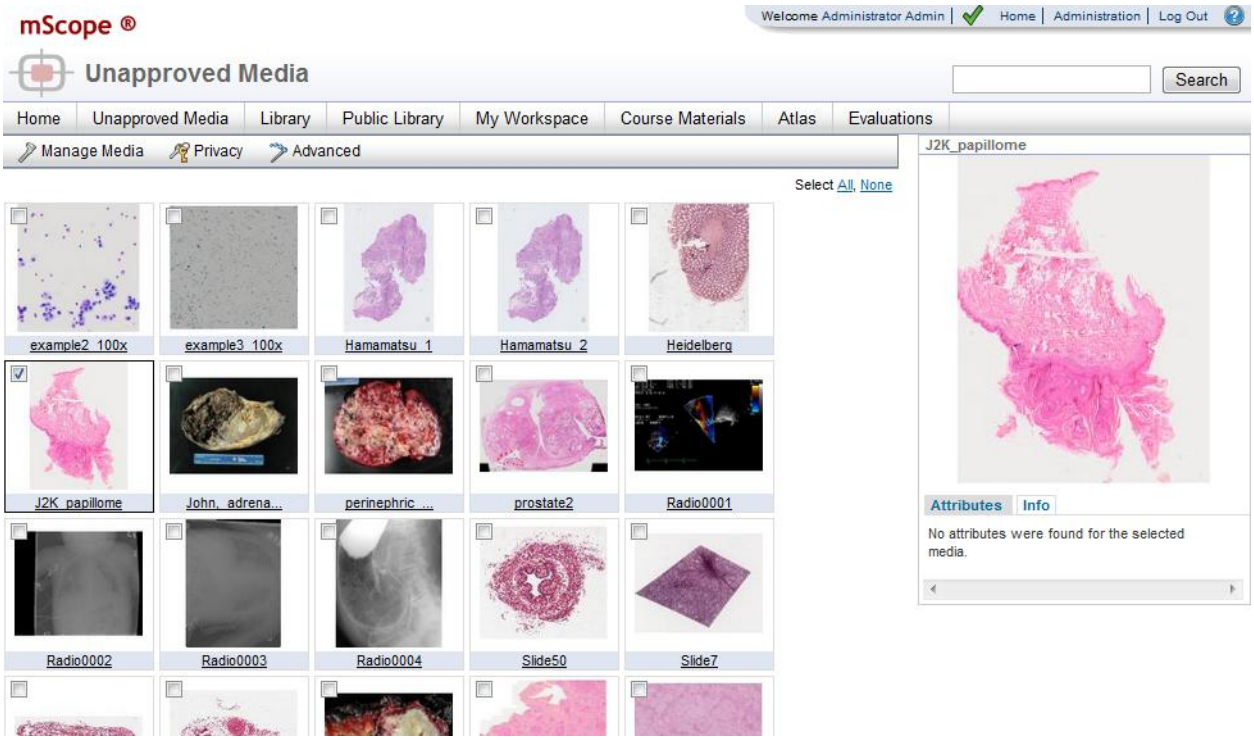
4.3. Unapproved Media

The purpose of the "Unapproved Media Module is to serve as a staging area for newly acquired Media. It is typically configured to only be visible to mScope Administrators.
mScope monitors specified network folders for new Media and automatically dispatch them to the "Unapproved Slides" Module. The Media can then be opened with the Viewer to verify quality prior to Dispatching to the appropriate mScope Portal Module.



Media Previews

Clicking on a Media thumbnail will bring up a Media Preview on the right hand side of the screen. Please refer to **Section 4.26.1 Media Preview**.

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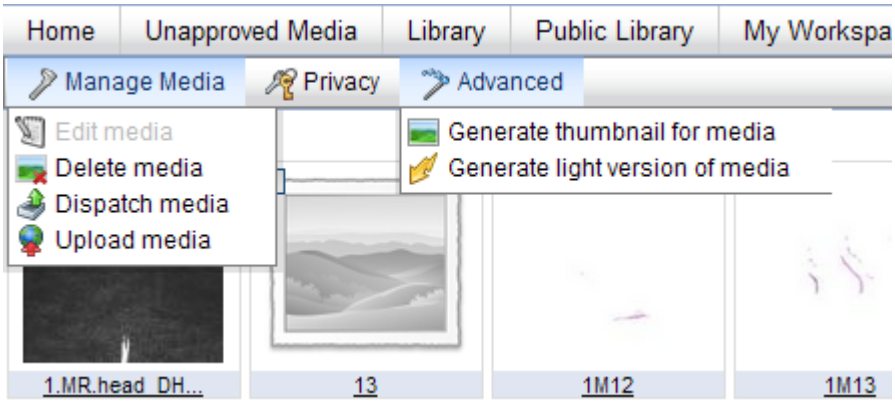
Media Toolbar Operations

The other Media operations that may be performed in the Unapproved Slides Module are shown in the Media Toolbar located above the Media thumbnails:



Dispatch: Please refer to **4.26.2 Dispatch Media** for a detailed explanation of this feature.

Upload: Please refer to section **4.26 Upload Media** for a detailed explanation of this feature.

Delete: Please refer to **section 4.25.7 Delete** for a detailed explanation of this feature.

4.4. My Workspace

My Workspace is the personal work area of a user. It is composed of three main sections:

- **Inbox:** private work area where a user receives Media sent to his or her My Documents Module. Refer to **section 4.5 Inbox** for a detailed explanation of the Inbox.
- **Public Library:** public work area where all Public Media of the Portal are displayed. Refer to **section 4.6 Public Library** for a detailed explanation of Public Documents.

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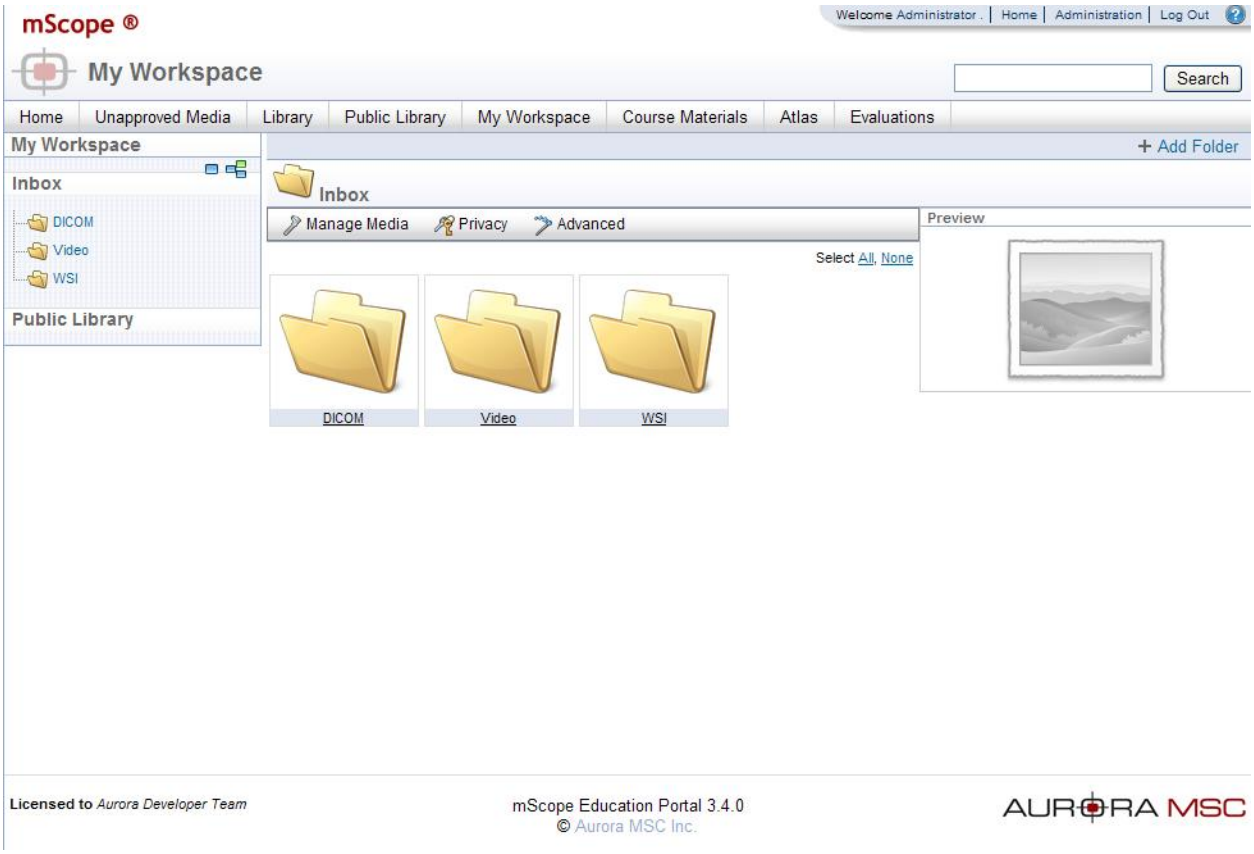
4.5. Inbox

Inbox" is where a user receives Media and is a Private work area not viewable by any other Users. Media may be edited and enriched here and then Exported to the user's Public Documents, a Public Module such as Library or Atlas, or to a Case in Shared Documents.



Folder Controls

The folder provides quick buttons to expand and collapse the folders within.

Media Previews

Clicking on a Media thumbnail will bring up a Media Preview on the right hand side of the screen. Please refer to **section 4.26.1 Media Preview** for a detailed explanation of this feature.

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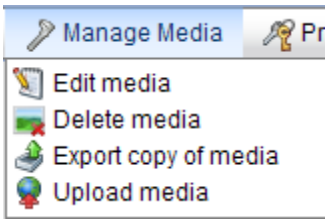
Media Toolbar Operations

The other Media operations that may be performed in the Inbox are shown in the Media Toolbar located above the Media thumbnails:



Edit: Please refer to **section 4.26.6 Edit** for a detailed explanation of this feature.

Delete: Please refer to **section 4.26.7 Delete** for a detailed explanation of this feature.

Export: Please refer to **section 4.26.6 Edit** for a detailed explanation of this feature.

Upload: Please refer to **section 4.26.4 Upload** for a detailed explanation of this feature.

Public: Please refer to **section 4.26.6 Public & Private Media** for a detailed explanation of this feature.

Private: Please refer to **section 4.26.6 Public & Private Media** for a detailed explanation of this feature.

Copyright: Please refer to **section 4.26.8 Copyright** for a detailed explanation of this feature.

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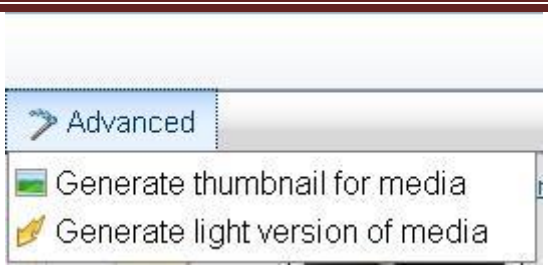
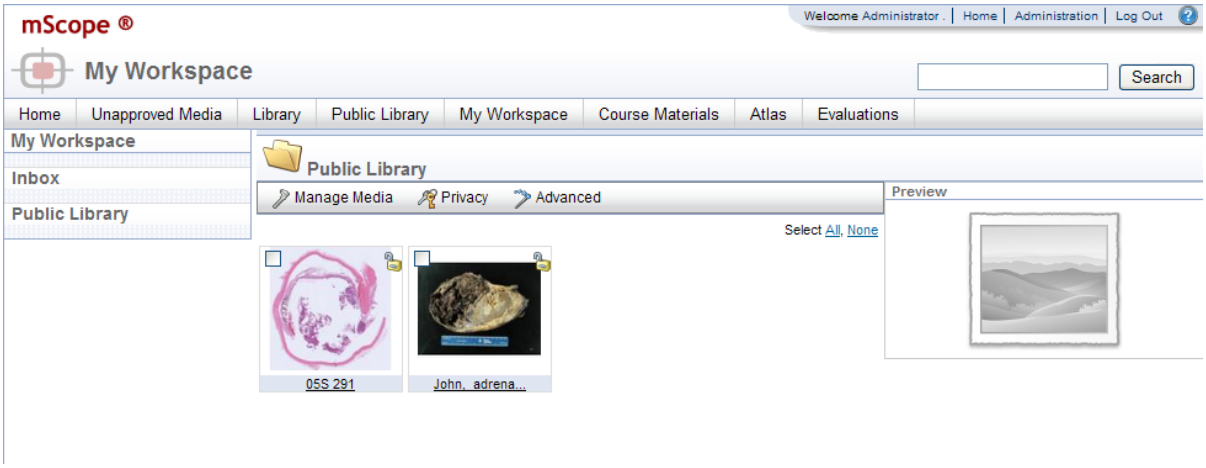


Thumbnail: Please refer to **section 4.26.9 Generate Thumbnail** for a detailed explanation of this feature.

Light: Please refer to **section 4.26.10 Generate Light Version** for a detailed explanation of this feature.

4.6. Public Library

The "Public Library" is an open area of the application where visitors can see shared media without restriction. Unlike the "Library" which houses internal files and requires password entry the "Public Library" has no security like any standard website. By selecting the "Public Library" section of "My Workspace" members have the added functionality to edit, enrich, and Export media to their Inbox, Course Materials, or the (private) Library. Alternatively, media may be Exported and then edited and enriched such that any information added to it will not be Public.



Media Previews

Refer to Inbox “Media Previews” section 4.26.1.

Media Toolbar Operations

Refer to Inbox “Media Toolbar Operations” section 4.5.

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4.7. Cases

Cases are the core content organization element containing media, documentation, and files. They may be created in the Course Materials and Atlas modules. They are displayed as in the navigation menu located on the left of Course Materials with the contents on the right.

Case Structure

Cases are organized as follows:

1. **Title:** displays the creation date, author, and links to jump to the next or previous case.
2. **Tools:** operations that may be performed on the case. These are:
    1. **Edit**
    2. **Move**
    3. **Copy**
    4. **Delete**
    5. **Share**
    6. **(Course Material only) Set Visibility**
    7. **(Course Material only) Preview:** allows you to see how case will appear to the users and groups you've shared it with.
3. **Clinical Information:** is the area reserved for details about the case. In addition to text it supports images and web links. **Note:** can be edited by selecting the "Edit" button located at the far right of the section.
4. **Media:** lists all media associated with the case as well as notes, annotations, and attributes. You can modify these values by selecting the edit button in the actions heading. You can also organize your media by clicking the "Dots" above the number and dragging it to the desired position. Tools are available above the media list to the right for adding images.
    1. **Add existing media:** allows you to include media on the server you have access to.
    2. **Upload new media:** allows you to add media from your computer to the server.
    3. **Remove all media**
5. **Diagnosis Information:** is the area reserved for the case diagnosis. In addition to text it supports images and web links. **Note:** can be edited by selecting the "Edit" button located at the far right of the section.
6. **References:** is the area reserved for connecting to internal and external sources. In addition to text it supports images and web links. **Note:** can be edited by selecting the "Edit" button located at the far right of the section.
7. **Attributes:** displays all attributes and the assigned values (if any).
8. **(Course Materials only) Sharing Permissions:** allows you to open the case to users & groups.
9. **(Atlas only) Comments:** displays comments added by users. Users may comment on other comments.
10. **Attachments:** additional files such as word documents files that are not directly displayed by mScope.
11. **(Course Materials only) Diagnosis Voting:** lists all student submitted diagnosis.

Note: tools such as edit, copy, and share will not be available if you do not have authoring rights to a case.

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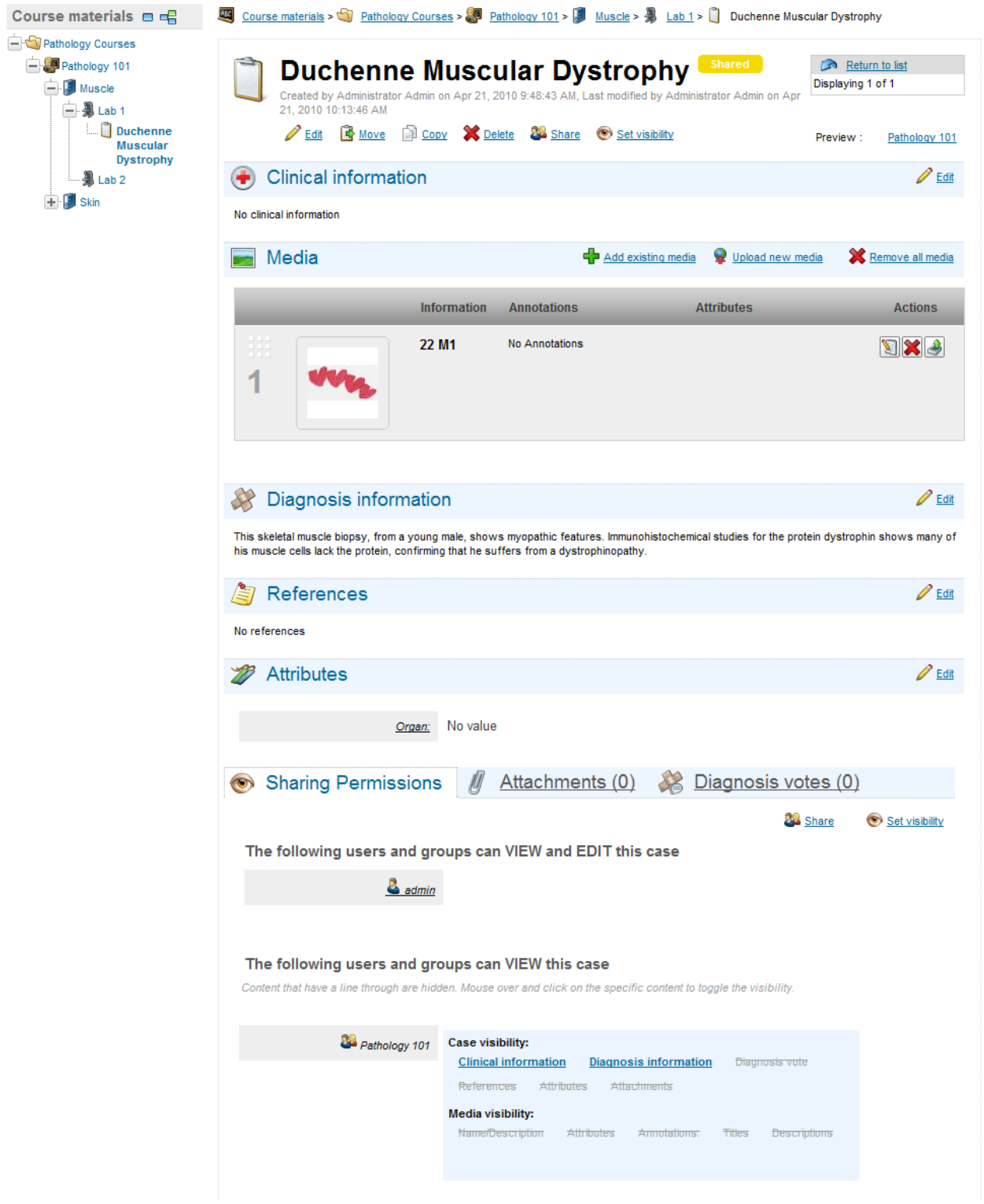

4.8. Case "Edit"

The "Edit" tool of the case allows you to set or change:

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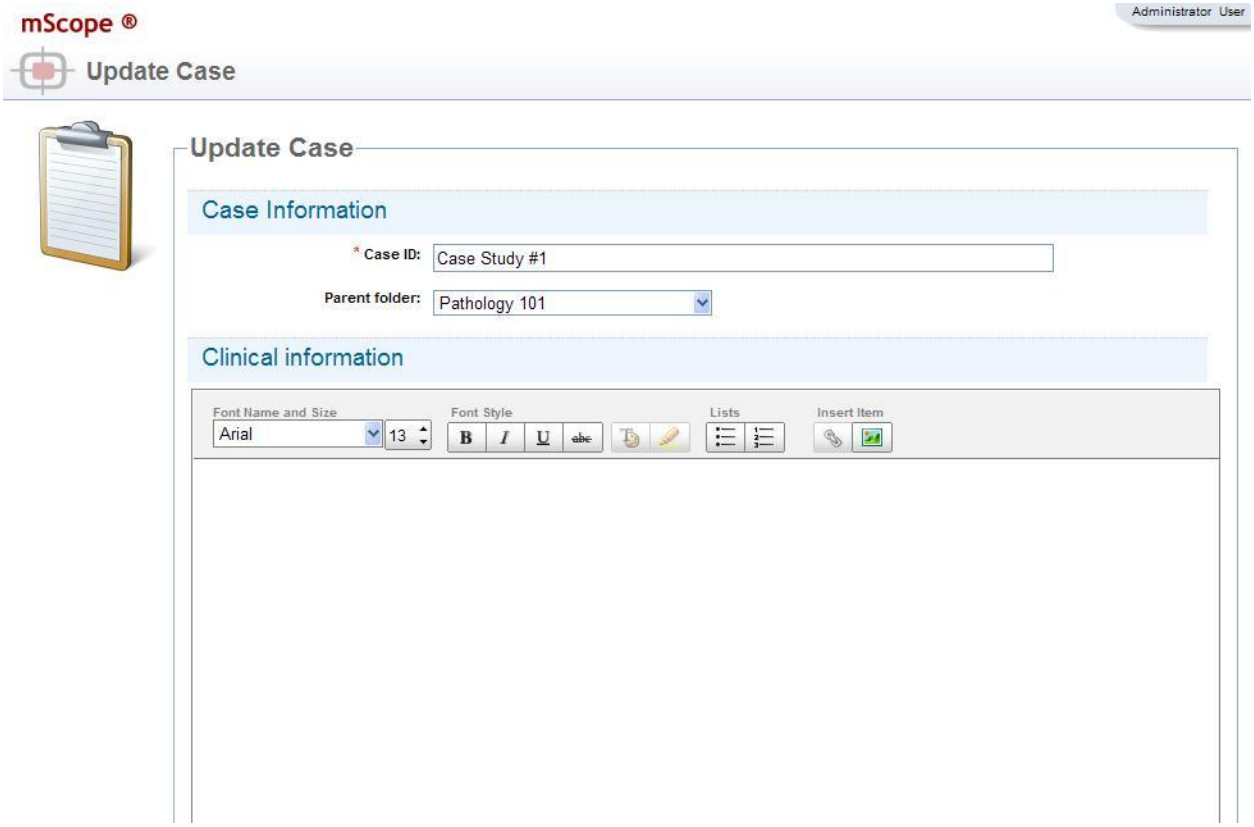
- Case ID
- Parent Folder
- Clinical Information
- Diagnosis Information
- Reference Information



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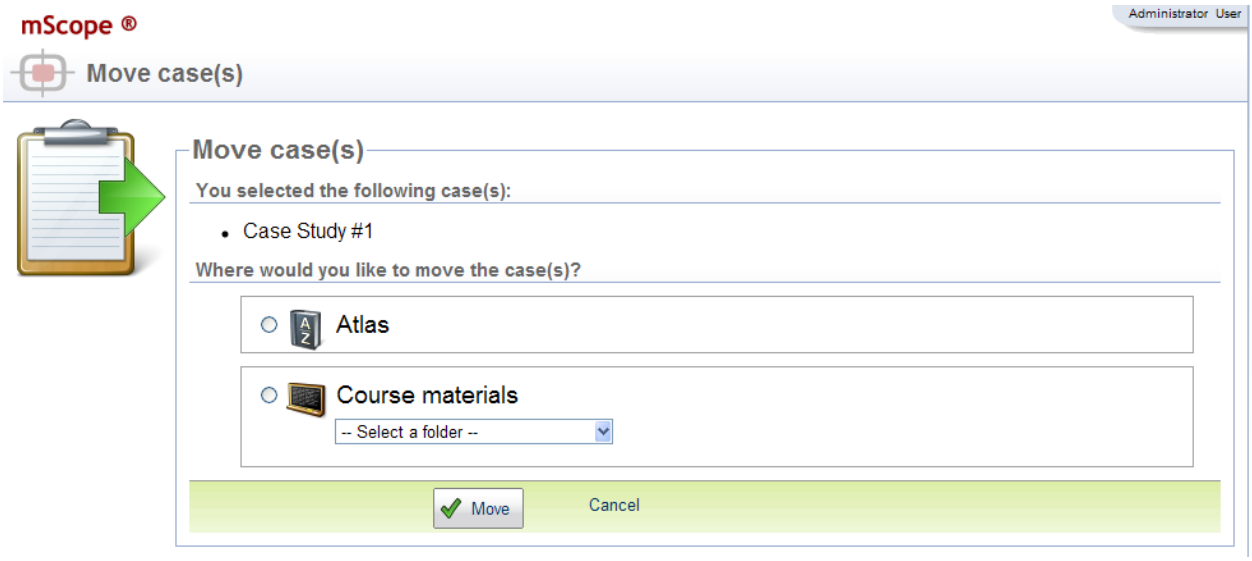
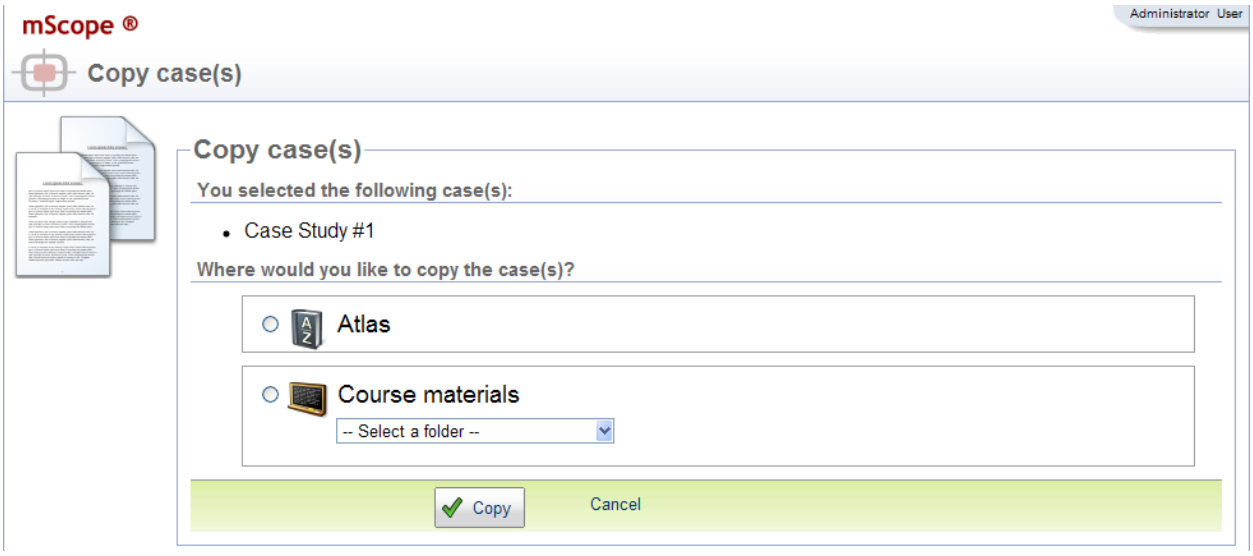
4.9. Case Move

The “Move” tool allows you to change its location in the content.



4.10. Case Copy

The “Copy” tool allows you to make another instance of the case.



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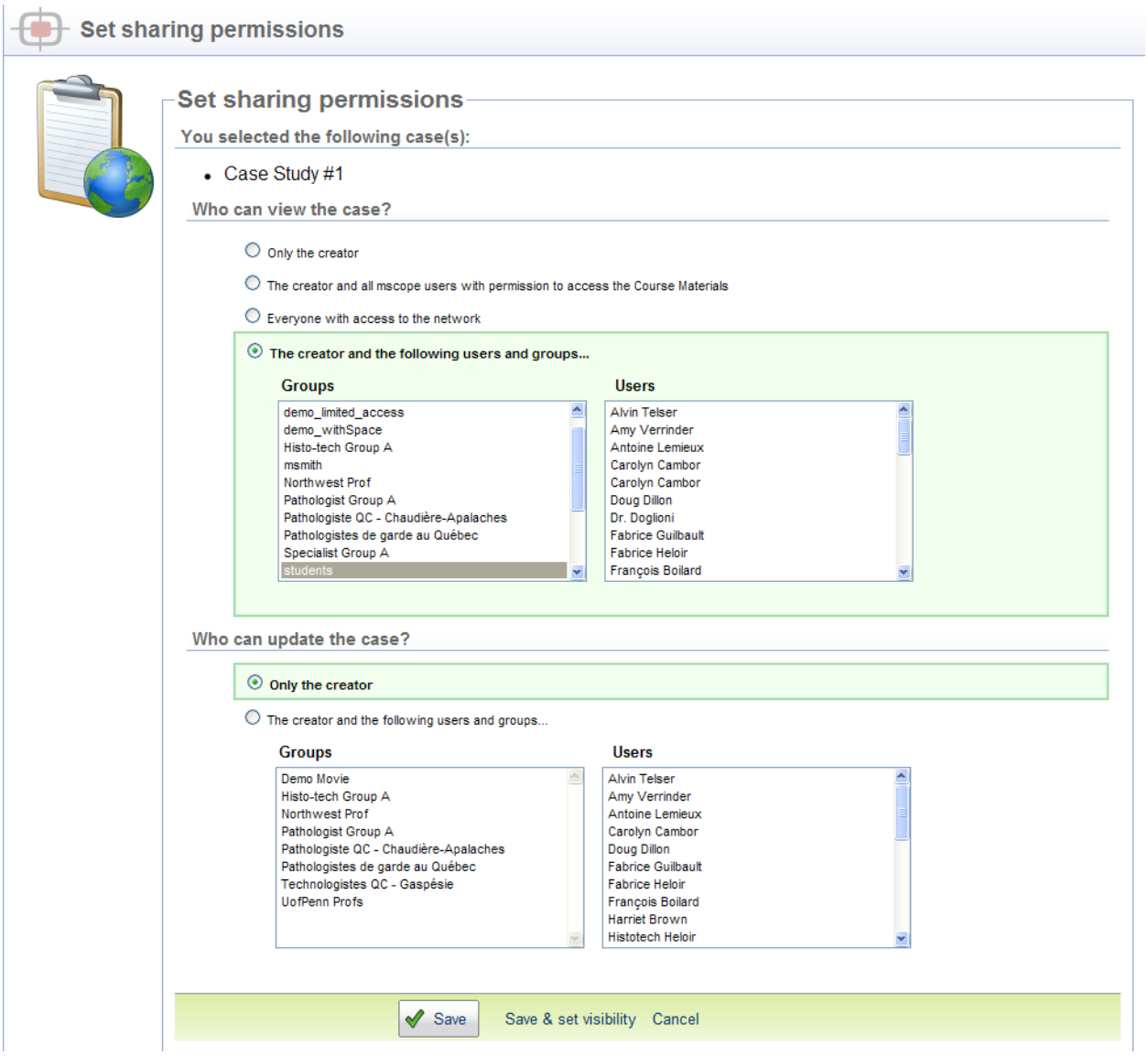
4.11. Case Sharing

Access to cases is granted by assigning permission to a user or group. Cases support permissions for viewing and modifying cases.



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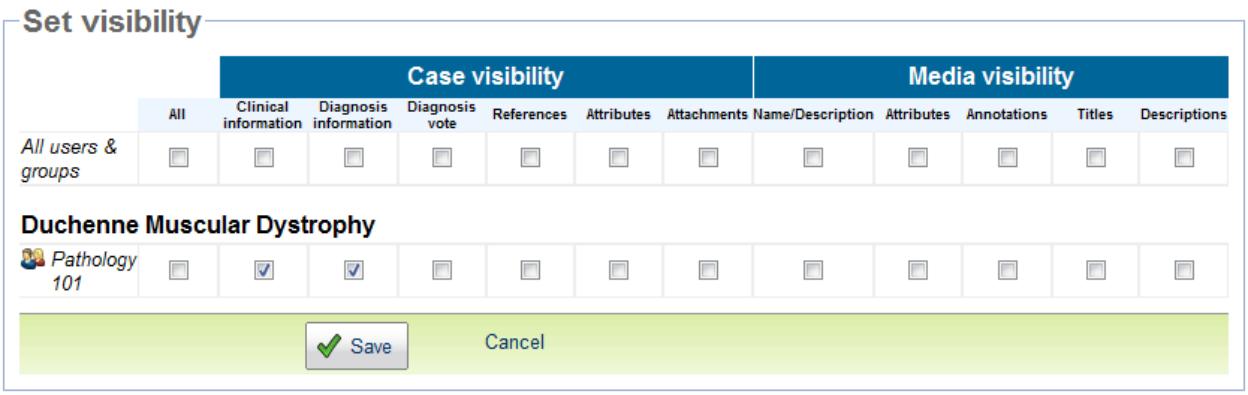
Visibility

The Sharing tab located at the bottom of the case lists all groups and user along with which sections of the case they can see. Clicking a section with show or hide it.

You can also set visibility during the group or user selection by selecting

4.12. Set Visibility

mScope provides a visibility configuration page to quickly enable the sections you wish to share. The tool allows you to set the sections available to multiple groups and users faster than toggling them as described above.



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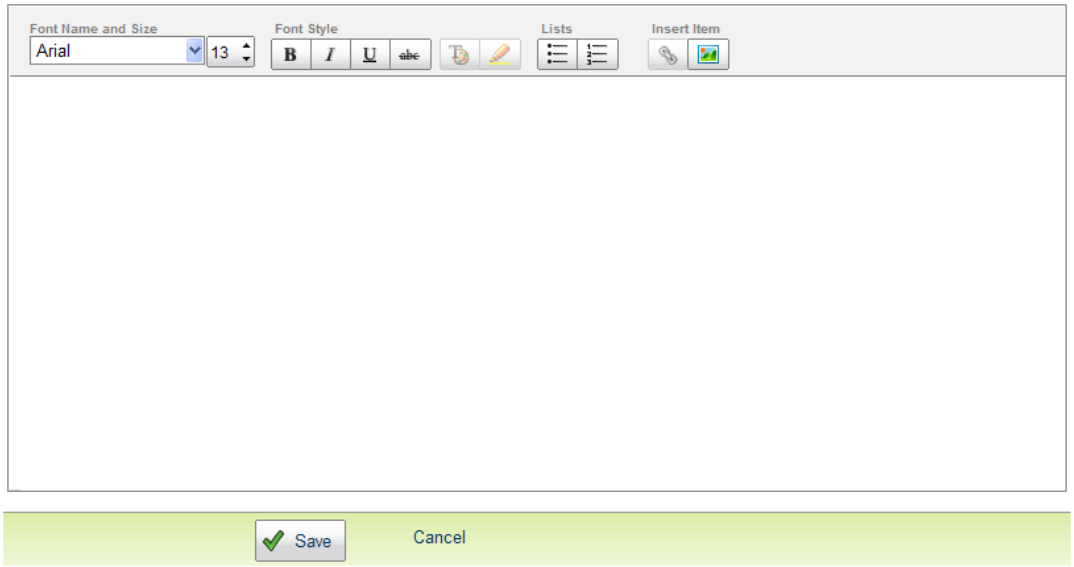
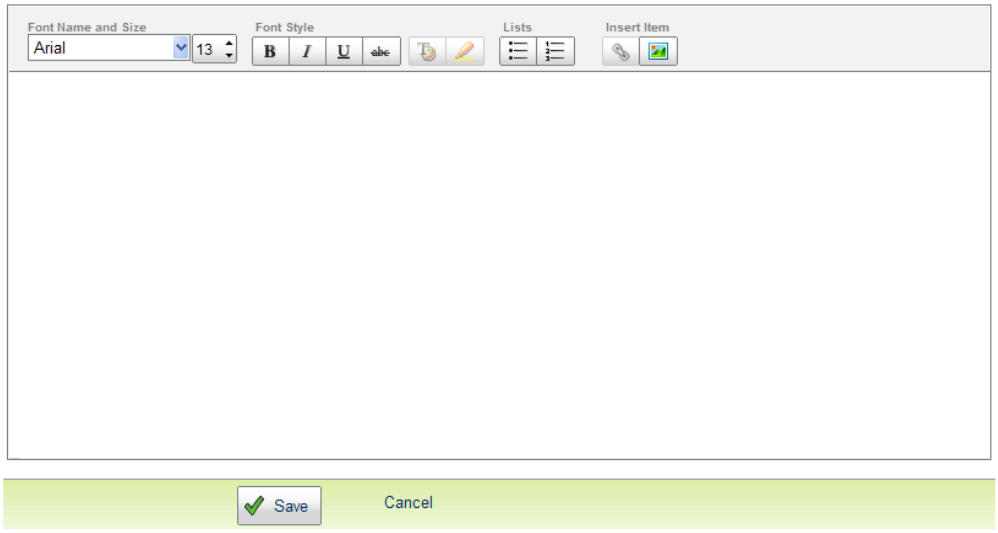
4.13. Clinical Information

"Clinical Information" is a section for text, basic images, and web links. Selecting the "Edit" at the end of the section will bring up the editor.



4.14. Diagnosis Information

"Diagnosis Information" is a section for text, basic images, and web links. Selecting the "Edit" at the end of the section will bring up the editor.



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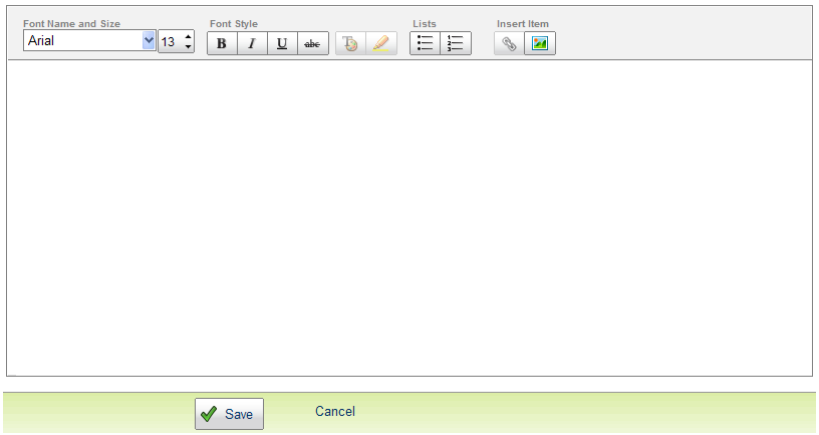
4.15. Reference Information

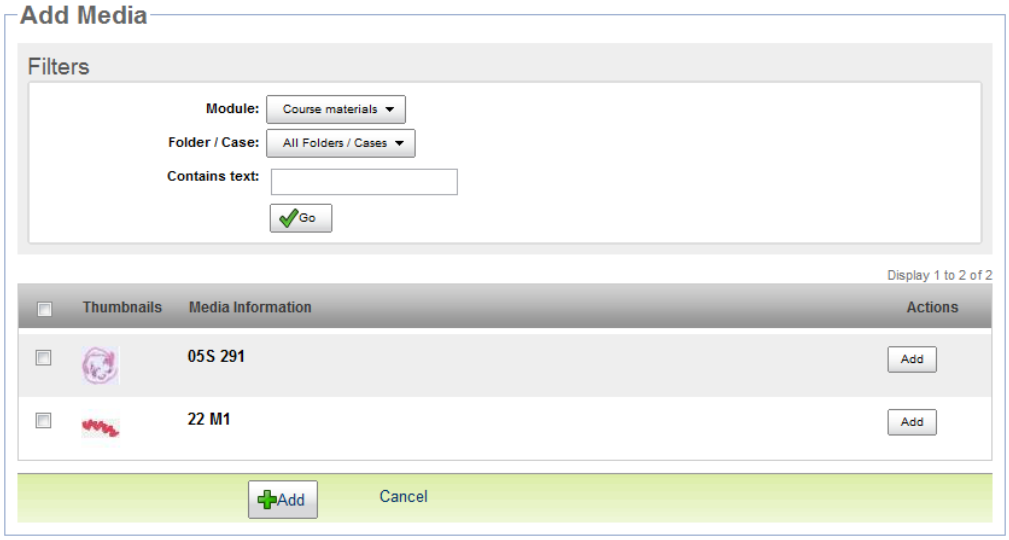
"Reference Information" is a section for text, basic images, and web links. Selecting the "Edit" at the end of the section will bring up the editor.



4.16. Case "Add Existing Media"

"Add Existing Media" allows you to add media to the Case from any Module, Folder, or Case of the portal you have access to. Selecting the operation will bring up the "Add Media" pane listing all media available. The list can be filtered by entering all or part of the file name in "Contains text" and selecting go.

You can select individual images by picking the "Add" button Action located on the far right. Alternatively, you can select multiple images by picking the checkboxes on the left of the thumbnail and selecting the "Add" button at the bottom left of the page.



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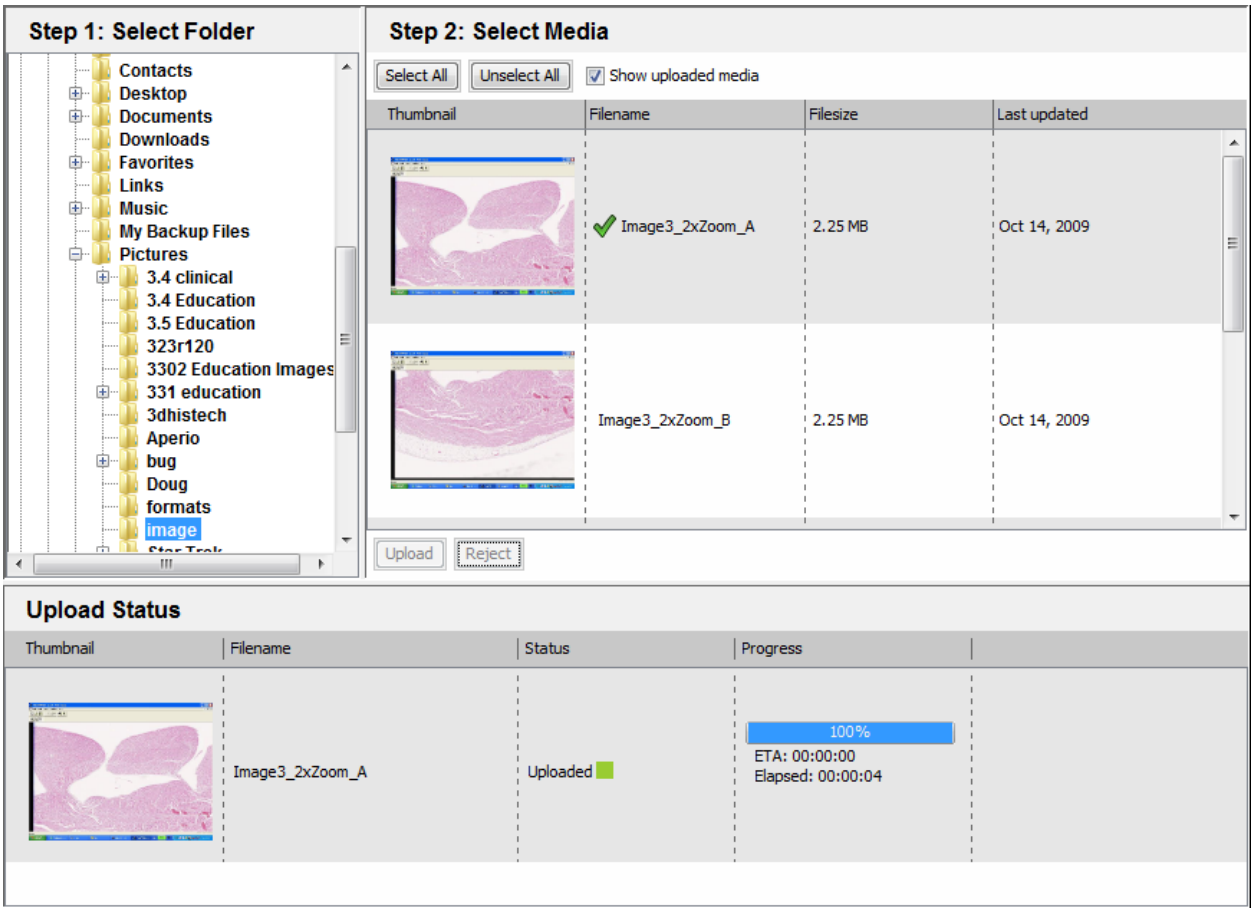
4.17. Upload New Media

"Upload New Media" allows you to add media from your local machine to the mScope application. The process involves two steps identified on the window.

1. Selecting the folder on your drive where the media is located. All media will appear in the “Step2” pane.
2. Select the file(s) you want to upload. Use the Shift or Ctrl keys to select multiple files.
    - Upload will copy the files to the server
    - Reject will remove selected files from the list of files media available for upload

The status pane shows the progress of media being uploaded.



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4.18. Attributes

The "Attributes" section lists all available attributes for the case. Selecting the “Edit” on the far left opens the editor allowing you to select values. For details on "Attributes" visit 6.6 ATTRIBUTES. In the example below the case has a single attribute "Organ" selecting the value is done by pressing the "Select" button which results in the list of choices below.

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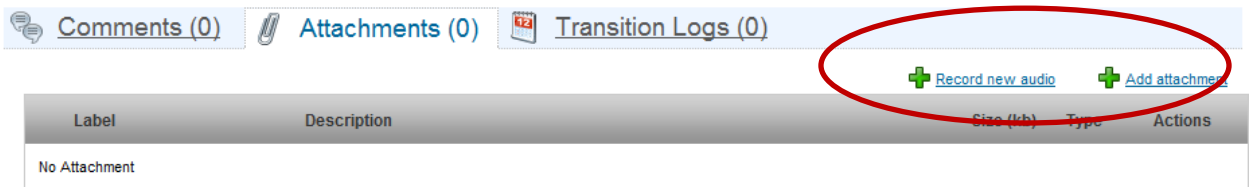
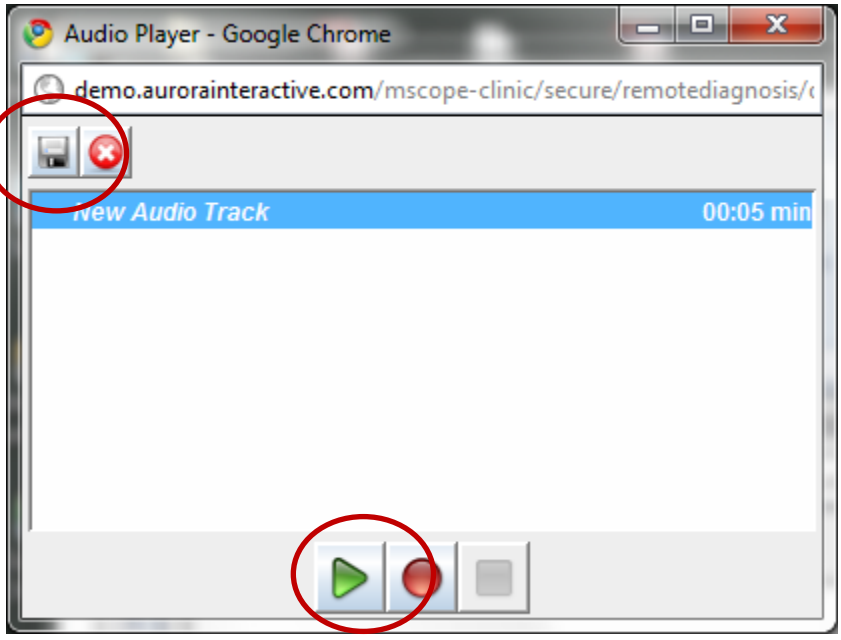
New

4.19. Attachments

Additional documentation and dictation is contained in the attachments section of the case. This is for non media files not supported by the viewer. Uploading attachments from your computer is done by selecting “Add attachment”. Selecting “Record new audio” allows you to add sound segments to the case that can later be transcribed.



Adding audio clips is done by selecting the record button. Selecting record again will allow you to add additional clips. Clips can be saved or removed from the list using the buttons at the top left.

5. 

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5.1. Diagnosis Votes

Diagnosis voting allows users to enter an opinion for review by the professor. The list of answers appears in the Diagnosis votes tab. It is only available in Course Materials. You can clear the list using the reset button on the far right of the tab.

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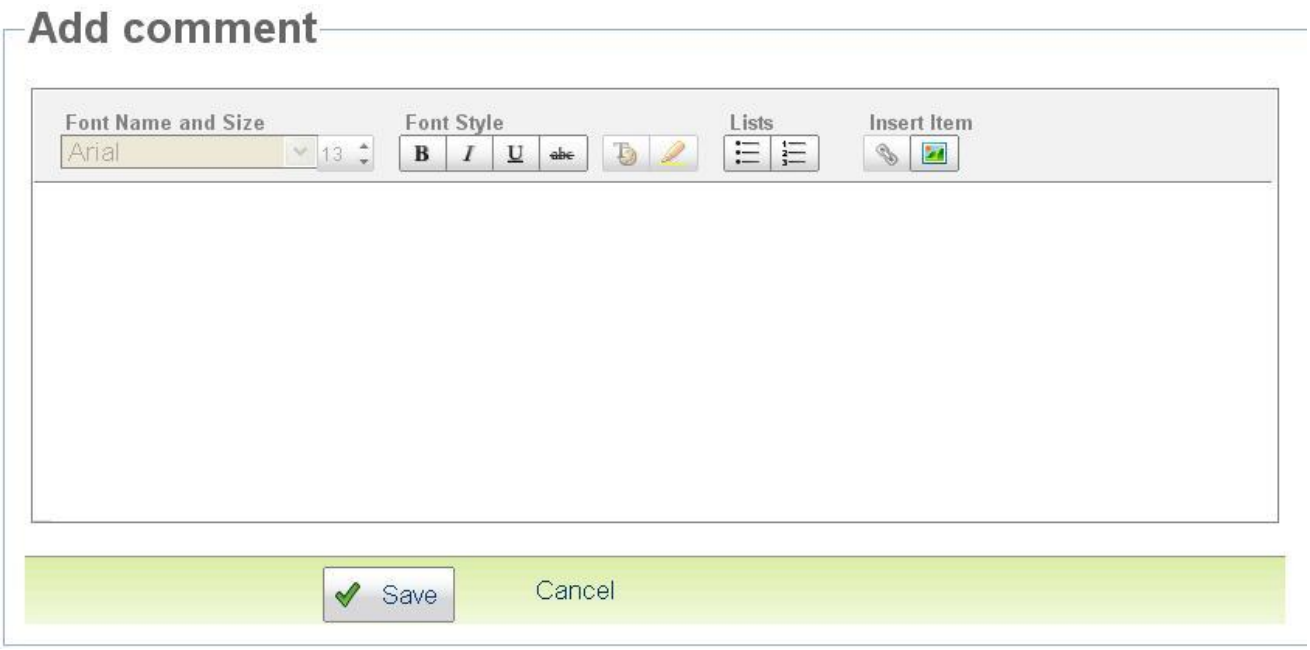
5.2. Comments

Comments may be added to cases in the Atlas by selecting the "Add Comment" Operation or by replying to an existing comment.



Comments support images as well as hyperlinks.

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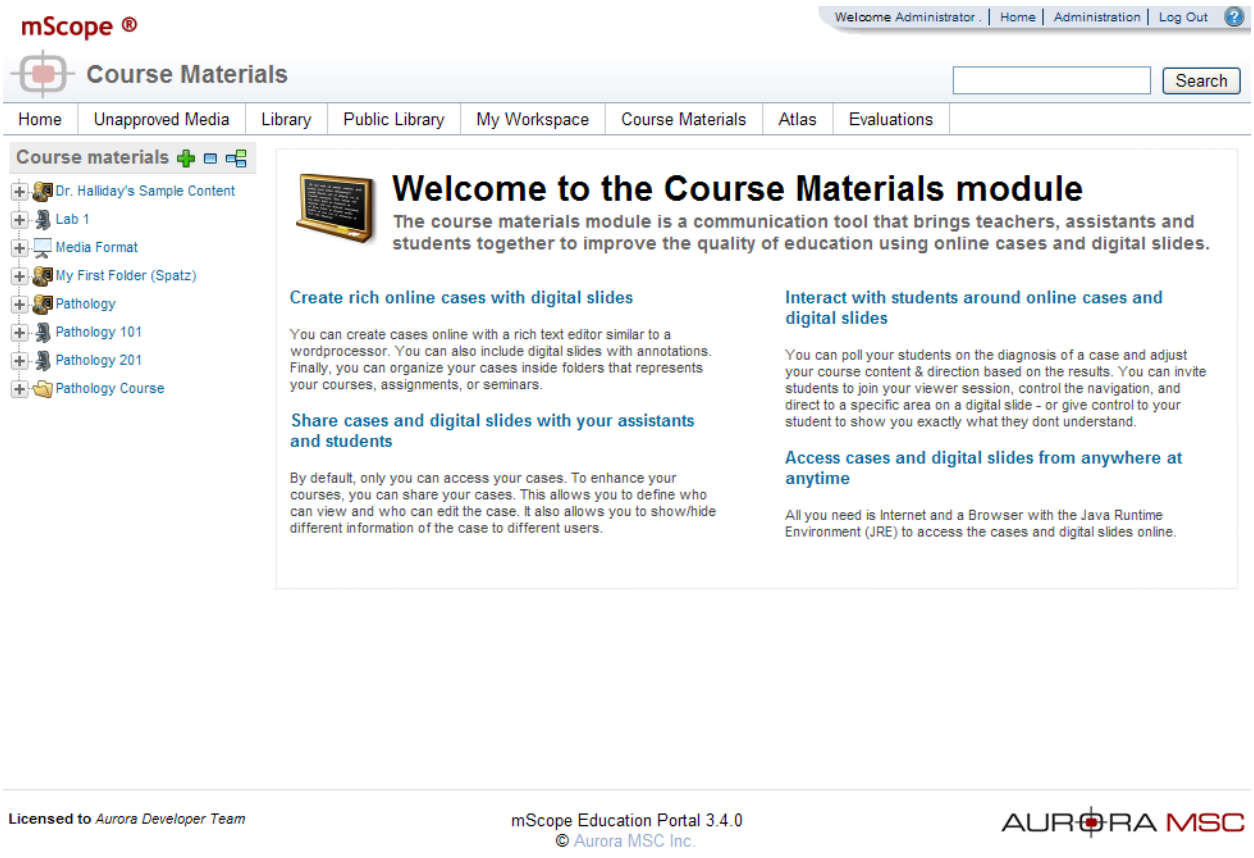
5.3. Course Materials

The "Course Materials" module is the mechanism for creating and sharing learning materials by providing a robust organizational system for cases. With this you can:

- Create and share content
- Communicate with others around content
- Access existing content

Content is made up of "Cases" and "Folders".



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5.3.1. Folders

Folders are the management tool of Course Materials allowing you to present your content in a hierarchical structure. To accomplish this five folder icons are available **Folder, Course, Project, Seminar,** and **Laboratory**. It is important to note that these are all folders the difference between them being the icon displayed. Folders manage Cases as well as Folders.

When viewing a folder its location is displayed in the tree on the left as well as the top of the folder window above the name and tools. If you have permission the description can be edited by selecting the Edit link located at the far left of the section. Cases are displayed at the bottom of the folder.

5.3.1.1. Create

There are two ways to create a Folder.

- Selecting next the Course Materials title at the top left of the menu.
- Selecting New from the tools of the Folder.

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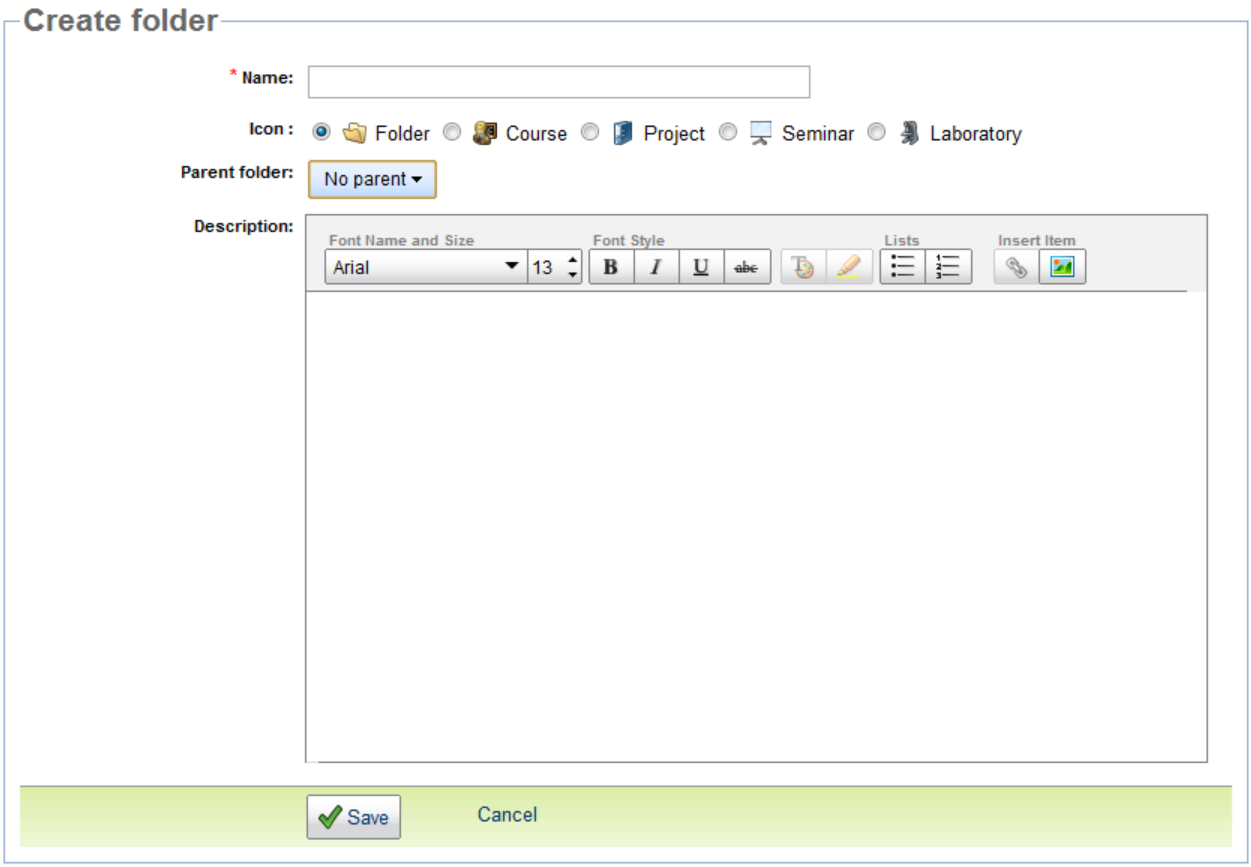
This opens the creation page. In addition to specifying a name you can:

- select the icon you wish to display
- select the folder in which it should be located
- add a description including images and web links



The following is an example folder structure.

5.3.1.2. Edit

The edit folder tool allows you to change the folder name and icon.

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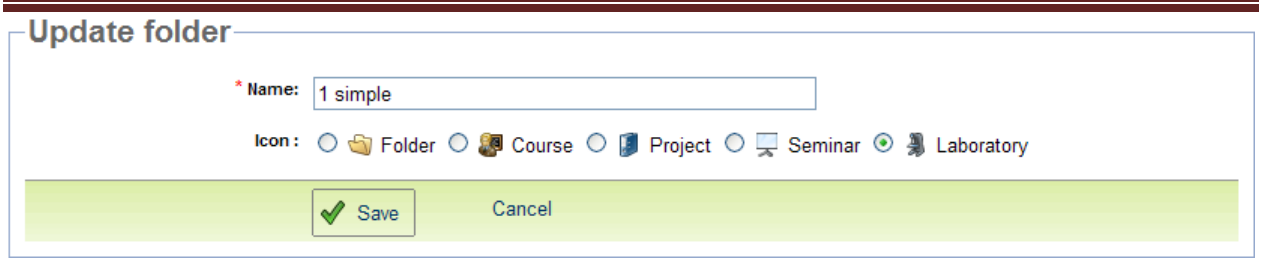
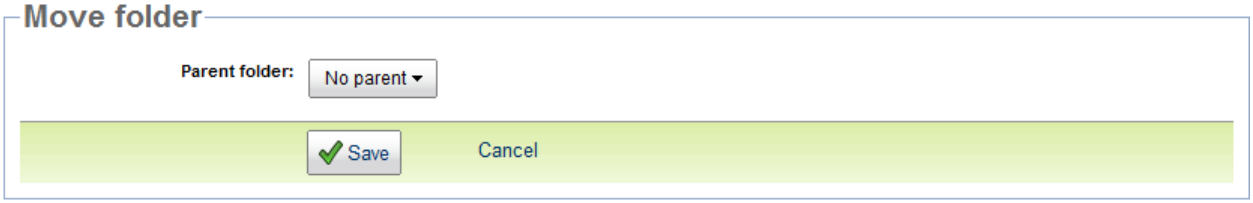


5.3.1.3. Move

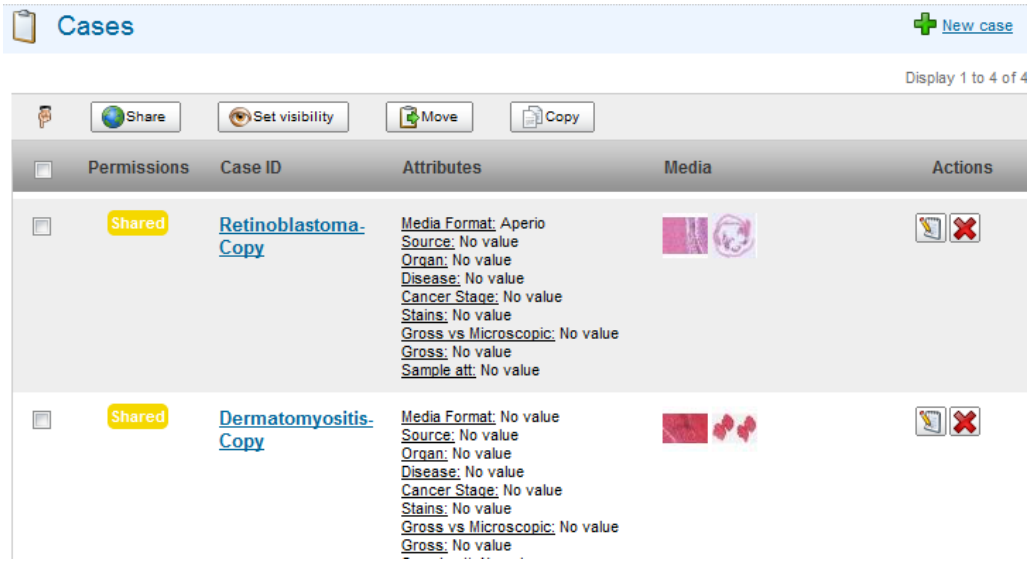
The move folder tool allows you to change the position of the folder in the tree.



5.3.1.4. Cases

Adding cases to folders is done by selecting “New case” at the top right of the cases section of the folder, or copying/moving a case from another folder or the atlas. Mass changes to Sharing, Visibility, Moving, and Copying can be done by selecting cases and the action you wish to perform.

For more information on cases refer to section (4.7 Cases).



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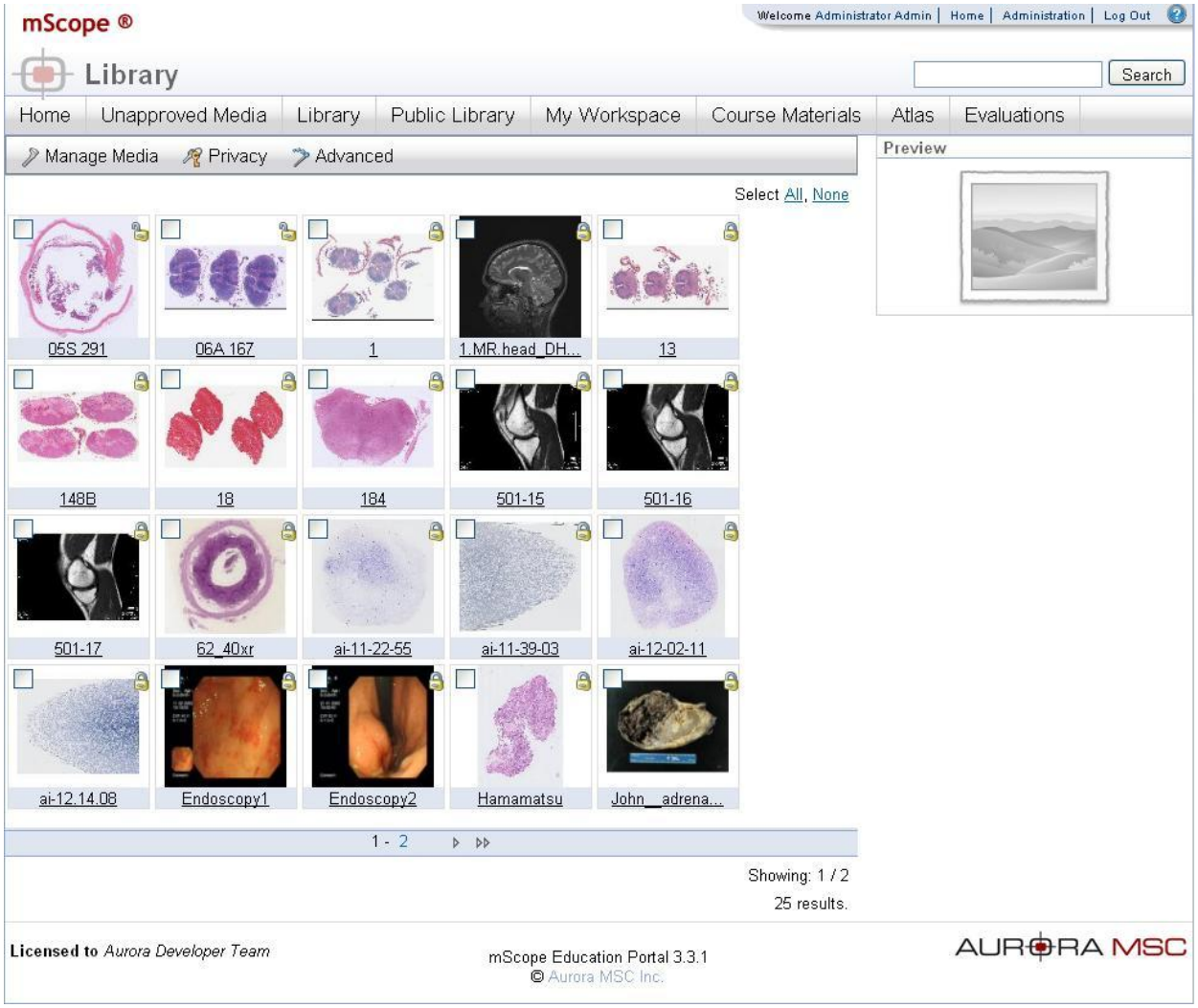
5.4. Library

The "Library" Module is a monolithic storage area for Public Media available to all Users and Groups. It has no rules for organizing or filtering.
Media is added to the Library (with a choice of whether or not to include Annotations) by Dispatching from Unapproved Slides or Exporting from the Atlas or My Documents Modules. Similarly, Media may be exported to other modules from the Library, again with the choice of whether or not to include Annotations added to it from within the Library Module.

To navigate the Library Module, use the menu at the bottom of the page:



Media Previews

Clicking on a Media thumbnail will bring up a Media Preview on the right hand side of the screen. Please refer to **section 4.26.1 Media Preview** for a detailed explanation of this feature.

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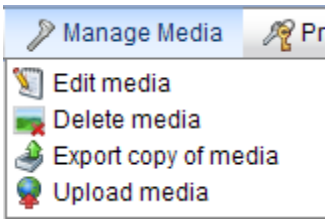
Media Toolbar Operations

The other Media operations that may be performed in the Inbox are shown in the Media Toolbar located above the Media thumbnails:



Edit: Please refer to **section 4.26.6 Edit** for a detailed explanation of this feature.

Delete: Please refer to **section 4.26.7 Delete** for a detailed explanation of this feature.

Export: Please refer to **section 4.26.3 Export** for a detailed explanation of this feature.

Upload: Please refer to **section 4.26.4 Upload** for a detailed explanation of this feature.

Public: Please refer to **section 4.26.5 Public & Private Media** for a detailed explanation of this feature.

Private: Please refer to **section 4.26.5 Public & Private Media** for a detailed explanation of this feature.

Copyright: Please refer to **section 4.26.8 Copyright** for a detailed explanation of this feature.

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Thumbnail: Please refer to **section 4.26.9 Generate Thumbnail** for a detailed explanation of this feature.

Light: Please refer to **section 4.26.10 Generate Light Version** for a detailed explanation of this feature.

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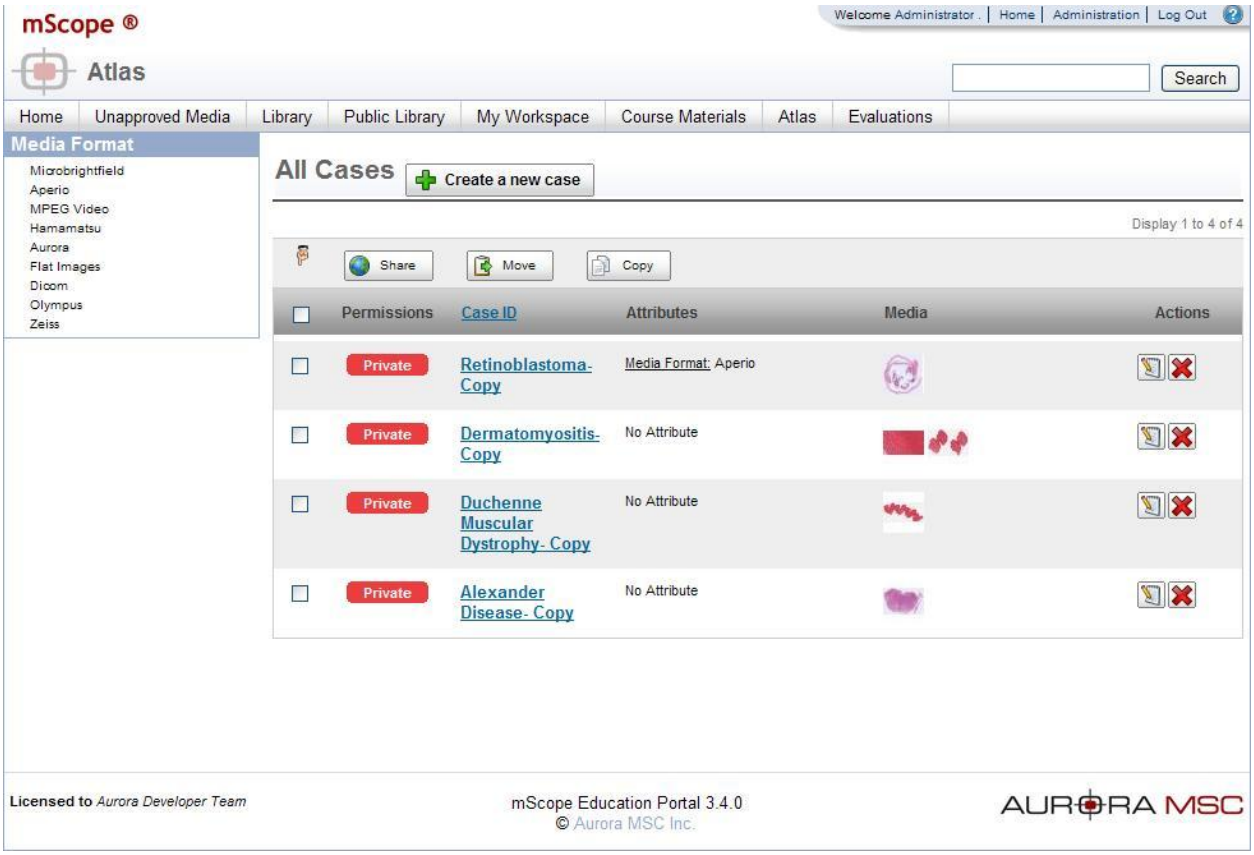
5.5. Atlas

The "Atlas" Module allows you to create and store cases without the need for folders as is required by "Course Material". Cases may be filtered via User-defined Attributes. These Attributes may be selected on the left of the window as seen in the image below.

Should a filtering of Media produce more than one page of results, use the following menu at the bottom of the page to navigate: 1 2 Next > Last >>

Cases are listed in the order they are created and may be sorted by the "Case ID". This is done by selecting the "Case ID" heading above the case. Cases display their

- Permissions - Private (only the author can view), Shared (users selected by the author may view), Public (everyone can view)
- Case ID - Title of the case
- Attributes - case specific attributes defined for the specific case
- Media - images associated with the case
- Actions - Edit (modify case information), Delete



Case Operations

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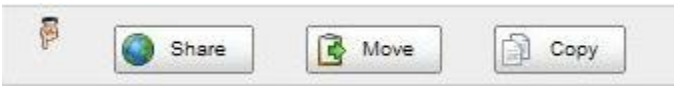
The Atlas provides case related tools located at the top of the list



Share: Please refer to **4.11 Case Sharing** for a detailed explanation of this feature.

Move: Please refer to **4.9 Case Move** for a detailed explanation of this feature.

Copy: Please refer to **4.10 Case Copy** for a detailed explanation of this feature.

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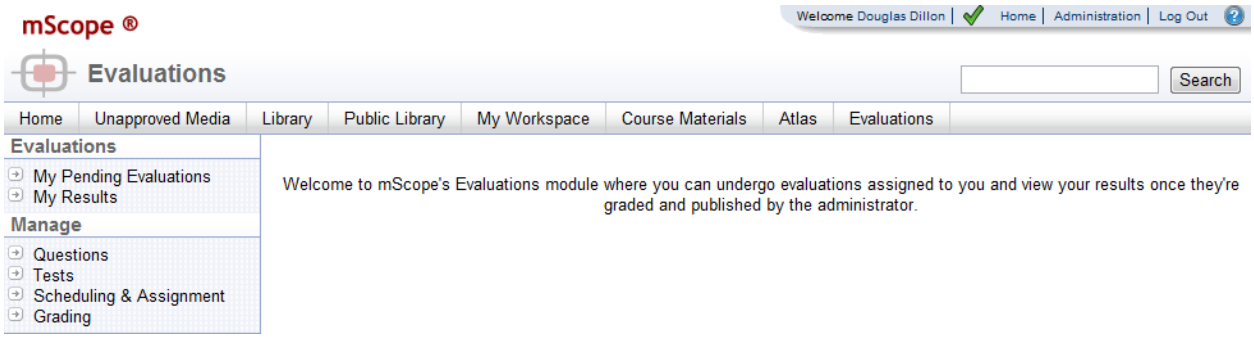
5.6. EVALUATIONS

The "Evaluation" Module provides tools to create, administer, and grade tests leveraging media. Student actions are listed on the left under "Evaluations" and testing administration options are available under “Management”:



Evaluation

My Pending Evaluations: Please refer to **4.25.1 My Pending Evaluations** for a detailed explanation of this feature.

My Results: Please refer to **4.25.2 My Results** for a detailed explanation of this feature.

Manage

Questions: Please refer to **4.25.3 Questions** for a detailed explanation of this feature.

Tests: Please refer to **4.25.4 Tests** for a detailed explanation of this feature.

Scheduling & Assignment: Please refer to **4.25.5 Scheduling & Assignment** for a detailed explanation of this feature.

Grading: Please refer to **4.25.6 Grading** for a detailed explanation of this feature.

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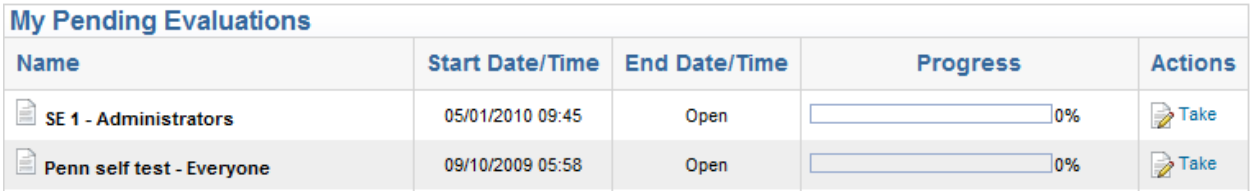
5.6.1. My Pending Evaluations

Selecting "My Pending Evaluations" lists all upcoming and running tests. When a test is ready to begin the action will become available to the user. Picking the Take Test action will open the test for the user.

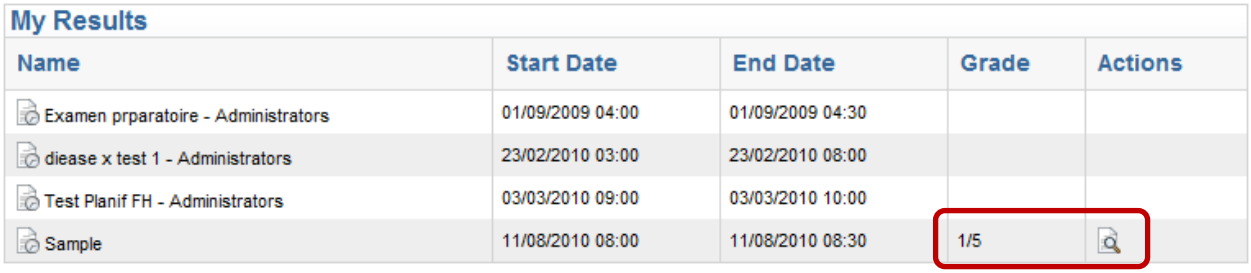


My Pending Evaluations

Name	Start Date/Time	End Date/Time	Progress	Actions
SE 1 - Administrators	05/01/2010 09:45	Open	0%	Take
Penn self test - Everyone	09/10/2009 05:58	Open	0%	Take

5.6.2. View Test Results

The second option available to a student is View Evaluation Results which displays the marked evaluations window. Published Evaluations are listed with the mark assigned and the ability to review the evaluation and see any comments made by the marker.



My Results

Name	Start Date	End Date	Grade	Actions
Examen prparatoire - Administrators	01/09/2009 04:00	01/09/2009 04:30		
diease x test 1 - Administrators	23/02/2010 03:00	23/02/2010 08:00		
Test Planif FH - Administrators	03/03/2010 09:00	03/03/2010 10:00		
Sample	11/08/2010 08:00	11/08/2010 08:30	1/5	

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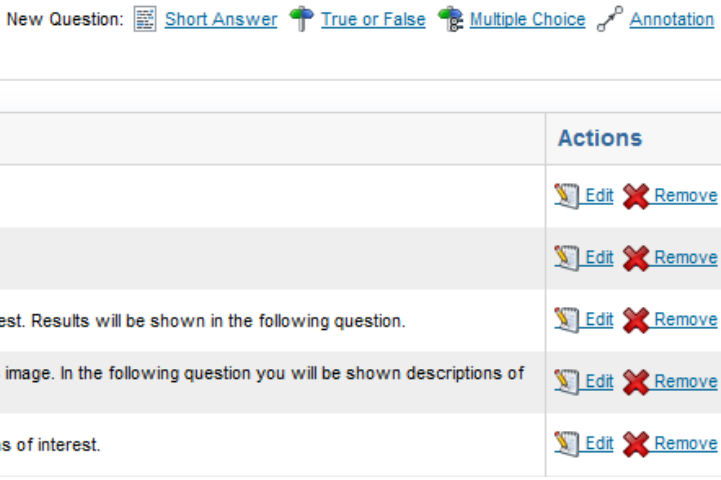
5.6.3. Questions

Questions stores all questions defined by evaluation administrators.

"New Question" allows you to create a question based on the available types (Short Answer, True or False, Multiple Choice or Annotation).

Questions may be modified or remove by selecting the action in the question list.



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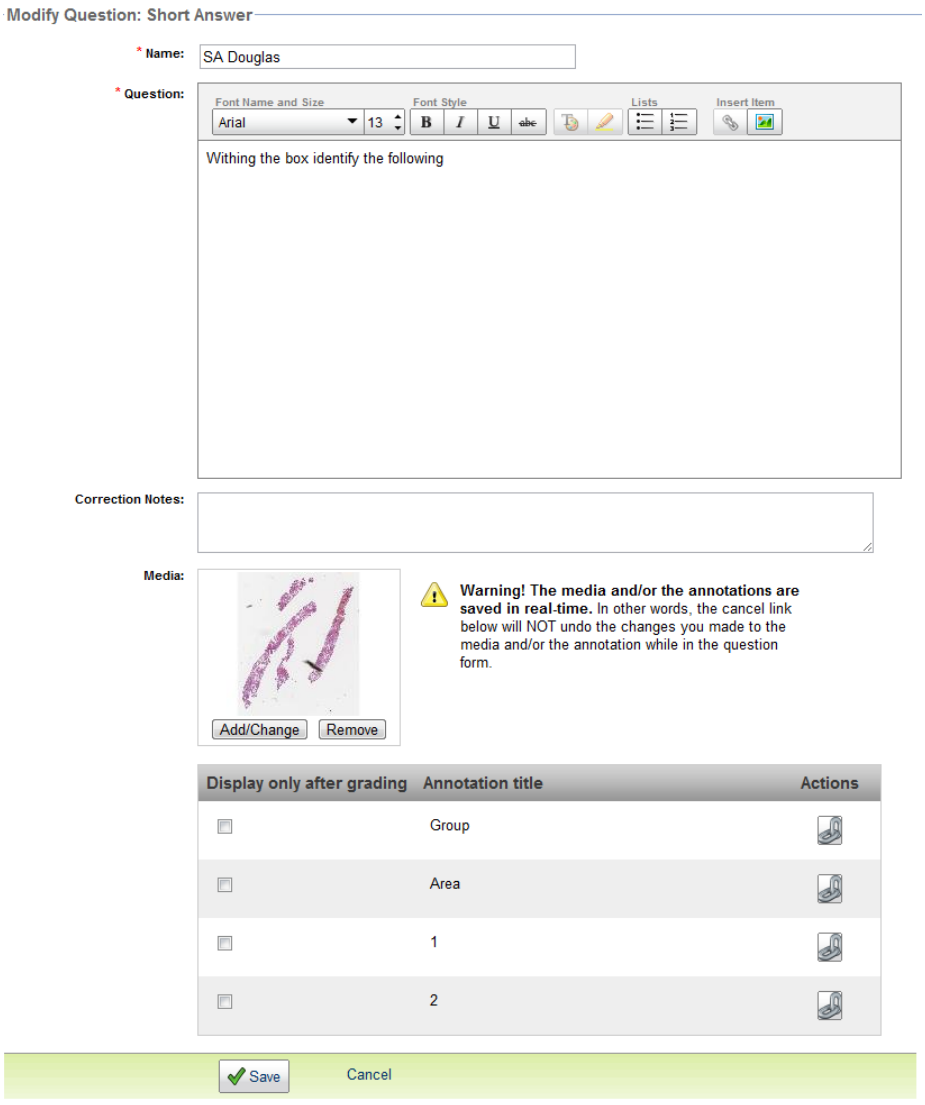
Short Answer

Short Answer questions are defined as follows:

1. **Name**: required value that uniquely identifies the question
2. **Question**: required description of what the question is asking
3. **Correction Notes:** optional information for whoever marks the Question
4. **Media**: optional image to be displayed
5. **Annotation display**: enables hiding of selected annotations until after testing is complete



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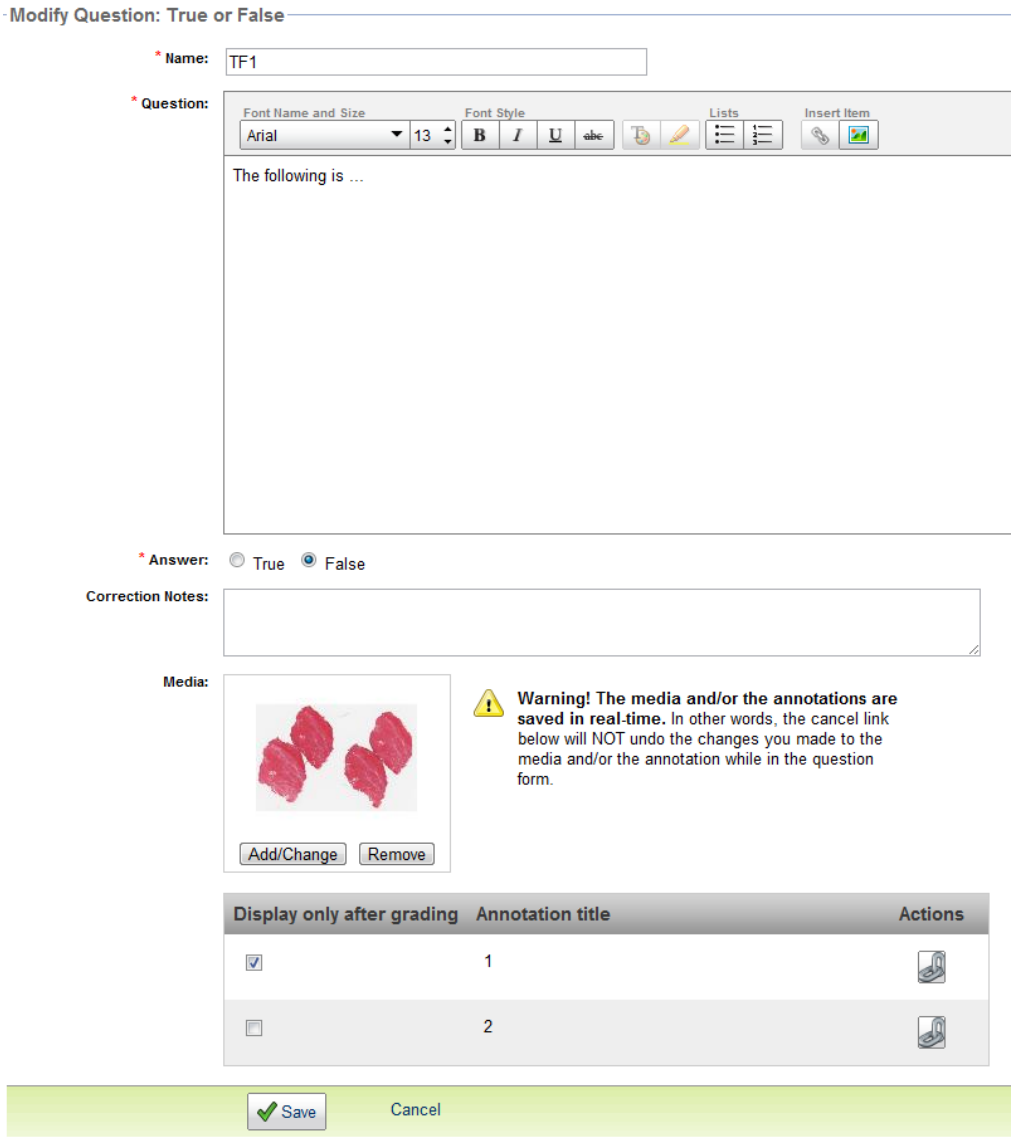
True or False

True or False questions are defined as follows:

1. **Name**: required value that uniquely identifies the question
2. **Question**: required description of what the question is asking
3. **Correction Notes:** optional information for whoever marks the Question
4. **Media**: optional image to be displayed
5. **Annotation display**: enables hiding of selected annotations until after testing is complete New



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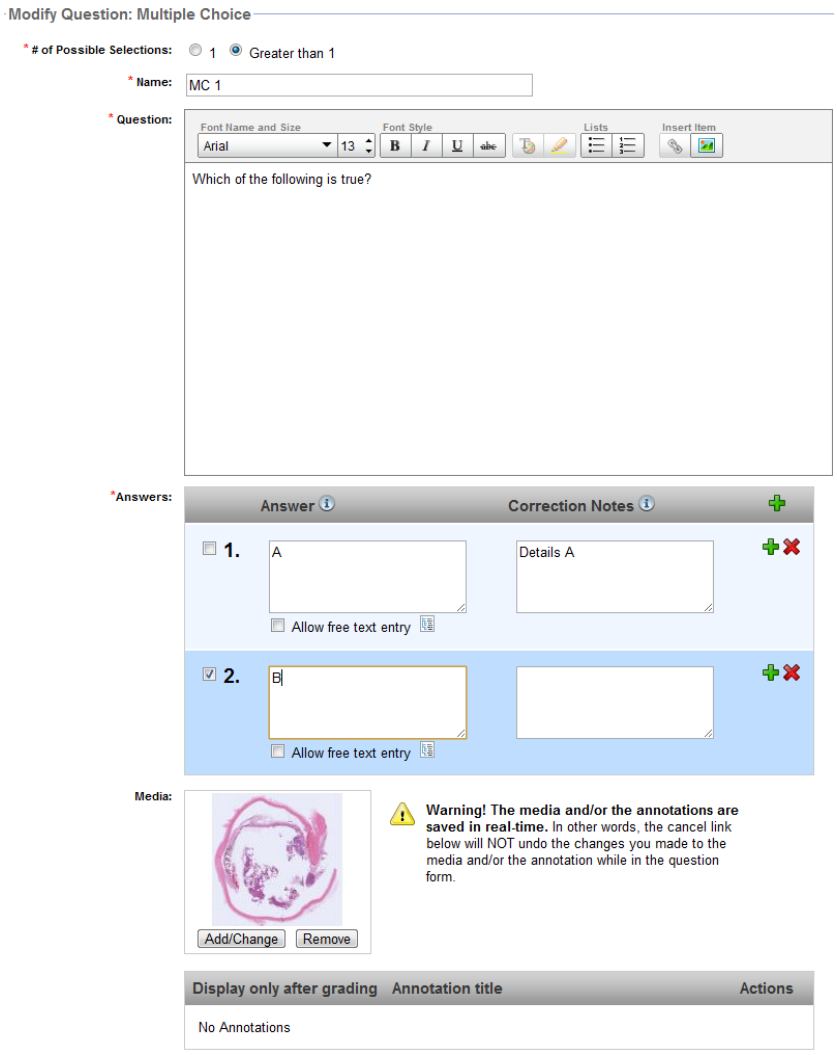
Multiple Choice

Multiple Choice questions are defined as follows:

1. **# of Possible Selections:** if greater than 1 the student may select multiple answers New
2. **Name**: required value that uniquely identifies the question
3. **Question**: required description of what the question is asking
4. **Answers:** choices are created using **"+"** . Correct answers are selected with the check box "Correction Notes" provide feedback for incorrect answers New
5. **Media**: optional image to be displayed
6. **Annotation display**: enables hiding of selected annotations until after testing is complete New



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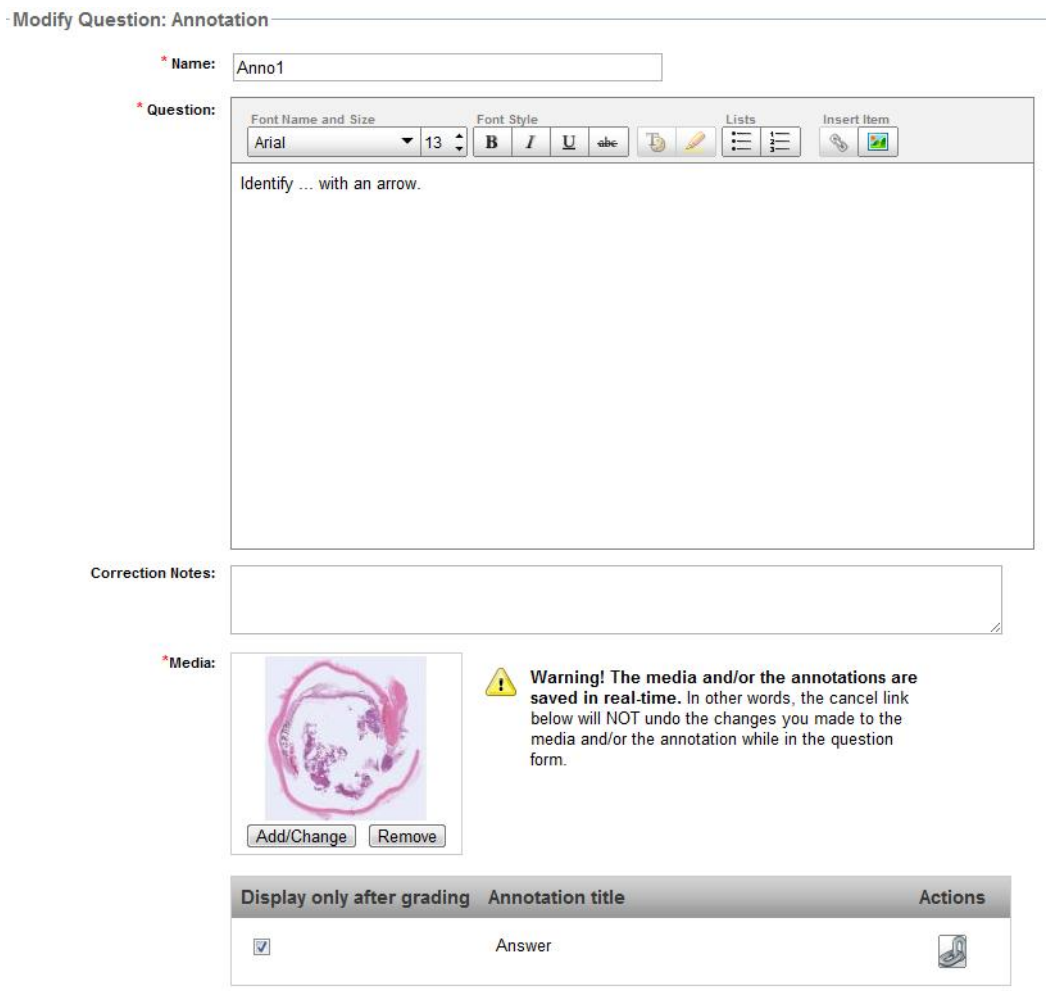
Annotation

Annotation questions are defined as follows:

1. **Name**: required value that uniquely identifies the question
2. **Question**: required description of what the question is asking
3. **Correction Notes:** optional information for whoever marks the Question
4. **Media**: optional image to be displayed
5. **Annotation display**: enables hiding of selected annotations until after testing is complete New



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5.6.4. Tests

Select Add New to create a test. Adding questions to a test is done by selecting Questions and you can change the test name by selecting Update.

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Questions

The questions page is broken into two sections. The first is for selecting questions to add to the test as well as assigning marking values and the second lists all questions associated with the test.

Question weights can be modified and removed with or . Please note that in the event a Questions is used in multiple Tests, editing it will only change it in the context of the current Test:

Browse Questions in Test (Demo Quiz for Dr Rojo.)

Weight	Name	Question	Actions
10	**Penn MC question 2** Type: Multiple Choice	Identify the false statement from the one below (there is only one).	Edit Remove
10	**Penn SA question 1** Type: Short Answer	Based on your experience, what improvement could be made to our product to improve your satisfaction?	Edit Remove
10	**Penn TF question 2** Type: True or False	Aurora provides the best software platform for digital imaging, true or false?	Edit Remove
10	**Penn Ann question 3** Type: Annotation	Identify with a circle, the area of tubular necrosis.	Edit Remove

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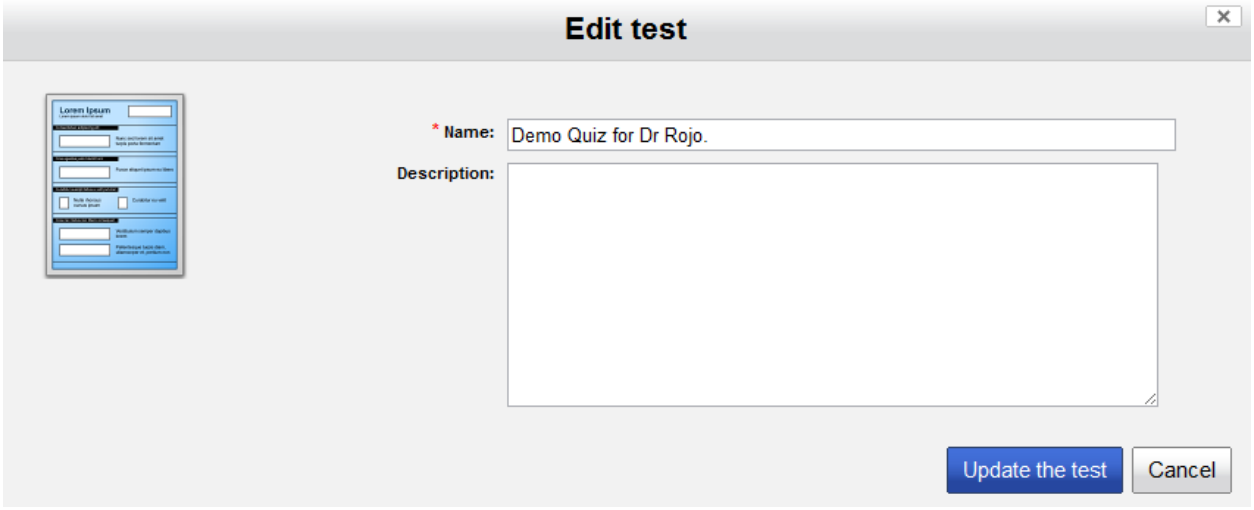
Edit Test

Choosing to edit a Test allows you to change the Test Name and Description:



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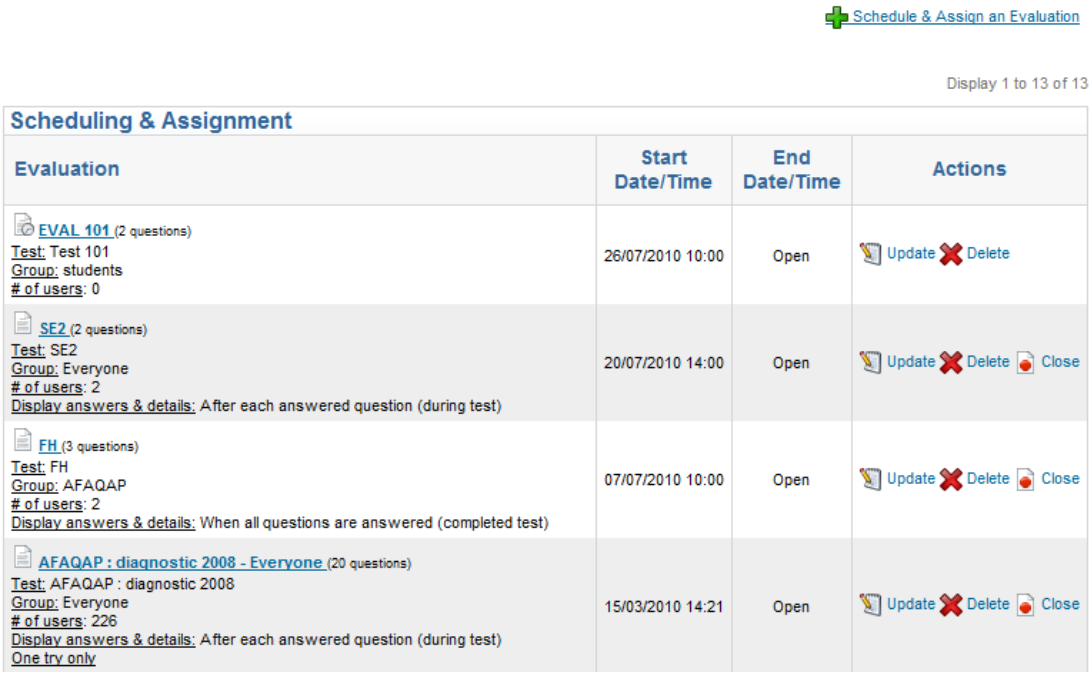
5.6.5. Scheduling & Assignment

Scheduling lists all pending tests detailing who they are assigned to, the duration, and options for modification.



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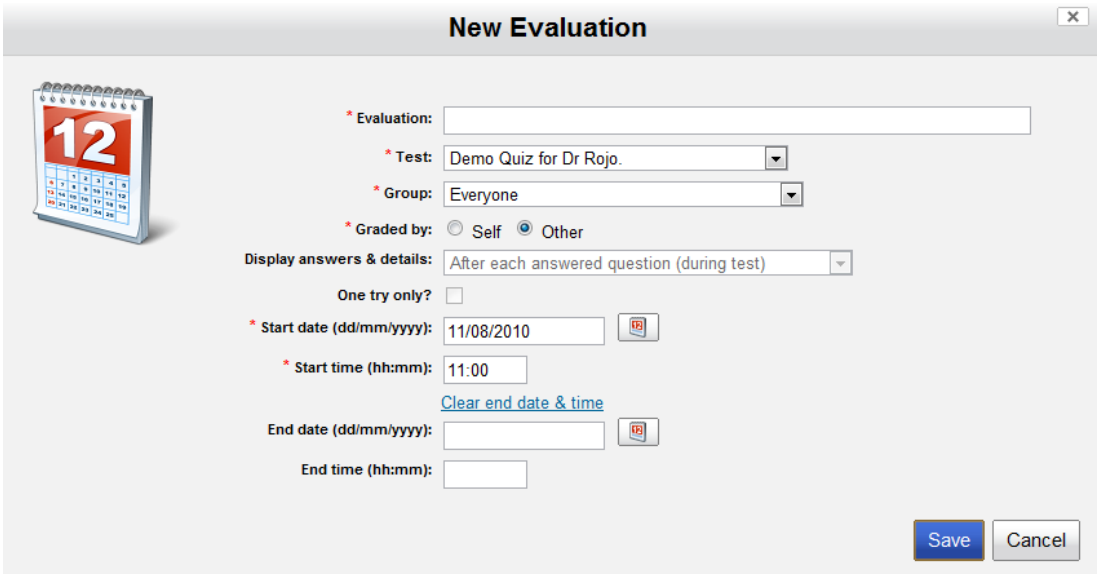
Select “Schedule & Assign an Evaluation” from the top right of the page to assign at test. This will open the New Evaluation window which requires the following:

1. Evaluation: name for the test
2. Test: the test you wish to assign
3. Group: the user group that will be taking the test
4. Graded by: if “Self” is selected the student will have access to the corrected test when they have completed the test or question. “Other” will require the test be marked by an administrator
5. Display answers & details: when self testing you may choose to show the answer immediately after the question is completed or wait till the test is complete
6. One try only: when self testing you may allow the student to take the test multiple times



Once assigned the following actions are available:

Update: reschedule the test

Delete: cancel the test

Close: halt a self evaluation test

Open: resume a closed self evaluation test

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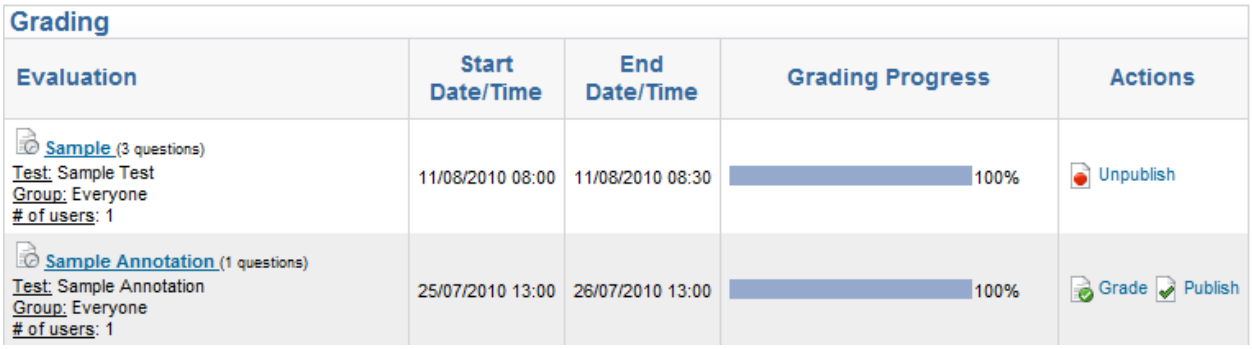
5.6.6. Grading

Grading displays all completed tests ready for marking and all self evaluation tests.

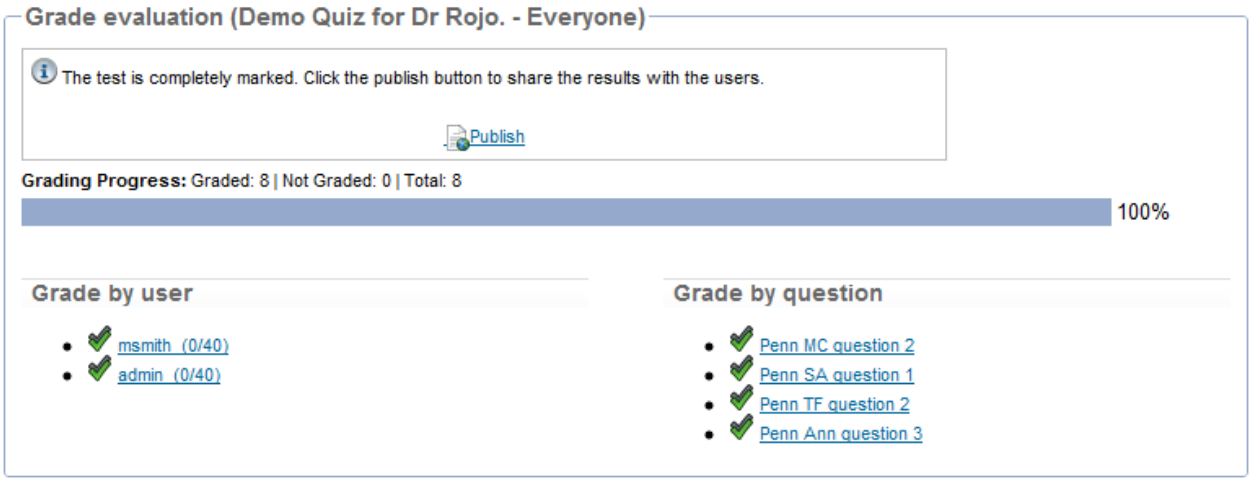
"Publish" opens the results to the students making them available under "My Results" while "Unpublish" hides them. Test that require marking have an additional "Grade" action.



Grading Methods

When grading a test you may choose to "Grade by user" or "Grade by question". Grading by user entails marking all questions for a specific student before moving to the next. Grading by question allows you to mark all instances of a question for a test. This is useful if you wish to split marking between multiple assistants. You can assign questions 1-2 to one assistant and 3-4 to another.

Once grading is complete you will have the option to publish the result.



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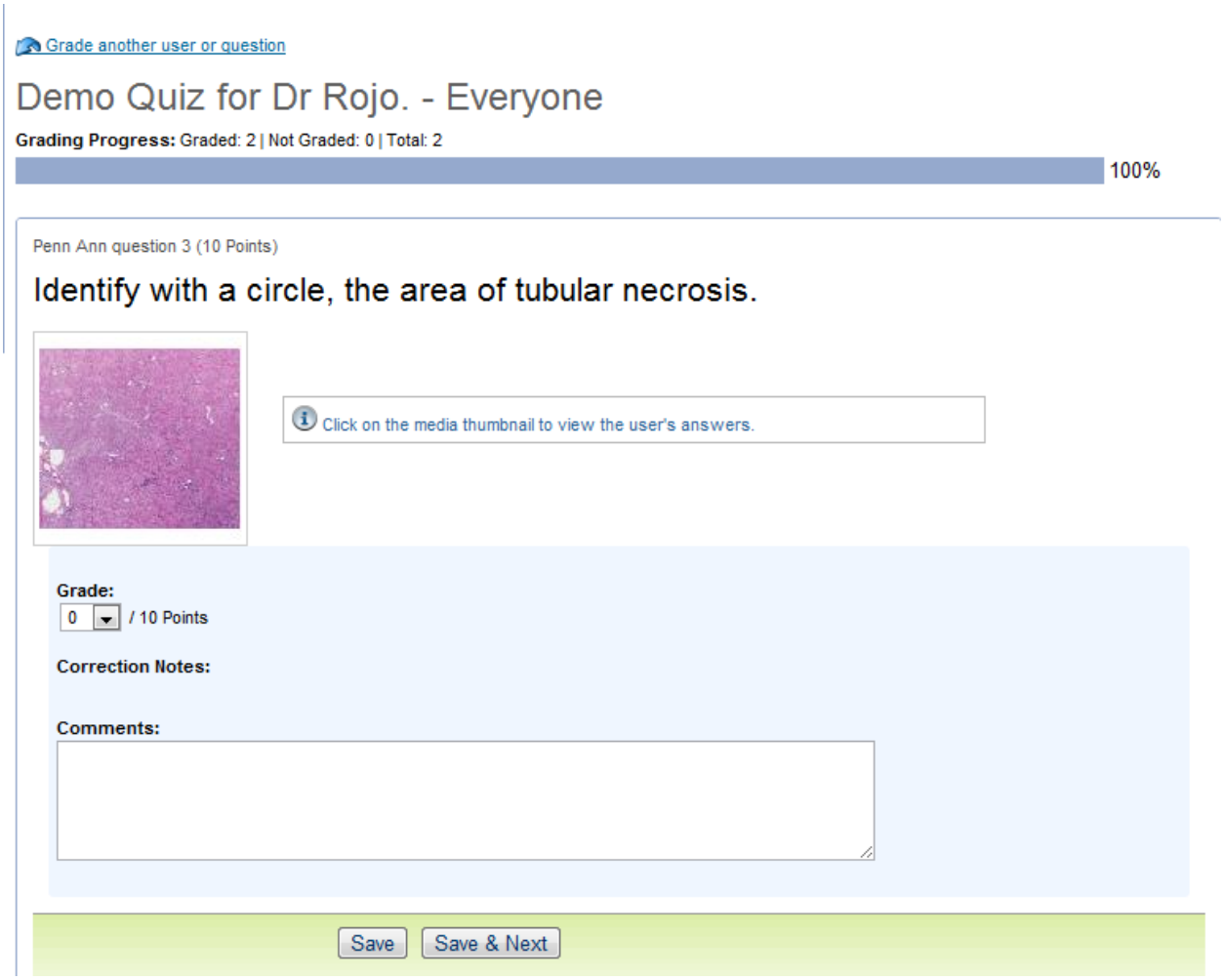
Question Grading

When grading questions you will see the question along with any correction notes provided by the author. To assign a mark select the dropdown list on the left above the question. You can provide the student details as to the correct response in the comments section.



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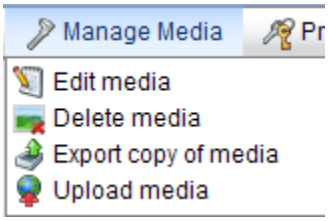
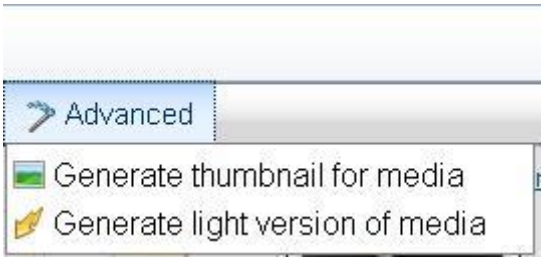
5.7. Media Tools

This section describes the tools available to manage Media within various Modules of the mScope Education Suite.





mScope Portal Media Tools include:

- Edit
- Delete
- Export copy
- Dispatch
- Upload
- Make Public
- Make Private
- Update copyright owner
- Generate thumbnail
- Generate light version

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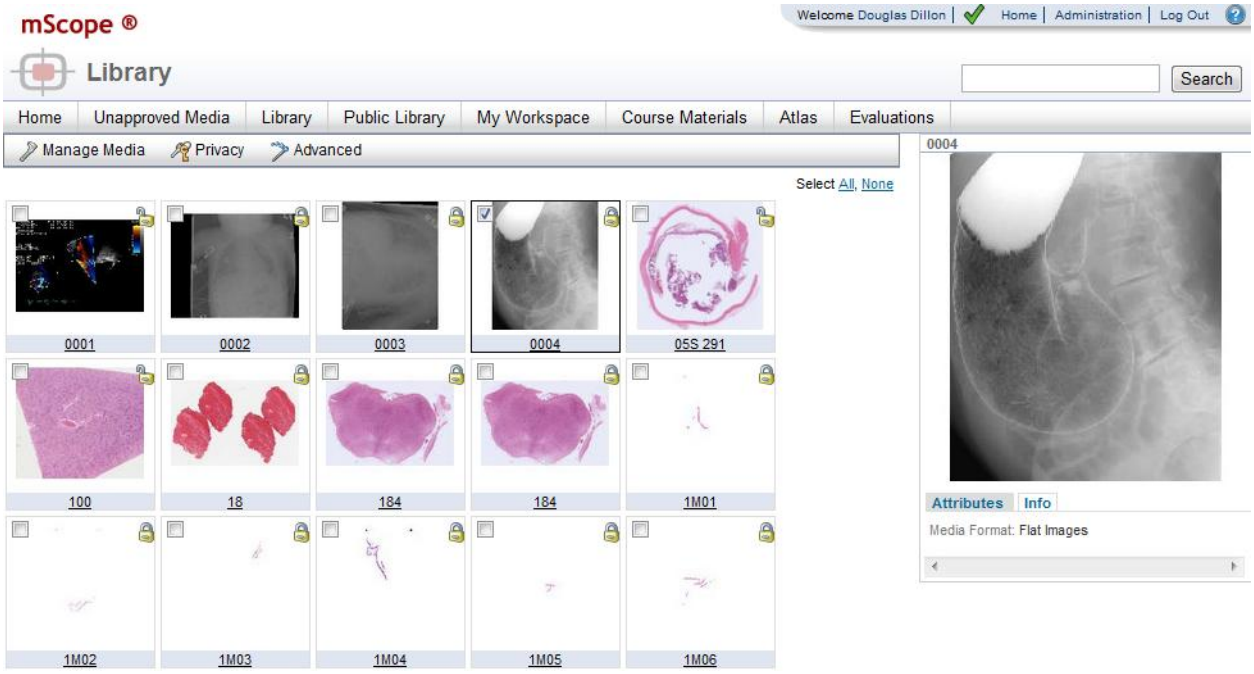
5.7.1. Media Preview

Clicking on a Media thumbnail within many mScope Modules initiates the Preview and displays the Media information via two tabs: "Attributes", and "Info":



Attributes

The "Attributes" tab displays all Attributes defined in mScope and assigned to the Media (see image above).

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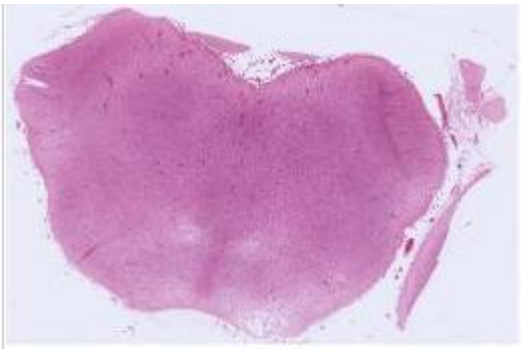
Info

The "Info" tab displays general information about the media such as when it was captured, by what device, when it was added, by whom, etc.:



Attributes | Info

Public: No
File Size: 1.22 GB
Reference ID: 184
Copyright Owner: Administrator Admin
Filename: C:\hdd_slides\slides\aperio\184.svs
Path: /Library/
From Server: Default MSC Media Server

Scan Date: Jul 19, 2007 1:22:36 PM
Ingestion Date: Apr 8, 2010 3:09:20 PM
Dispatched By: Administrator
Dispatched Date: Apr 8, 2010 3:16:25 PM
Published By:
Published Date:
Un-Published By: Administrator Admin
Un-Published Date: Apr 8, 2010 3:16:25 PM

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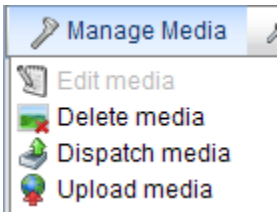
5.7.2. Dispatch

Once Media have been deemed to be of sufficient quality to be moved from the Unapproved Slides Module, the "Dispatch" tool is used to file them in the appropriate mScope Portal Module(s). Simply select the "Dispatch" tool in the Media Toolbar located above the Media thumbnails:



Doing so will redirect the User to the Dispatch window:

Enter an appropriate Reference ID and copyright owner for the Media and click "Next" to proceed to the Attributes window:

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Choose appropriate Attributes for the Media to enable filtering and searches and choose "Next" to proceed to the Destination window:

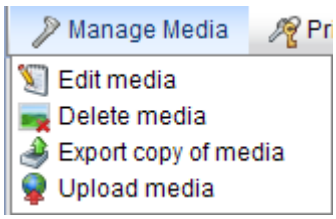
Now choose the destination(s) for the Media and Finish.

5.7.3. Export

Export allows a User to make logical copies of Media (and their References) in other mScope Portal Modules. Exporting is permitted (subject to the User's permissions) between:

- My Workspace (Inbox and Public)
- Course Materials
- Library

Exporting is initiated by selecting Media and clicking "Export" in the Media Toolbar located above the Media thumbnails:



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The User will then have the option of modifying the Reference ID of the Media:

After deciding on the appropriate Reference ID the User will be prompted to define Attributes for the Media, if required:

The User will then be asked for the Destination(s) to which he/she wishes to Export the Media:

When Exporting Media it is also possible to copy any Annotations associated with it. When Exporting a

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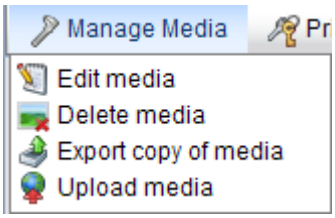
single instance of Media, choose the specific Annotations you'd like to copy as illustrated below. When exporting multiple Media the User will have the option of Exporting all or none of the Annotations. It is important to note that Annotations are specific to the Module in which they were created. For instance, Annotations added to Media in a Case will not appear on the original Media in the Library or a copy of the Media in another Case.

5.7.4. Upload media

Media can be manually uploaded to the mScope Portal by selecting the "Upload" option in the Media Toolbar located above the Media thumbnails:



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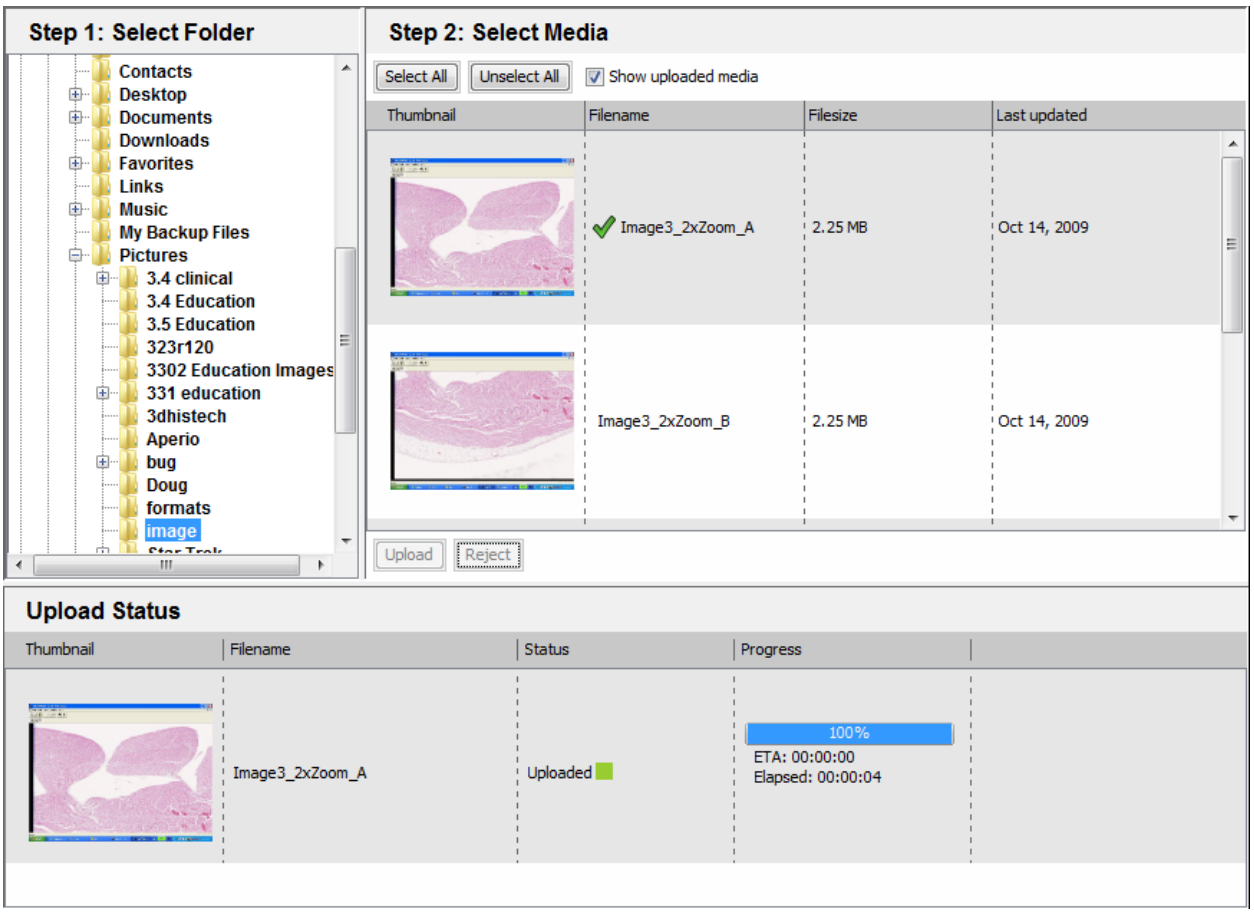
"Upload New Media" allows you to add media from your local machine to the mScope application. The process involves two steps identified on the window.

1. Selecting folder on your drive where the media is located. All media will appear in the “Step2” pane.
2. Select the file(s) you want to upload. Use the Shift or Ctrl keys to select multiple files.
    - Upload will copy the files to the server
    - Reject will remove selected files from the list of files media available for upload

The status pane shows the progress of media being uploaded.



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5.7.5. Public & Private Media

The "Public" and "Private" Media tools allow a User to choose which Media to publish (make Public) to the My Documents/Public Documents Folder of other Users. This feature is permitted (subject to the User's Permissions) within the following Modules:

- My Documents
- Library

This is accomplished two ways:

1. Selecting Media and clicking "Public" or "Private" in the Media Toolbar located above the Media thumbnails:

2. Hovering the mouse over a Media thumbnail and clicking the small icon in the upper right. The "Lock" icon to makes it Public and the "Unlock" icon makes it Private:

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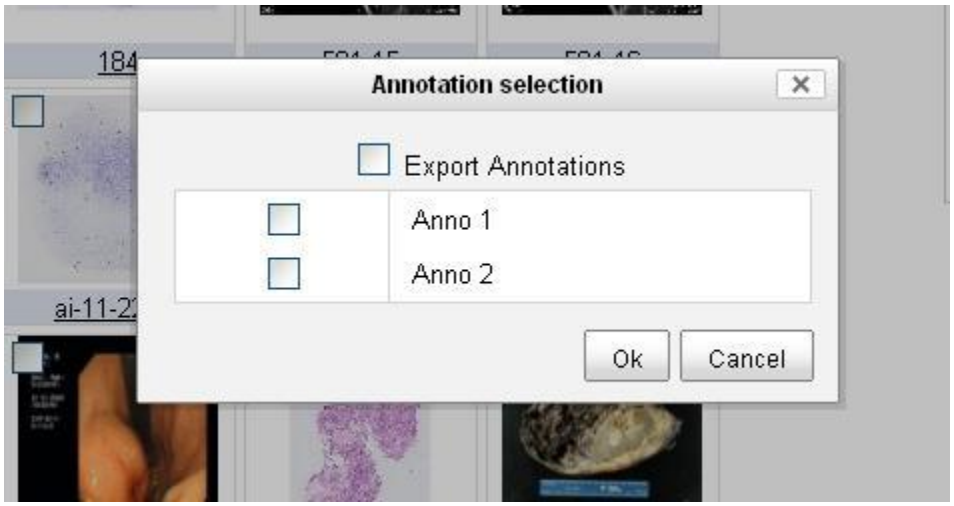
When the "Private" tool is used, the Media will disappear from the My Documents/Public Documents Folder of other Users. When the "Public" tool is used, the Media will appear in the My Documents/Public Documents Folder of other Users. When making Media Public, the User will be prompted as to whether or not he or she wishes to include the Media Annotations in the Public version:



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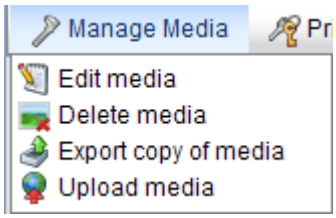
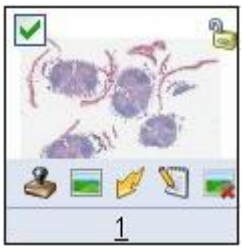
5.7.6. Edit

Edit" allows a User (subject to his or her Permissions) to modify the properties of Media and may be initiated in two ways:

1. Selecting "Edit" in the Media Toolbar located above the Media thumbnails:



2. Hovering the mouse over the Media thumbnail and clicking the small pencil icon:



The User will then have the option to modify the Media properties:

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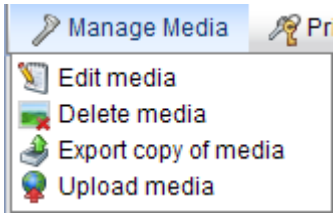
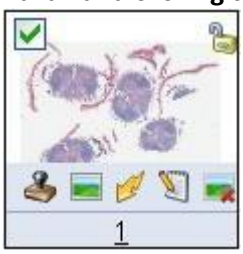
5.7.7. Delete

Deleting Media from an mScope Portal Module may be initiated in two ways:

1. Selecting several Media files and clicking the "Delete" button of the Media Toolbar:



2. Hovering the mouse over the Media thumbnail and clicking the icon at the bottom right:



5.7.8. Copyright

Copyright allows you to define ownership of media. Selecting "Update media copyright owner" from the "Privacy" section allows you to change the Author and Copyright Owner. Only users with permission to modify copyright may do so.

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5.7.9. Generate Thumbnail

Generate Thumbnail allows you to create thumbnails for images that do not have them. This is however rare when working with whole slide images.

5.7.10. Generate Light Version

For efficiency in streaming mScope can create a "Light" version of a slide. Some formats produce tiles that overlap one another and must be positioned. Light images are special in that they contain no overlap between tiles ensuring no redundant information is requested.

This is only available for Zeiss at this time.

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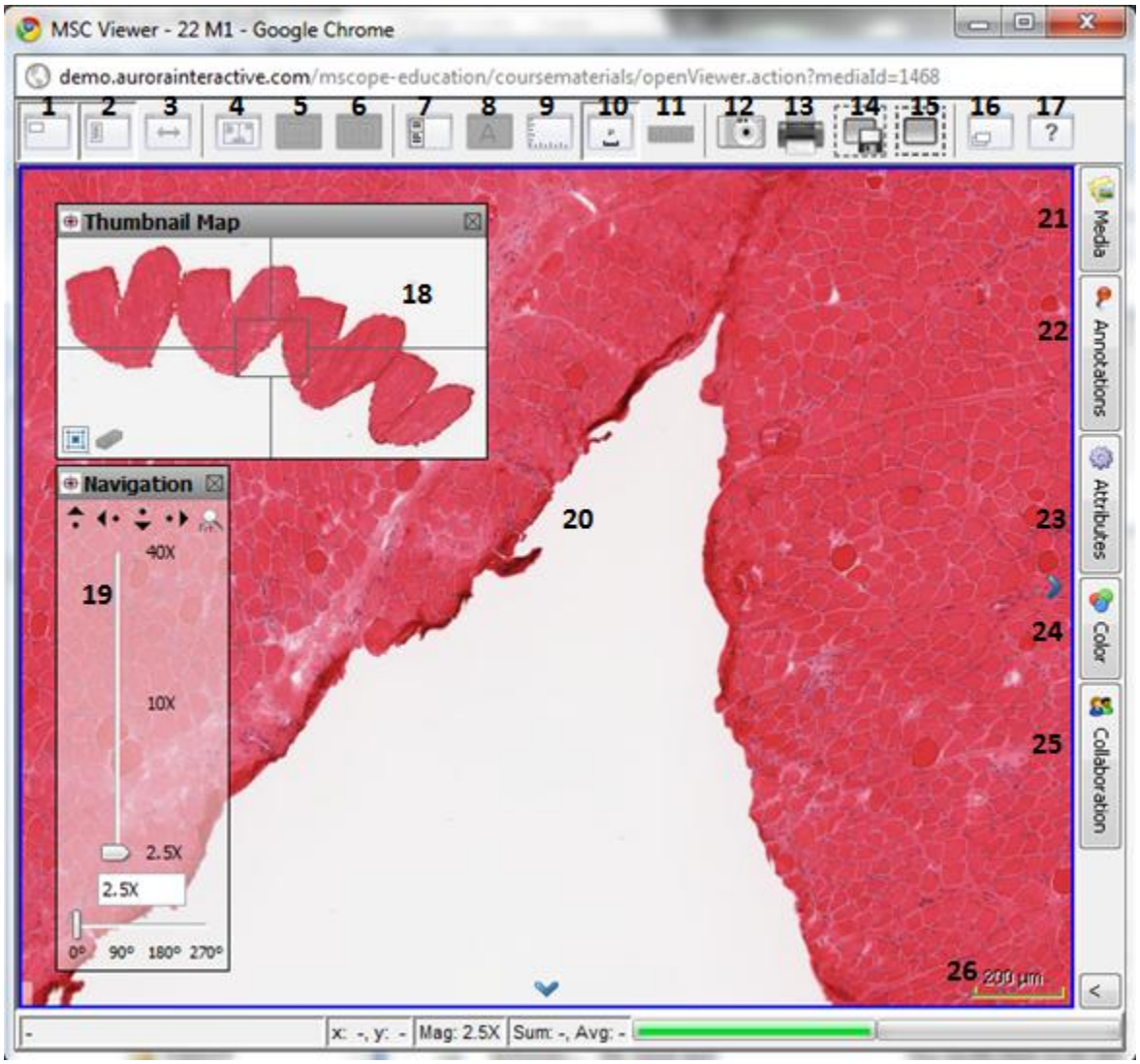
6. mScope Viewer

This section describes all the main components of an mScope Education Suite, how they interact and their primary functions.

6.1. Viewer Basics

The features of the viewer are identified on the image and described below:



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1. Show/Hide Navigation Window: toggles window (24) on and off **2. Show/Hide Magnification**: toggles window (25) on and off **3. Mode**: switch navigation mode between Default (drag left to move media left) and Microscope (drag left to move media right) New **4. Split Screen**: allows you to have two images displayed at the same time New **5. Orientation**: switch between having 2nd on the right or underneath New **6. Synchronize view**: locks the position of the images so moving one will result in an equal move in the other **7. Slide Details**: displays the details tab on the left of the screen containing slide details along with annotations and groups for viewing only **8. Attributes**: allows persistent display of image attributes (must be configured by the administrator to be available) **9. Grid**: cycles through available grid types **10. Show/Hide Scale**: toggles the legend New **11. Clear Measurements**: Removes temporary measurements from the image (only available if the original media includes metric information) **12. Snapshot**: captures the current field of view as a .jpg to your computer **13. Print**: sends the current view to the printer **14. Detailed Snapshot**: captures a region defined by the user (left click, drag, and release) to create a .tiff file with based on the resolution requested on your computer	**15. Key Image Snapshot**: uses a region defined by the user (left click, drag, and release) to create a view of the defined area without creating a new image **16. Sub Images**: cycles through any additional sub images if they are present **17. Help**: description of how to navigate images **18. Navigation Window**: provides overall view of media, what area you are looking at **19. Magnification Window**: allows control of magnification and provides tools for navigating and rotating the image **20. Main Image Window**: current view area of the image **21. Media**: all media associated with a case, jump to any media by clicking on it **22. Annotations**: allows for creation, organization and viewing of annotations depending on your permissions **23. Attributes**: detailed information about the media including any assigned mScope attributes **24. Color**: non-persisted adjustments for brightness, contrast, gamma, red, green, and blue **25. Collaboration**: work with others viewing and annotating the image at the same time as if through the same eyepiece **26. Scale**: provides size information when the information is available

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6.2. Opening the viewer for the first time

The mScope viewer is a JAVA Applet so it will work in any Web browser. The first time you open an image the viewer will be downloaded to and installed on your machine. The process may take some time if your connection is slow and your settings may ask you to accept it; if so, be sure to select the remember option to avoid the question in the future.

New

6.3. Viewer Performance

Increasing the viewer memory (Section 3.6) will improve performance by allowing it to pre-fetch more of the image you are viewing. The following are recommended memory settings.

Physical memory of Computer	Recommended mScope viewer memory
Less than 1 Gig	128 MB
1 to 3 Gig	256 MB
More than 3 Gig	512 MB

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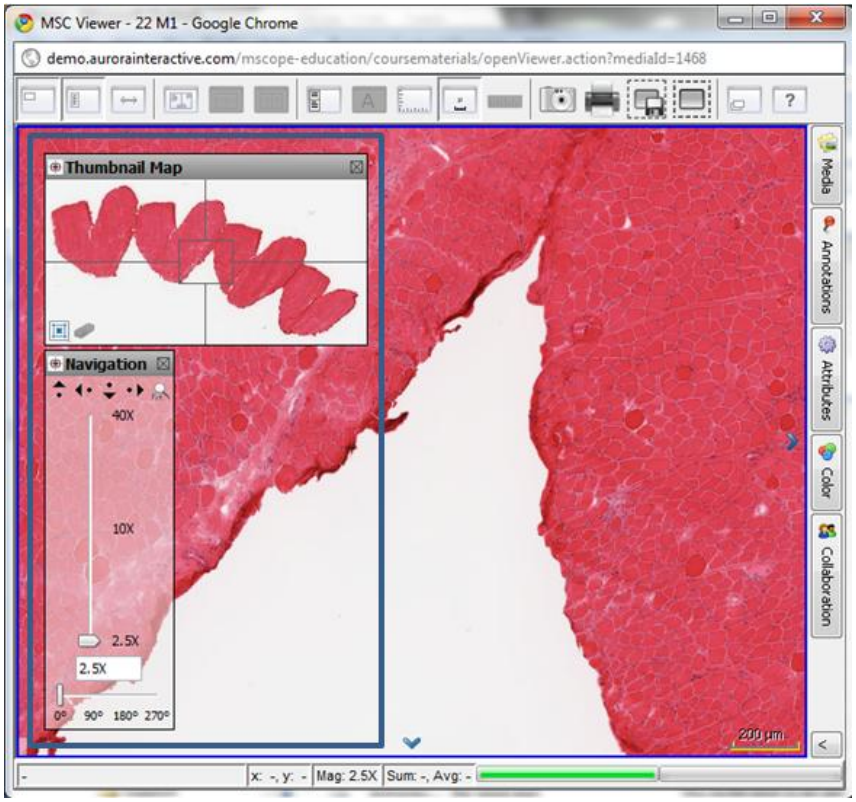
6.4. Navigating the image

Navigation of an image may be accomplished both by interacting directly with the image or using the navigation and magnification windows seen in the image area below. The basic navigation controls are as follows:

Action	Directly on Image	Thumbnail Map	Zoom Control
Zoom In	Left mouse button	N/A	Drag slider to a higher power
Zoom Out	Right mouse button	N/A	Drag slider to a lower power
Zoom to mouse	Alt left mouse	N/A	N/A
Zoom to area	Alt-left drag to define the area	N/A	N/A
Pan	Click and drag image	Click and drag the cross hair New	N/A
Jump to Location	N/A	Left mouse button on the center of desired location	N/A



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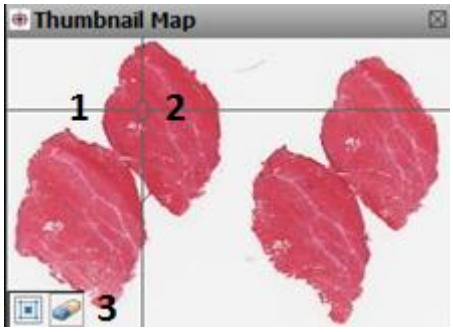
6.5. Navigation Window



1. **Image**: Thumbnail view of complete image
2. **ROI**: Region of interest identifying the current view area
    - you can drag the ROI to move the image in the main viewer
    - left clicking anywhere in the thumbnail will move the image to that location
3. **View History**: Highlights the areas viewed by the user (selecting the eraser clears the history) New

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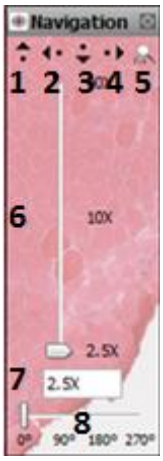
6.6. Magnification Window

1. **Scroll Left**: Scroll image right to bring what is left of the current display into view
2. **Scroll Right**: Scroll image left to bring what is right of the current display into view
3. **Scroll Down**: Scroll image up to bring what is below of the current display into view
4. **Scroll Up**: Scroll image up to bring what is below of the current display into view
5. **Zoom to Fit**: Fits the complete image into the viewer area
6. **Magnification Slider**: Select the magnification desired
7. **Rotate**: adjust the image orientation by the provided increments

New



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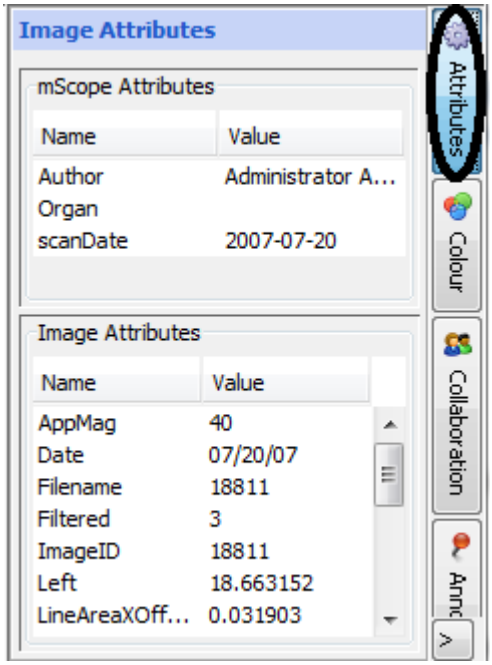
6.6.1. Attributes

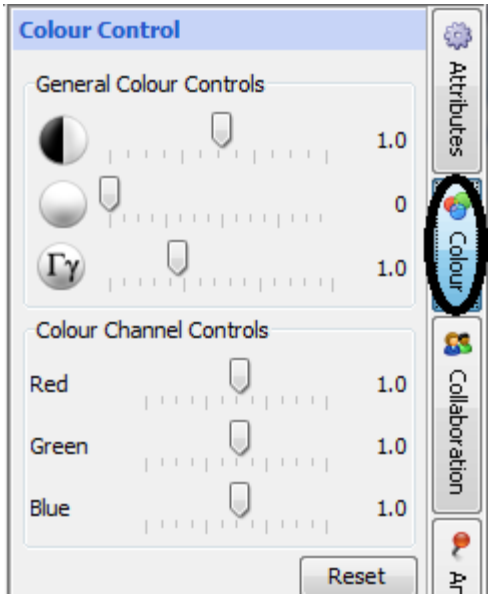
The Attributes tab provides detailed information about the media, including any assigned mScope attributes.



6.6.2. Colors

The Color tab provides non-persisted adjustments for brightness, contrast and gamma as well Red, Green, and Blue.

New



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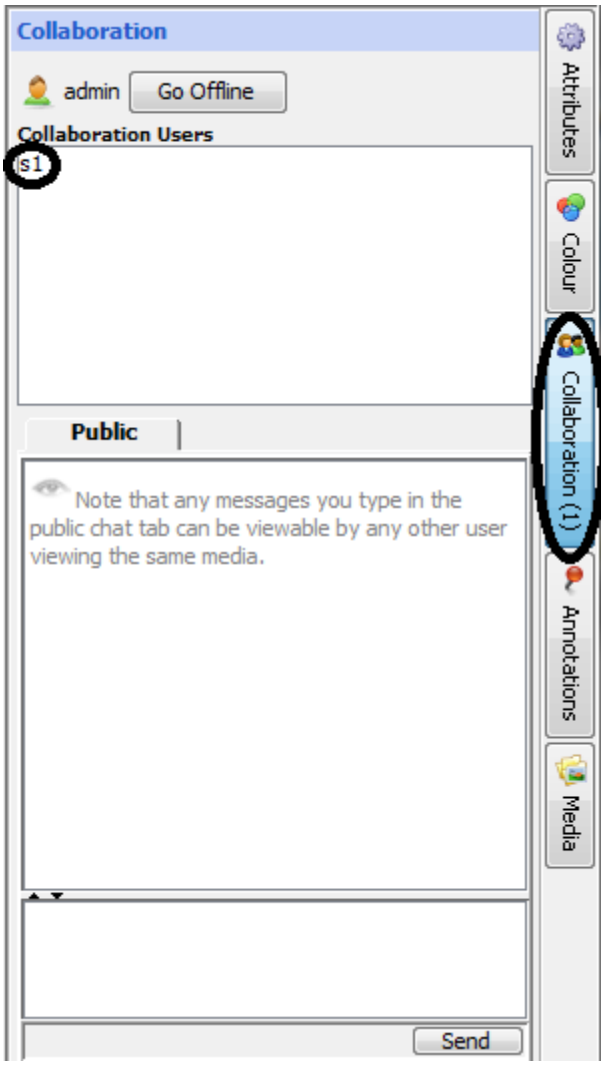
6.6.3. Collaboration

Collaboration

Collaboration enables multiple users to synchronize viewing of an image. A collaboration session is lead by a host. All actions taken by the host such as navigating the image and adding annotations are visible to the participants in real time. Participants may be located anywhere provided they have web access. The collaboration tab near the bottom of the module toolbar located on the right of the view lists the number of users currently viewing the image. Selecting the button shows you who these people are.



NOTE: An image may reside in multiple locations. For example, if two users have included the same image in cases in their shared documents they will not see each other when looking at the image since the images they are viewing are in separate case.

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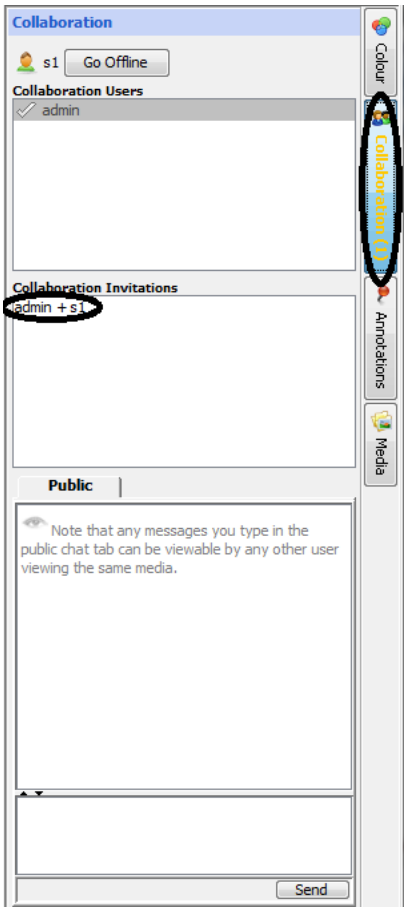
Initiating a Collaboration

To start a collaboration open the collaboration tab (explained above) and invite the users you want to join by double clicking on their names. You will be given the chance to name the session and to select a flexible or fixed hosting style. If the flexible hosting style is selected users will have the option to assume control of the session as opposed to fixed which locks the initiator as the host.

The Collaboration tab of the guest's viewer will change color indicating the request. Opening the tab they will see the invitation in the list. To join the collaboration they simply double click it.



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Passing Control and Exiting

Once the session has begun, it is possible for users to assume control of the presentation becoming the host. This is done by selecting the button "Take Control". Leaving the collaboration is done by selecting the "Disconnect" button or closing the viewer. mScope provides a chat window so you can communicate with other collaborators if you do not have a phone or VOIP.

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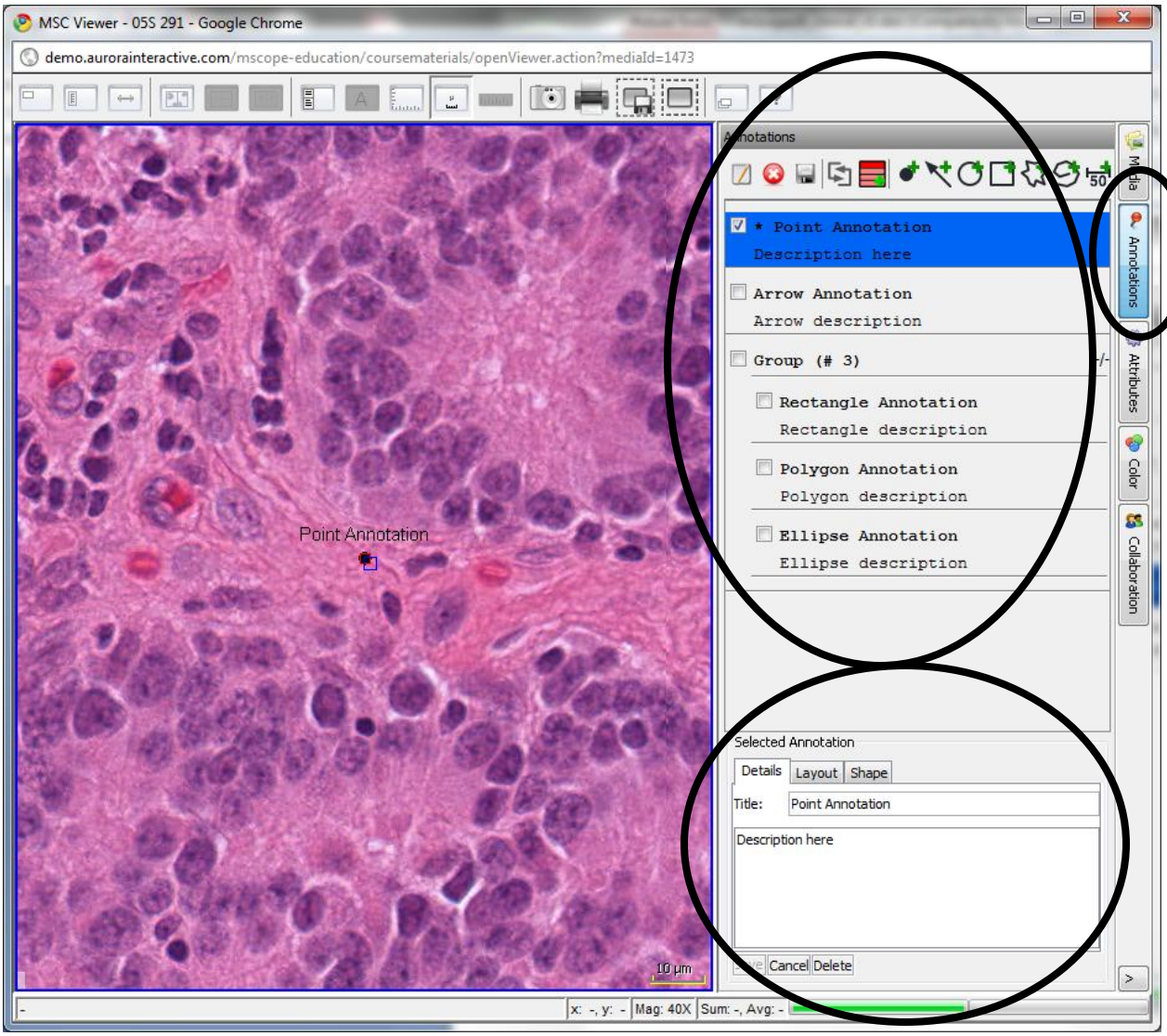
New

6.6.4. Annotation

Annotation Tab

The Annotation tab lists all annotations associated with the image and allows you to view, create, edit, and organize them depending on the user's permissions.



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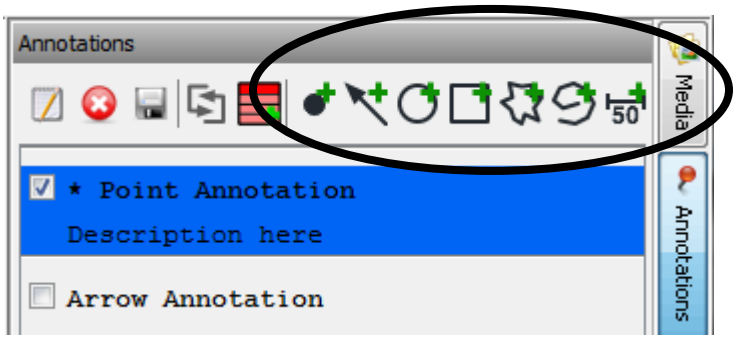
6.6.4.1. Creating an Annotation

mScope provides the following annotation types:

- Arrow
- Ellipse
- Rectangle
- Polygon
- Polyline
- Measurement



Annotation Type	Creation
Point	left click the image at the desired location and magnification
Arrow	left click the image at the desired start point and drag to the end
Ellipse	left click the image at the desired start point and drag to the end
Rectangle	left click the image at the desired start point and drag to the end
Polygon	left click the points on the image, right click to specify the last point
Polyline	left click the points on the image, right click to specify the last point
Measurement	left click the image at the desired start point and drag to the end

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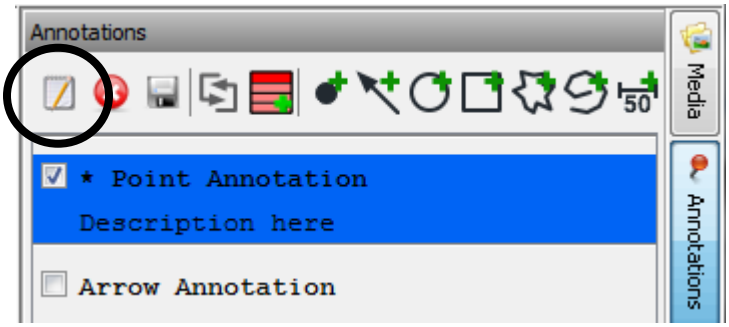
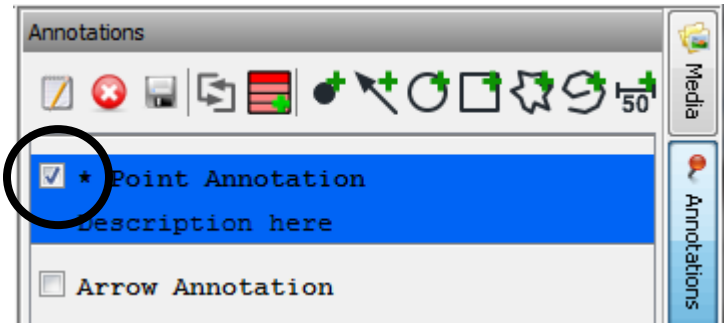
6.6.4.2. Editing Annotations

Editing Annotations is done by selecting the annotation from the list in the annotation tab and selecting edit. This will bring you to the annotation properties window described below



6.6.4.3. Viewing Annotations

Select the annotation's checkbox will to it on or off. The annotation will appear at the way it was recorded. If you select multiple annotations the viewer will choose the best fit possible.



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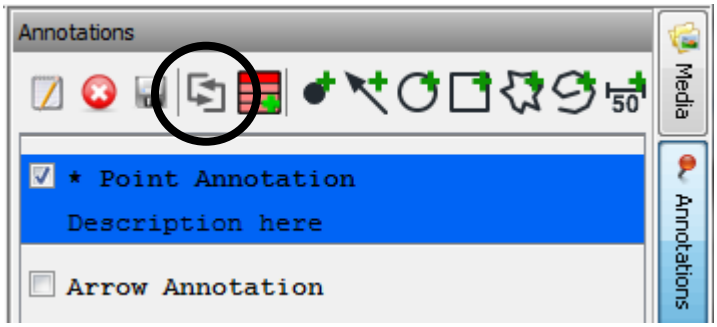
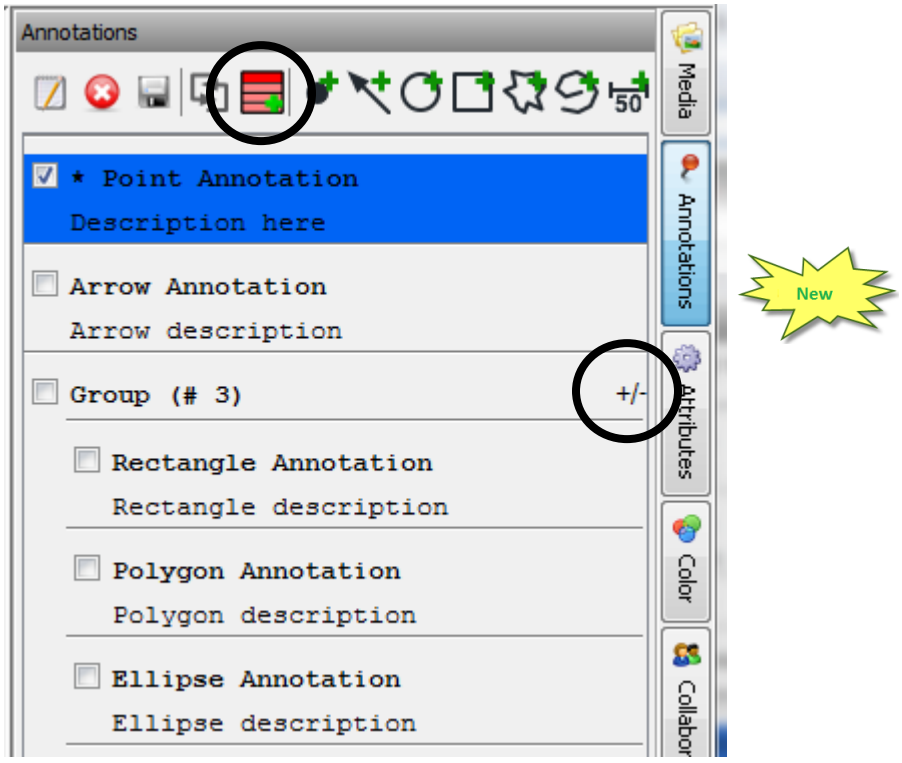
6.6.4.4. Ordering Annotations

Selecting the organize button will allow you to adjust the order of annotations by dragging them with your mouse.



6.6.4.5. Grouping Annotations

Groups allow the display of multiple annotations with a single selection. Dragging annotations into a group makes them part of it. To view the contents of a group select the "+/-" button.



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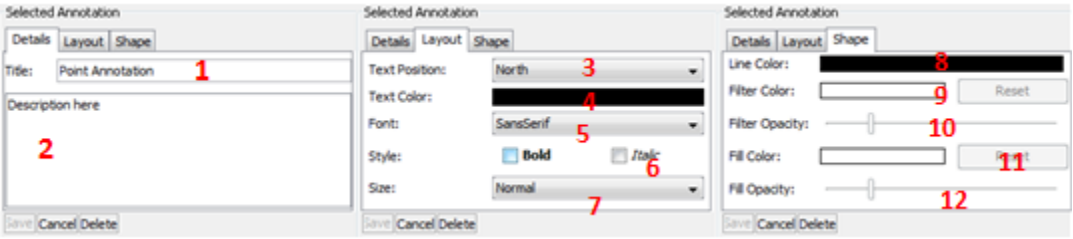
New

6.6.4.6. Annotation Properties



1. Title: the text that appears in the viewer to identify the annotation
2. Description: detailed information about the annotation that will appear when a user's cursor hovers over the annotation in the viewer
3. Text Position: controls the position of the Title (1)
4. Text Color: controls color of the Title (1)
5. Font: controls the font of the Title (1)
6. Style: controls the style of the Title (1)
7. Size: controls the display size of the Title (1)
8. Line Color: controls the line color of the arrow, circle, and square annotations
9. Filter Color: controls the color that is applied to everything outside the annotation
10. Filter Opacity: the intensity of the filter
11. Fill Color: controls the color that is applied to everything inside the annotation
12. Filter Opacity: the intensity of the fill

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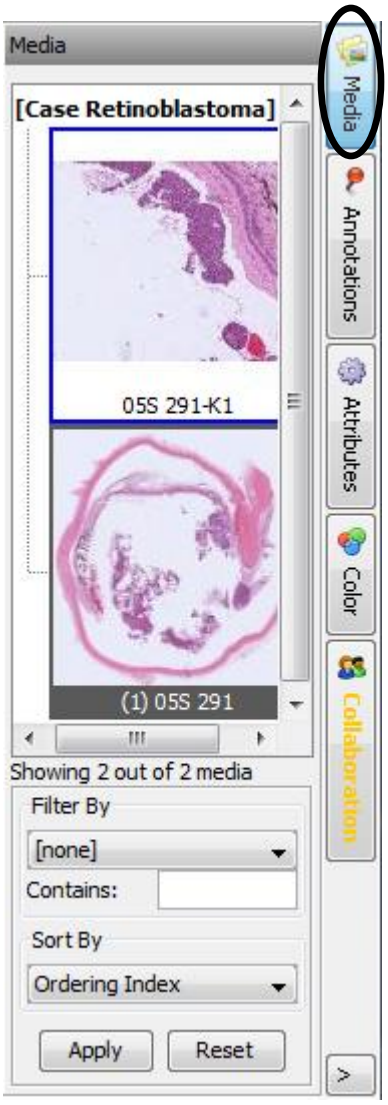
6.6.5. Media

The Media tab displays the media of the case allowing you to quickly jump to any of them without returning to the application.



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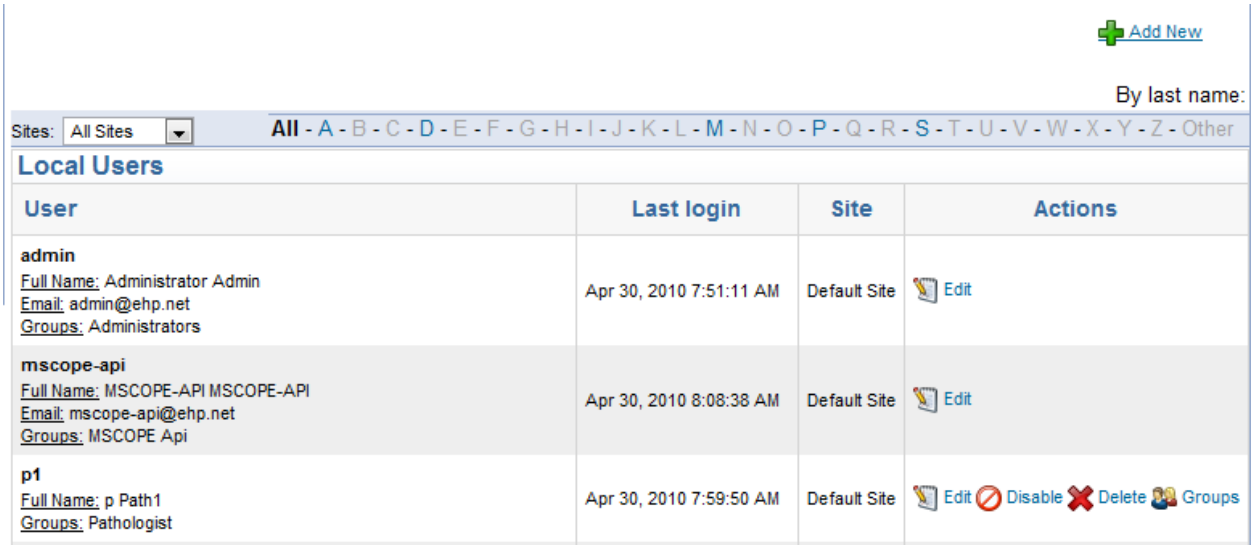
7. mScope Administration

This section describes the components of the Administration section of mScope.

7.1. Users

The "mScope Users" section of the administration module allows you to manage user accounts. You can view all users or filter them by the last name of the individual. Details include the user name, email, and groups the user is associated with (see the mScope Groups section below). The Actions column identifies the tasks that may be applied to the user.



7.2. Groups

Groups provide Access Control Logic (ACL) to users. This defines what rights a user has as well as forming the basis of user organization. For example, creating a group "HEMO101 2009" for the students enrolled in a class allows an administrator to grant them all the same level of access. In addition, it provides a simple method for sharing information with them (see sharing read/write).

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7.3. Permissions

By default, groups are created with no privileges. Adding or editing the permissions of a group is done by selecting "Permissions" under the "Actions" column of the group page.

Access Permissions

Access Administration	Gives the user access to the portal administration module
Access Library	Allows the user to enter the library, without which the library module will not appear when he/she enters the portal
Access Tests	Allows the user to enter the evaluations module, without which the module will not appear when he/she enters the portal

Library Permissions

Annotate Media from Library	Allows the user to add annotations to images within the library module
Publish Media from Library	Allows the user to make media in the library public
Unpublish Media from Library	Allows the user to make media in the library private
Remove Media from Library	Allows the user to remove media from the library
Edit Media	Allows the user to change the properties of media in the library, e.g. Reference ID
Export Media from Library to…	Allows the user to export media from the library to any location available to them **Note**: this does not duplicate the file

My Workspace Permissions

Publish Media from Private	Allows the user to make media in their My Documents public
Unpublish Media from Private	Allows the user to make media in their My Documents private
Export Media from Folder to…	Allows the user to copy media from their My Documents to any location available to them

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General Permissions

Upload Media	Allows the user to copy media from their computer to the server
Dispatch Media	Allows the user to manage media residing in "Unapproved Slides"
Regenerate Thumbnail	Allows the user to create a thumbnail for media that does not have one and replace thumbnails if they are damaged appear when he/she enters the portal
Generate Light Version of media	Creates a streamlined version of the image removing overlaps between tile for maximum efficiency
Set Copyright Ownership	Allows the user to identify who owns content
Exports from Viewer (Screenshot, Print, Barcode)	Enables capture functionality of the viewer

Atlas Permissions

Access Atlas	Allows the user to enter the atlas, without which the atlas module will not appear when he/she enters the portal
Create Case	Allows the user to add cases to the atlas
Delete All Cases	Allows the user to remove all cases from the atlas

Test Permissions

Administer Tests	Allows the user to create, schedule, and mark evaluations

Course Materials Module Permissions

Access course materials	Grants users access to the Course Materials Module
Manage course materials	Allows a user to create content in the Course Materials Module

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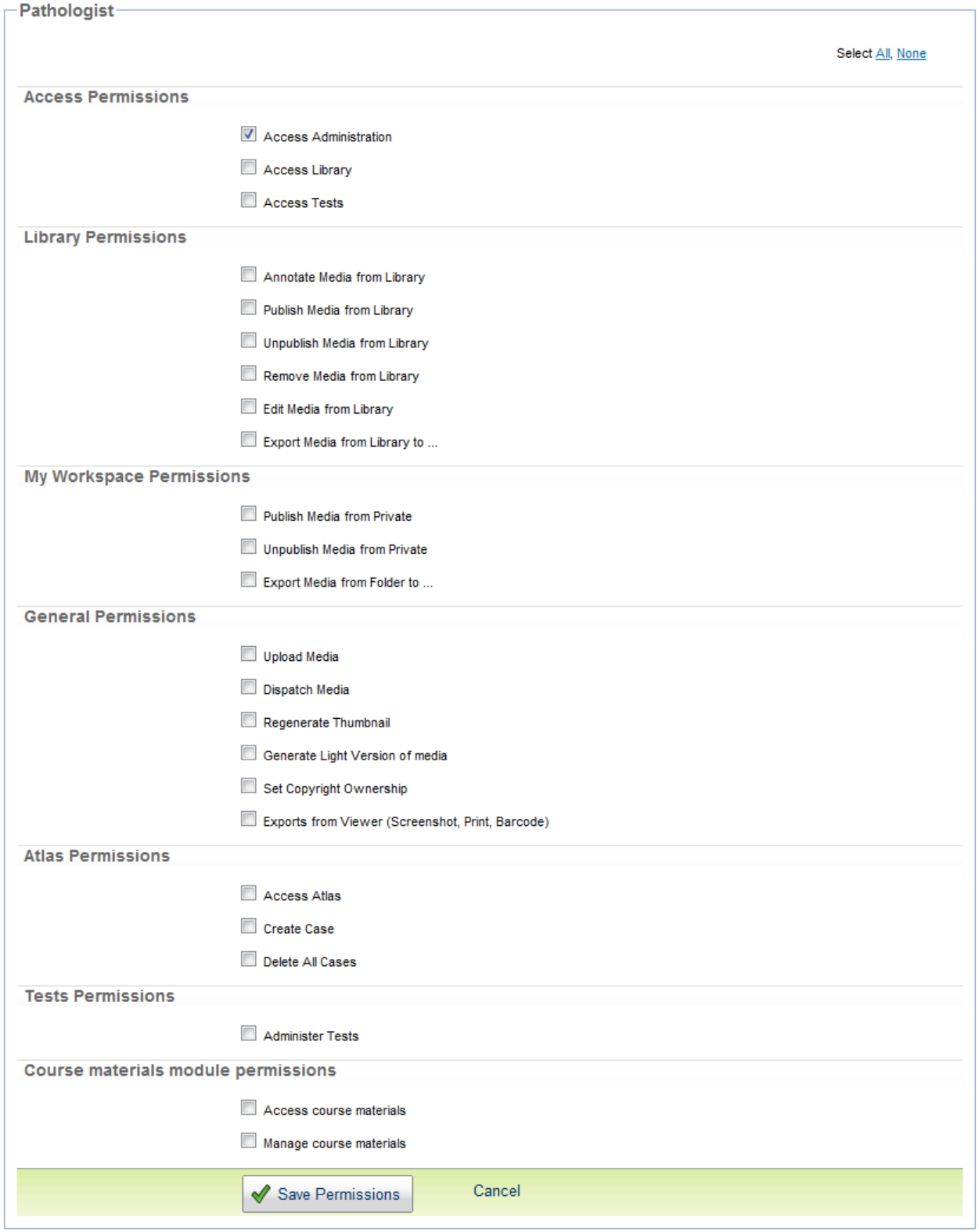

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7.4. Servers

mScope may connect to multiple media and PACS servers depending on the licensing agreement. The "Servers" section lists all defined media servers and provides an "Add Server" for connecting to additional media servers.

The media server is broken into 6 sections

- Identity
- Scanner Service
- Ingester Service
- Upload Service
- Delivery Service
- Remote Request Service

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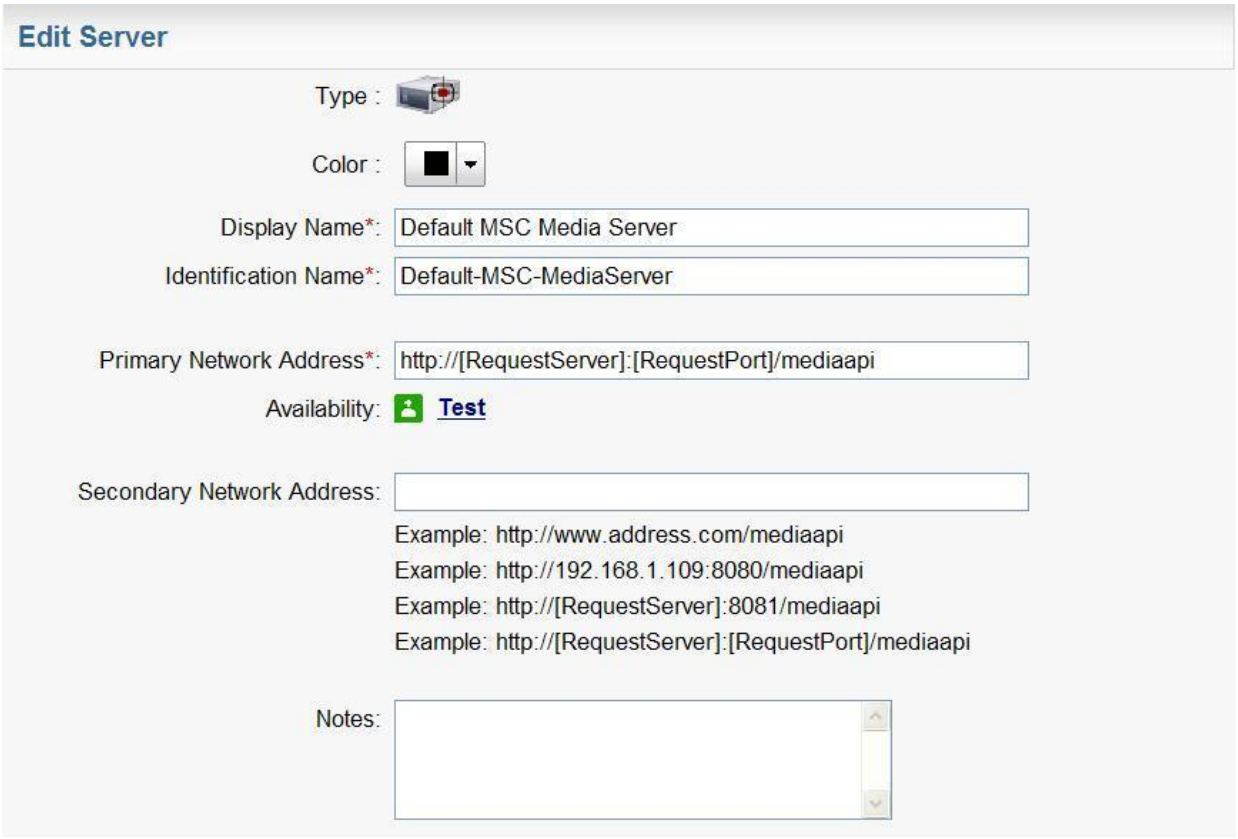
7.4.1. Identity

The identity encompasses the

- Display Name - display name in the list of media servers (must be unique)
- Identification Name - the actual name of the media server (must be unique)
- Primary Address - URL of the media server e.g. http://185.119.1.97:8081/
- Secondary Address –



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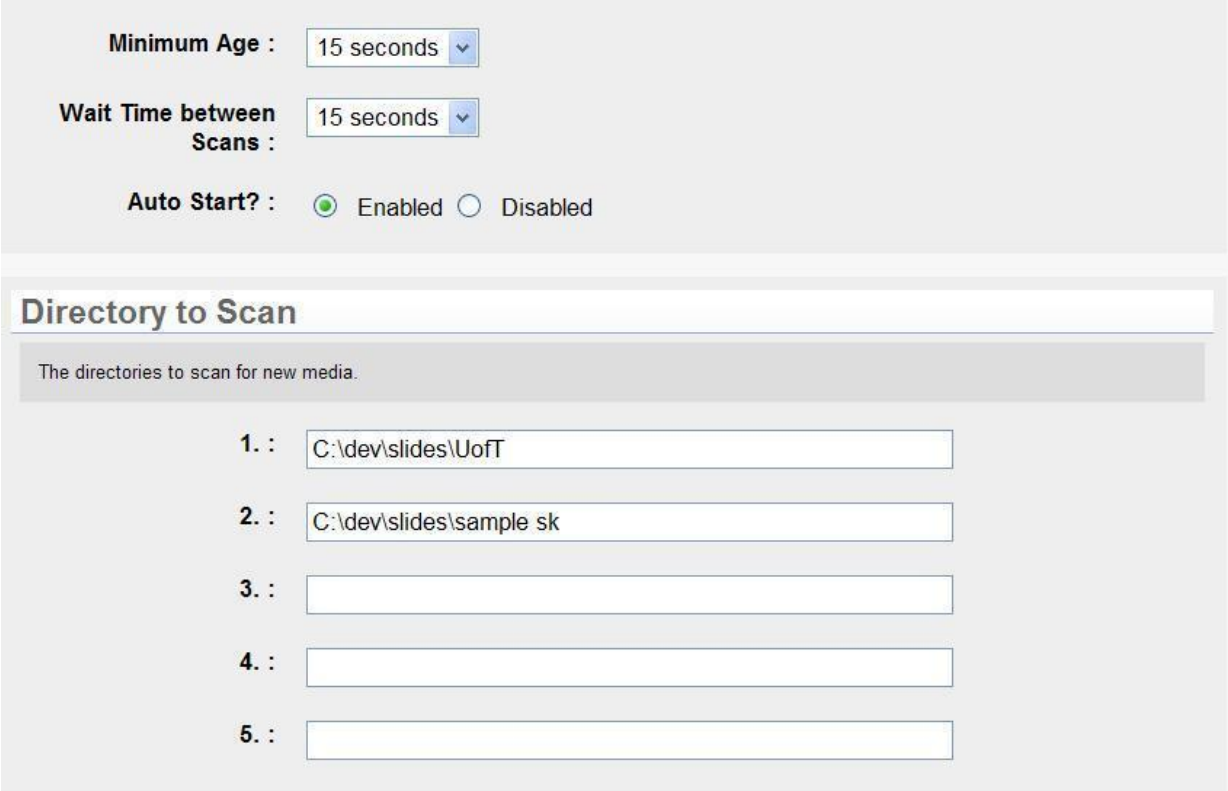
7.4.2. Scanner Service

The first section of the scanner service allows you to define the locations media will reside and configure how often they should be checked for new content. "Auto Start" is used to turn the scanner server on and off. This allows you to turn it off if you only periodically update content.



Ignore Patterns allows you to specify text strings for the scanner to ignore.

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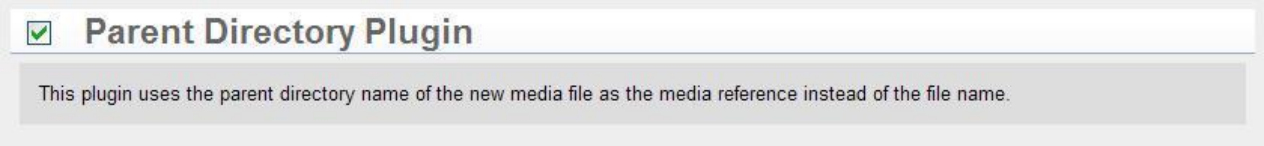
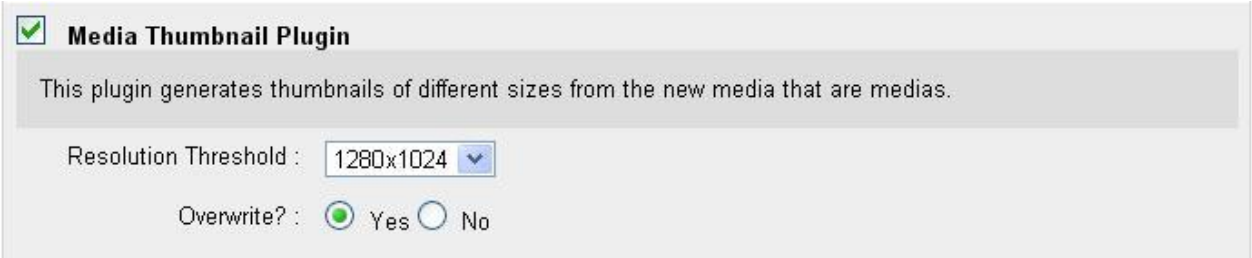
7.4.3. Parent Directory

Some formats such as those produced by Zeiss and Olympus have multiple files associated with a single image. By selecting the Parent Directory Plug-in mScope will display one image using the directory as the name. Otherwise, all files will be read individually.



7.4.4. Media Thumbnails

If selected, mScope will create thumbnails for all images that are equal to or larger than the specified resolution threshold. If "Overwrite" is set to yes thumbnails will be created every time the scanner searches the folders.



7.4.5. Video Thumbnails

This option creates thumbnails for video content. If "Overwrite" is set to yes thumbnails will be created every time the scanner searches the folders.

7.4.6. JPEG Splitter

Though compressed, JPEG images can still be quite large so rather than download them completely mScope provides the option to split them into tiles to make them more efficient for web viewing. The

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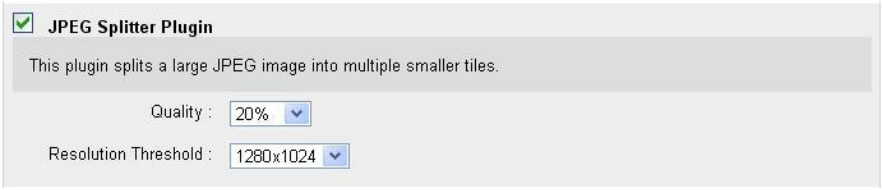
Quality setting allows you to reduce the size even further and the Resolution Threshold determines the size an image must be before it is split.

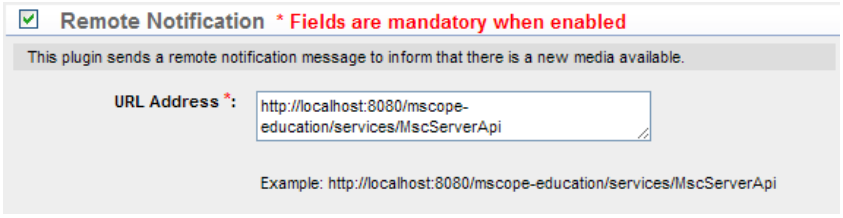


7.4.7. Light Viewer

The Light Viewer plug-in has been created to assist viewing by creating layers (magnifications) that are not available in the file or improve performance by removing overlapping of tiles from a file. It is currently only available for Zeiss slides. When selected, mScope will use the lowest layer or highest magnification to generate the required sub layers. The new layers are created with non-overlapping tiles providing maximum performance when viewing.

7.4.8. Remote Notification

Remote Notification allows the ingester to reside on a server other than that of the media server by providing the ingester with the location to send information.



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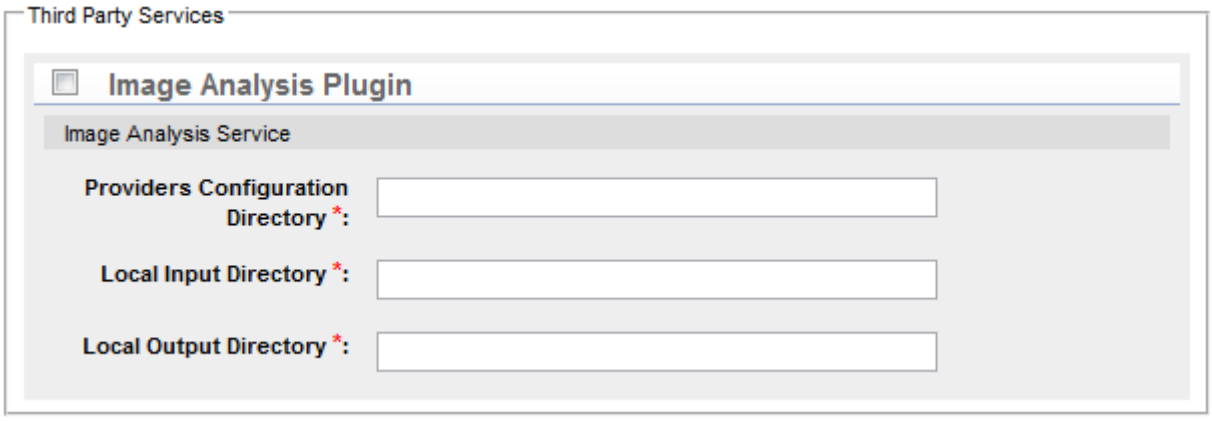
7.4.9. Image Analysis Plugin

mScope allows you to integrate with image analysis software.

Providers Configuration File	Location of where you save the provider xml files e.g./media/analysis
Local Input Directory	Location on the Media Server where images will be stored before being analyzed. e.g. /media/analysis/input
Local Output Directory	The directory on the Media Server where analysis results are stored. e.g. /media/analysis/output



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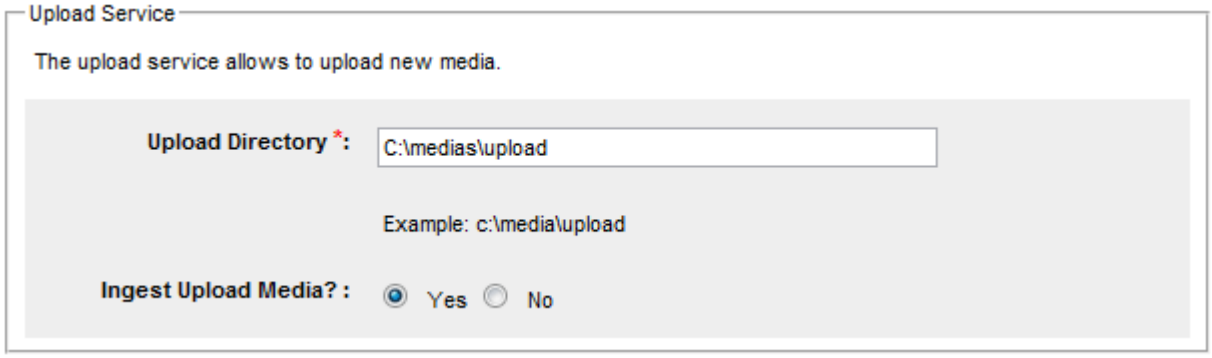
7.4.10. Upload Service

mScope offers users an upload option so they can add media from their computer to the portal.

Upload Directory defines where uploaded media will be stored on the server.

Upload Url is the web address of the Upload directory.

Ingest Upload Media specifies whether uploaded media will be added to the portal. If it is set to "No" media will be copied to the location but will not be visible to the user.



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7.4.11. DICOM Proxy Protocol

This protocol allows the media server to serve images stored in a PACS Server.

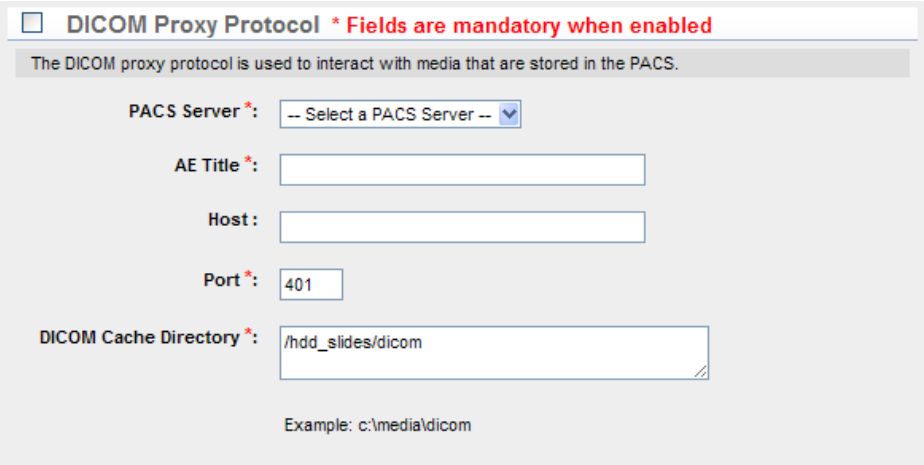
PACS Server is a list of all PACS Servers available to the media server. You may only have one PACS Server defined for a media server.

AE Title is the AE Title of the selected PACS Server and may be retrieved by viewing the details of the PACS Server.

Host is the IP of the PACS Server and may be retrieved by viewing the details of the PACS Server.

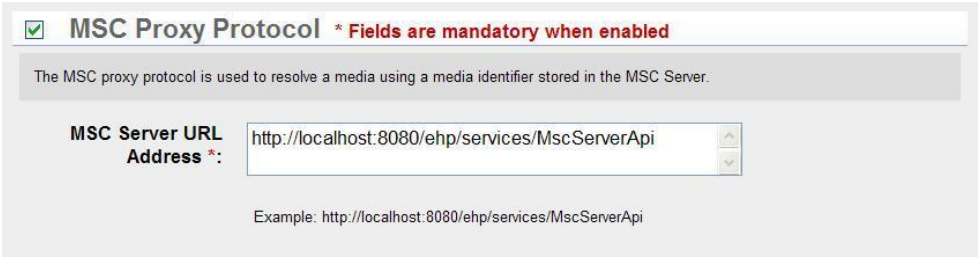
Port is the port the media server will use to communicate with the PACS Server.

DICOM Cache Directory is the location where the media server stores cached thumbnails and images to avoid making unnecessary calls to the PACS server.



7.4.12. MSC Proxy

The MSC Proxy allows the media server to locate and serve media through the unique identified associated with it in the media database. An example for UofAurora would be http://UofAurora:8080/ehp/services/MscServerApi.



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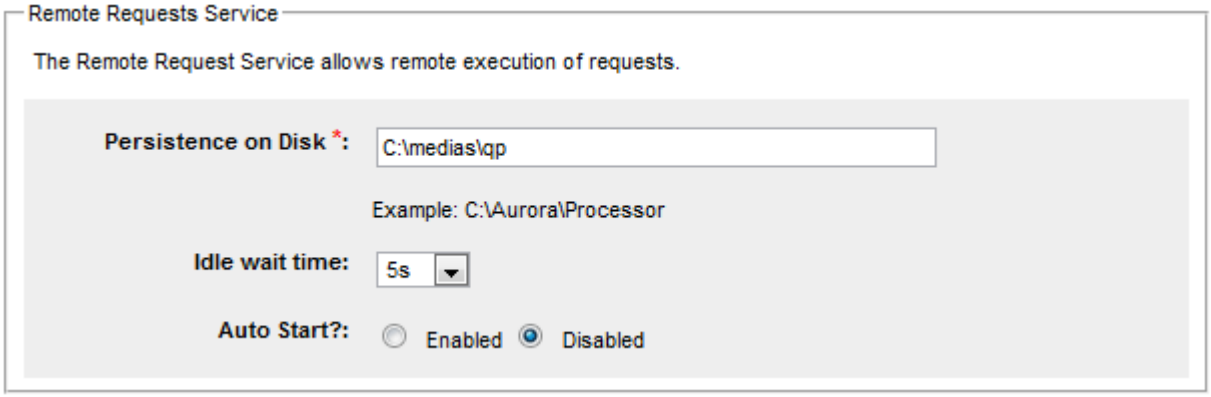
7.4.13. Local Proxy

The local proxy uses the filename to serve images.

7.4.14. Remote Queue

The Remote Queue is a service that allows for asynchronous execution of tasks. There are two tasks currently available (thumbnail regeneration and light image versions). Additional services can be implemented at integration time by the integrator.



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7.5. Licenses

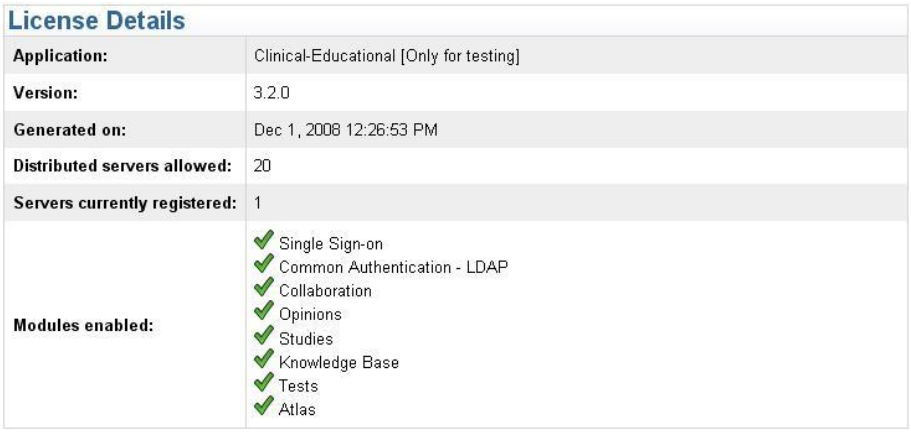
The license section provides details about the rights granted with the license available. This includes:

Distributed servers allowed the number of media servers that may be included in the portal.

Servers currently registered the number of media server currently included in the portal.

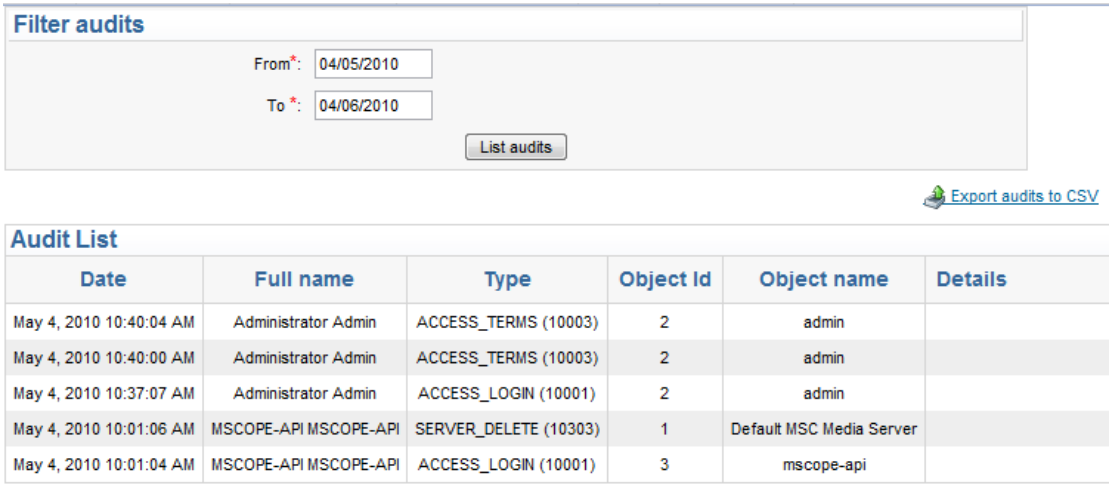
Modules enabled which modules you have available.

There is also a link to upload a new license on the top right of the page.



7.6. Audits

All actions in mScope are recorded. “Audits” allows you to generate a list of actions performed. The results may be exported to a CSV file which can be used by applications like EXCEL to measure user activity.



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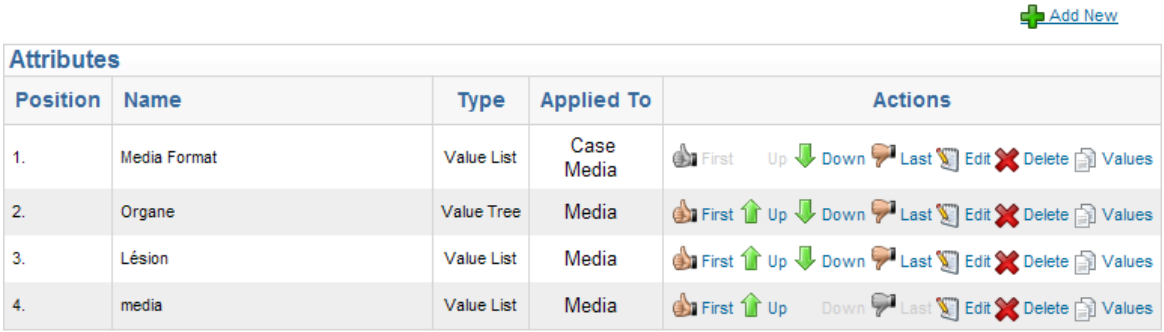
7.7. Attributes

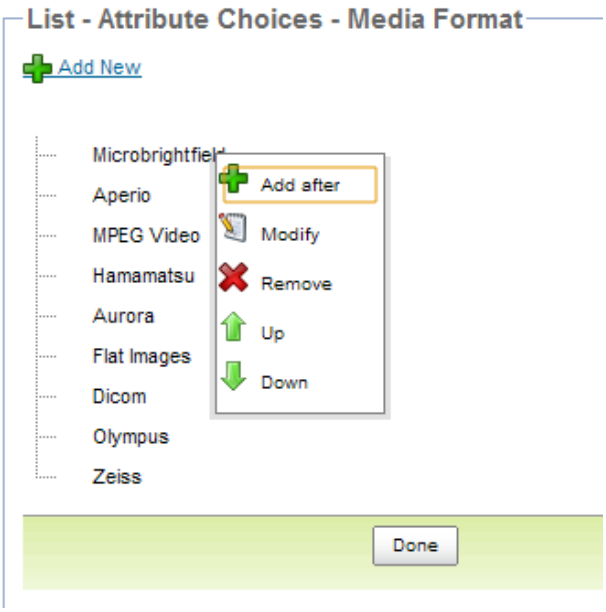
mScope provides user-defined Attributes that may be added to Projects, Cases, and Images. Each type of Object (Project, Case or Media) can have its own group of attributes. It is also possible to define the attribute as mandatory. In this case, the user will need to provide a value for it and not be able to ignore the attribute.

Attributes may be one of the following

- Text
- Value List
- Value Tree (tree branches/plus levels)



Value Lists are created by entering a name in the "Value" field and "Position". The order of the list is configurable through the "Order" column.



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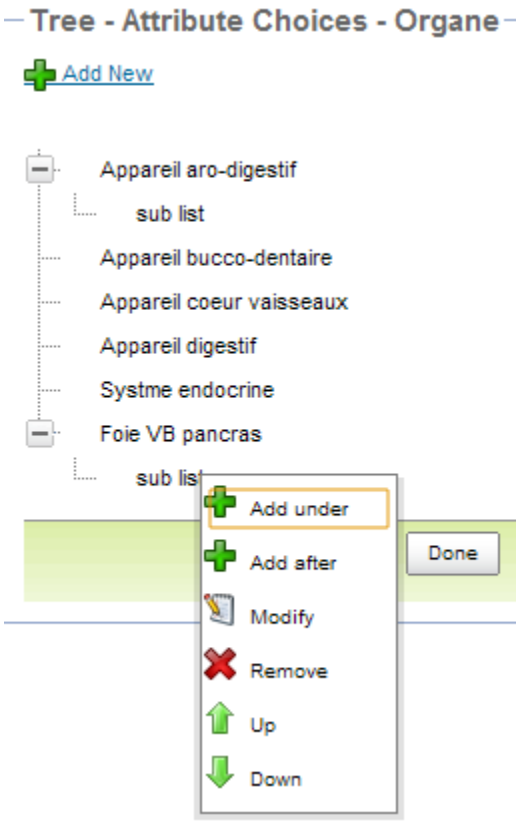
Value Trees behave similarly to Value Lists with the addition of depth. This is facilitated by "Indenting" the entry.



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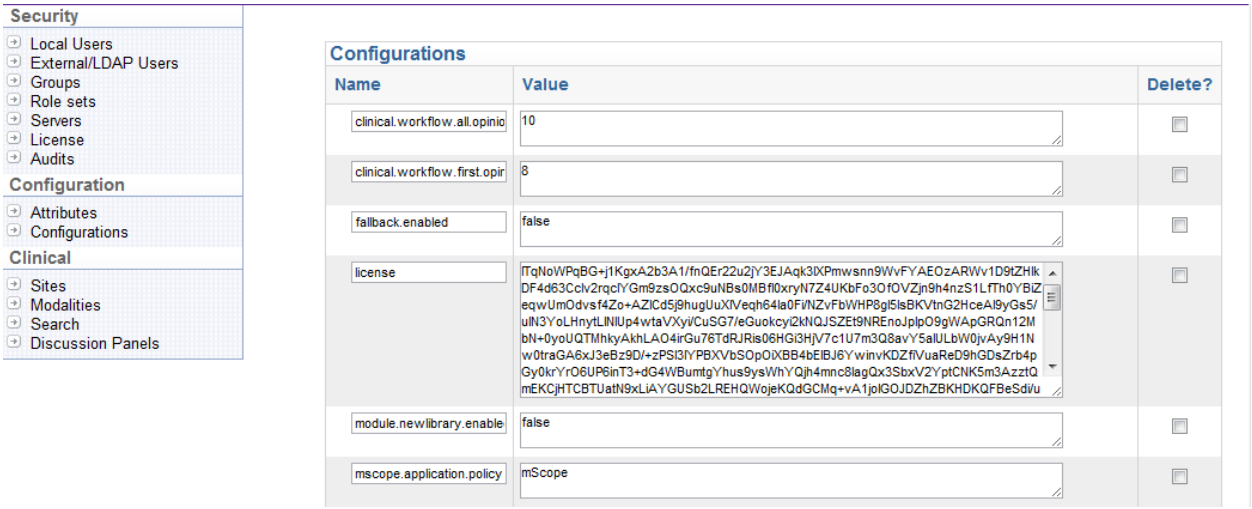
New

7.8. Configurations

nfiguration allows you to set the text displayed in the application. Each field represents a “label” in the mScope dictionary.



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