Using ImageJ with OMERO 4.4

This covers and version 4.4.x and the initial section assumes you have never installed ImageJ or Fiji before.

For OMERO versions 5.1.x and 5.0.x see the Using ImageJ with OMERO 5.1 web page (http://help.openmicroscopy.org/imagej.html).

You can tell what version your OMERO is from the fine print at the bottom of the login screen.

Upgrading from OMERO version 4.4.x to OMERO version 5.1.x is dealt with in a later section.

In order to connect to an OMERO server and use the data stored there directly in ImageJ and Fiji, plugins have to be installed. The following instructions guide you through the download and installation and use of ImageJ, Fiji and the plugins.

Downloading and installing ImageJ

1   Download the latest version of ImageJ for your platform from the website:

http://rsbweb.nih.gov/ij/download.html

2   On Windows, run the set-up programme (either from the Downloads folder or when prompted by the download Wizard) and follow instructions, and security prompts as appropriate, to install ImageJ.
On Mac OS X, extract the .zip archive and drag the ImageJ folder to your applications folder.
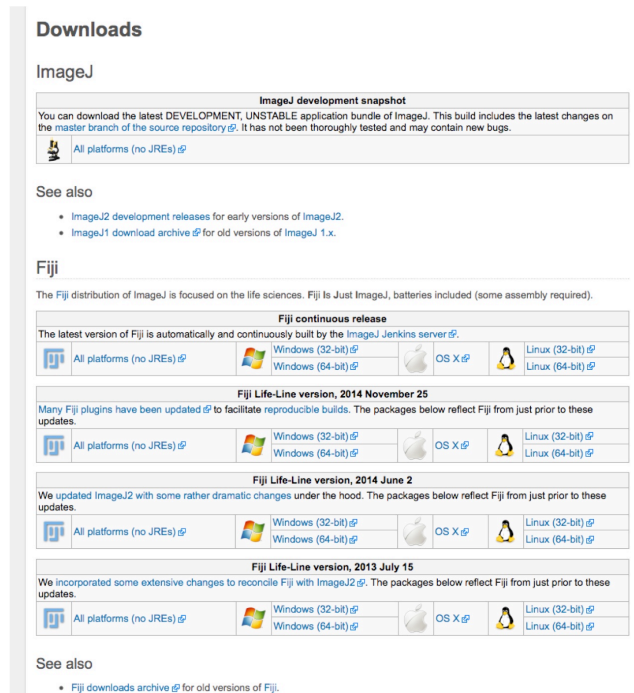On Linux, extract the .gz archive and double click the "run" script.
Further installation instructions can be found on the ImageJ web site (URL above).

Downloading and Installing Fiji

Fiji (Fiji is Just ImageJ) is a distribution of ImageJ together with Java, Java3D and a lot of plugins organized into a coherent menu structure.

1   Download the latest version of Fiji for your platform from the website:

http://fiji.sc/Downloads

2   The Fiji downloads page includes installation instructions.
On Windows it is recommended you install the Fiji executable within your user space for example: `C:\Users\[your name]\Fiji.app`, not in the normal `C:\Programs` directory, otherwise future updating may fail.
On Mac OS X, mount the .dmg and drag the Fiji folder to your applications folder.
On Linux extract the .gz archive and double click the "run" script.

3   On Windows, depending on how the downloaded archive was expanded, the ImageJ executable can appear one level deeper in the Fiji.app folder than in ImageJ.
On Mac OS X, Fiji.app appears as a single .app.
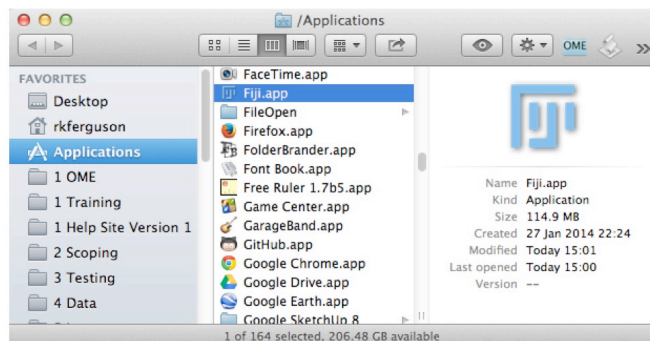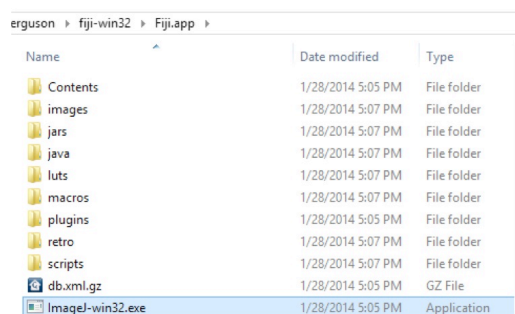
Installing Plugins for ImageJ and Fiji

The location for the plugins in ImageJ and Fiji are essentially the same, with the following differences in gaining access to them:
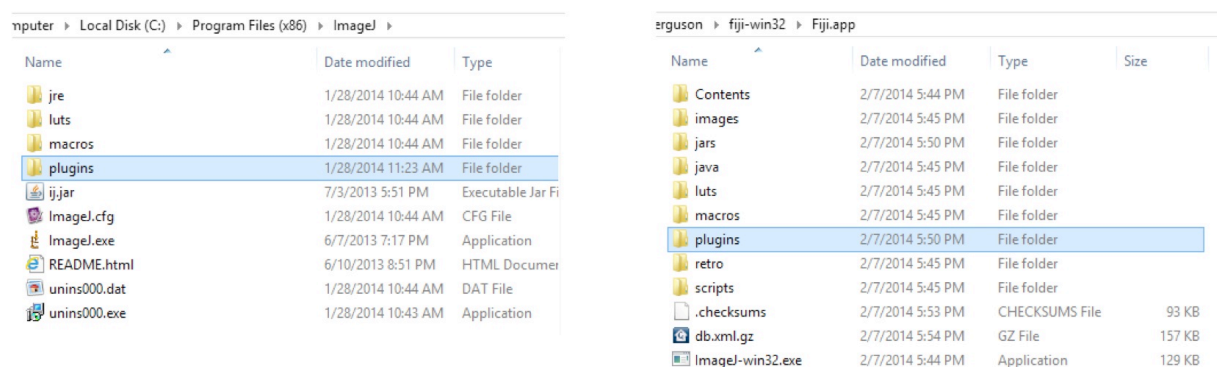
- on Windows, Fiji sometimes has an additional level of hierarchy, depending on how the downloaded archive was expanded, for example:
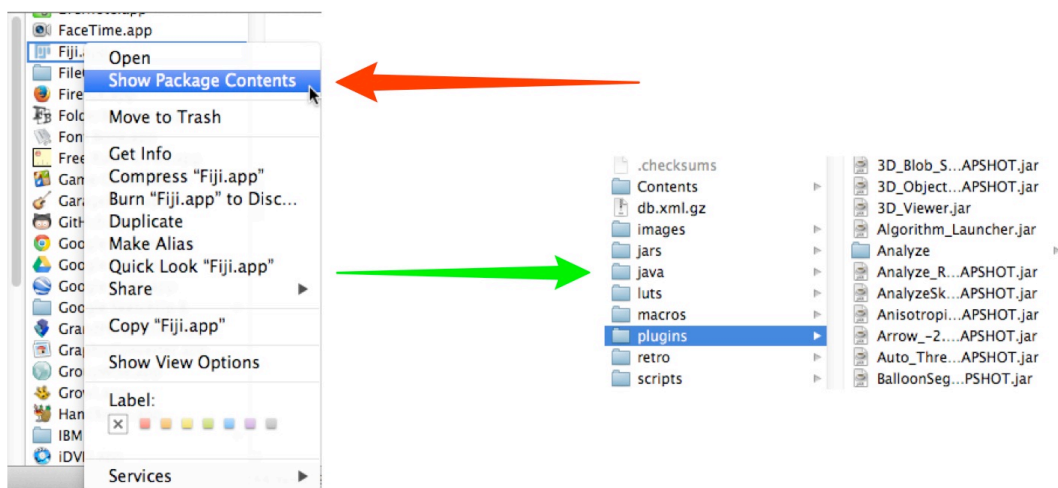
  ImageJ - Windows (32 bit):
  `Local Disk (C:) > Program Files (x86) > ImageJ > plugins`

  Fiji - Windows (32 bit):
  `Local Disk (C:) > username > Fiji-win32  > Fiji.app > plugins`

- on Mac OS X, Fiji is an .app package, so to see the plugins folder you must right-click the Fiji.app and select **Show Package Contents**:

Note: After installing or upgrading plugins, you need to restart ImageJ or Fiji to be able to use the plugins.

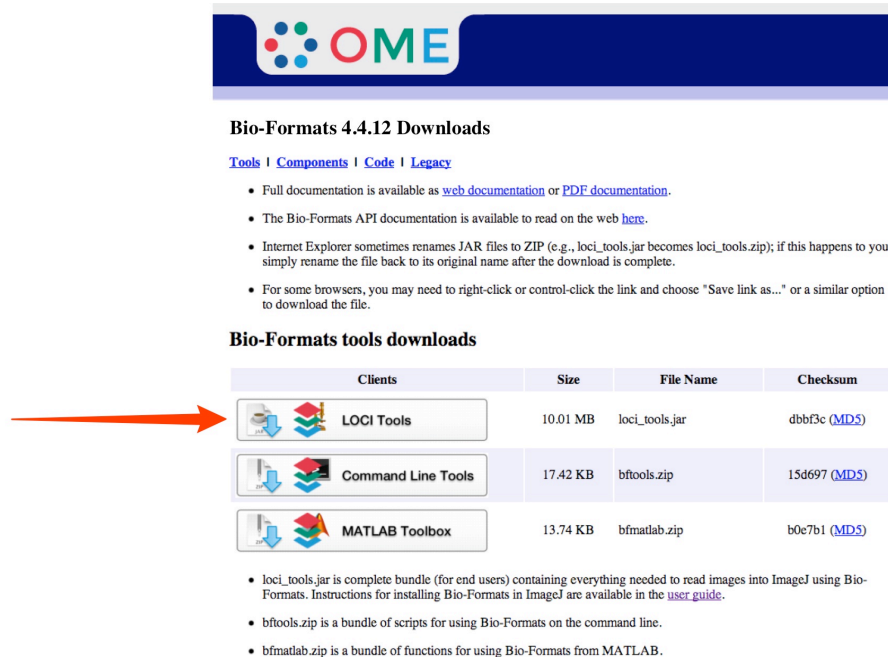### Using ImageJ with OMERO version 4.4.x

Two plugins are required:

- `loci_tools.jar`
- `OMERO.insight-ij`

1   Download the latest 4.4.x version of the **LOCI Tools** plugin from:

http://downloads.openmicroscopy.org/latest/bio-formats4

Check there is a "Bio-Formats 4.4.x Downloads" heading on the page.

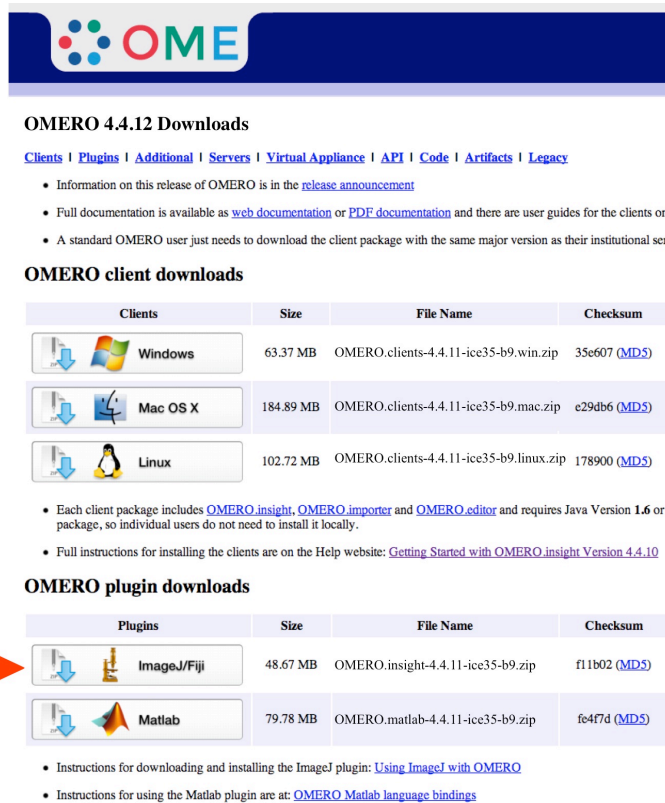**2**   Save or move the downloaded file into the `ImageJ > plugins` folder.

3 Download the latest 4.4.x version of the `OMERO.insight-ij` plugin from:

http://downloads.openmicroscopy.org/latest/omero4

Check there is a "OMERO 4.4.x Downloads" heading on the page.

4 Save or move the .zip archive to the `ImageJ > plugins` folder.
Extract the archive into the plugins folder to give a folder named "`OMERO.insight-ij-x`" where x is the version number.
Leave the complete `OMERO.insight-ij` plugin folder with its components in the `ImageJ > plugins` folder.

Note: Some Windows unzip apps create a double folder enclosing the plugin. Check, and if this has happened, copy the inner `OMERO.insight-ij-4.4.x` folder into the `ImageJ > plugins` folder.

The `OMERO.insight-ij-4.4.x.zip` archive can be left in the plugins folder or deleted.

Using Fiji with OMERO 4.4.x

Fiji changed the way it bundles and updates the plugins and jars needed to work with OMERO version 4.4.x in April 2014. Versions of Fiji since require the following steps to work with OMERO version 4.4.x.

Two plugins are required:

- `loci_tools.jar`
- `OMERO.insight-ij`

and incompatible Bio-Formats and SCIFIO plugins and jars need to be deleted.

1 Using a new or existing Fiji app download, start the app and allow it to go through and complete the update procedure, or from the menu select **Help > Update Fiji**.
In the **ImageJ Updater** window, click **Manage update sites**.
Highlight the **Bio-Formats** entry in the list.
Click **Remove**, and then **Close**.
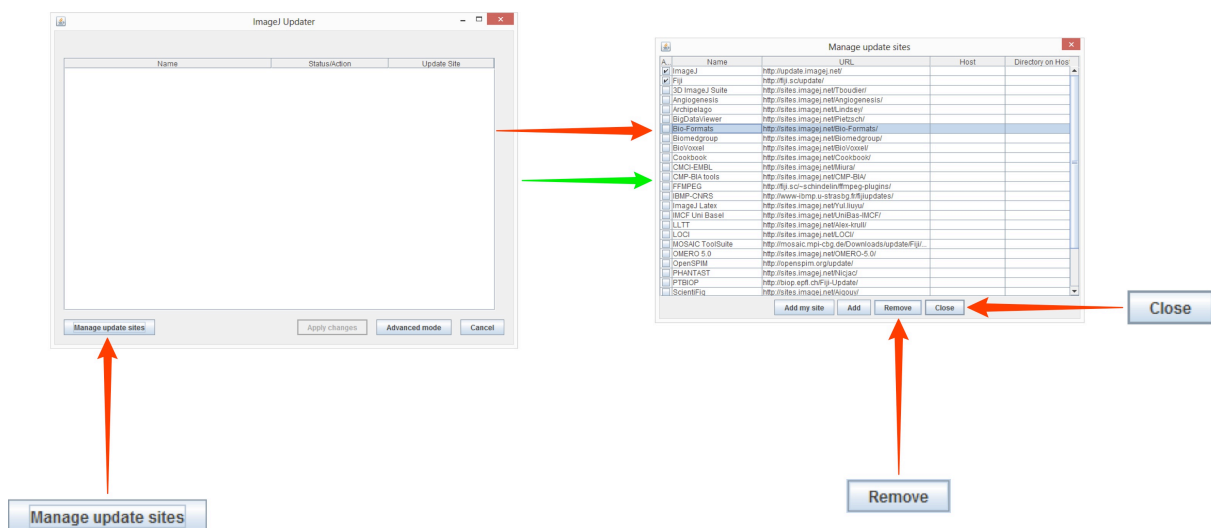
2   Quit Fiji.

Go to the `Fiji app > plugins` folder on your hard drive and delete `bio-formats_plugins.jar`

In the `Fiji app > jars` folder, select and delete the five jars with the prefix `scifio-`.
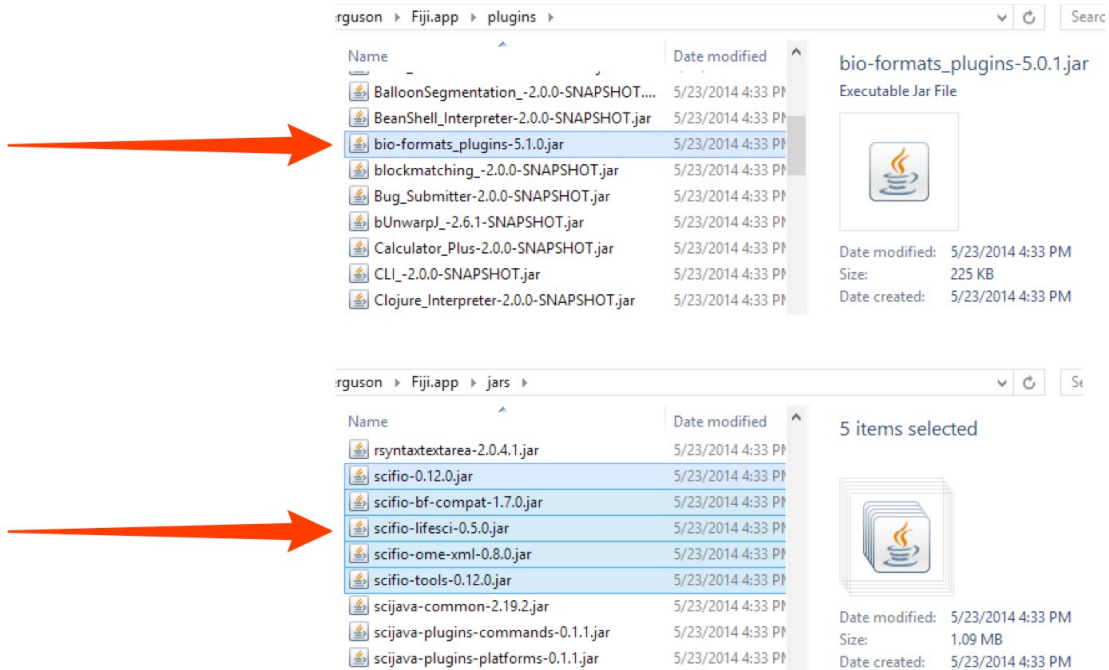
3   Download and install the latest 4.4.x version of the `OMERO.insight-ij` plugin and `loci_tools.jar` as described in **Using ImageJ 4.4.x** above.

Subsequent automatic Fiji updates should not affect these installations.

Accessing OMERO using ImageJ and Fiji

1   Launch the ImageJ application and click on the **Plugins** menu.
Select **OMERO > Connect to OMERO**.
A version of OMERO.insight will open and can be used as normal.
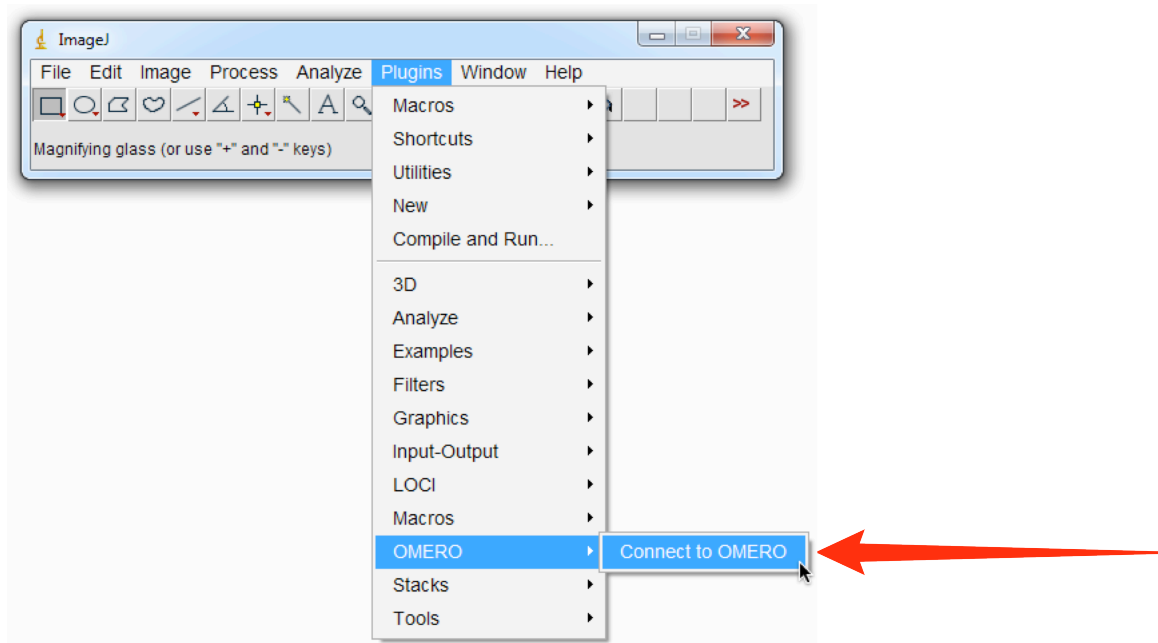
2   As ImageJ needs to load the plugin software, it can take a minute or two for the
OMERO login screen to appear, and then another two or three minutes for the
progress bar to start moving and complete.
Enter your OMERO server address (if needed) and **Username** and **Password**.
Click **Login**.
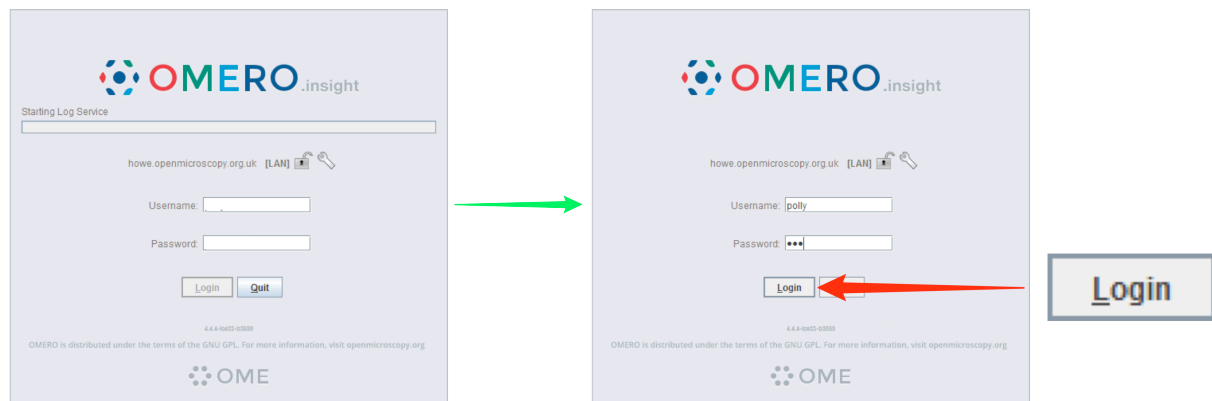
3   You will then be taken to the OMERO.insight Data Manager screen.
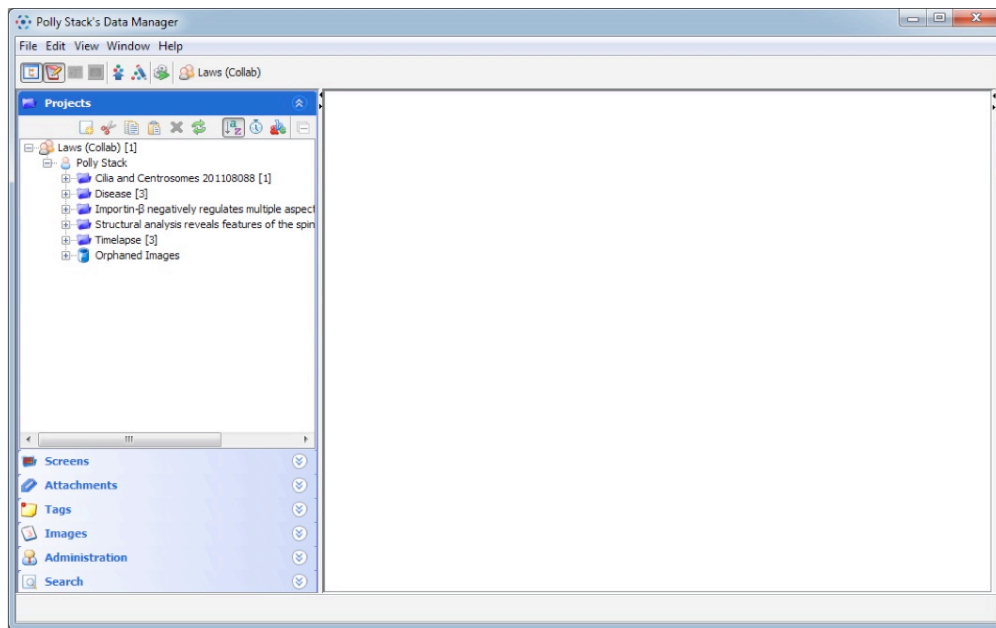
Note: If you quit OMERO.insight and then connect again during the same ImageJ session, logging in and launching the OMERO plugin will be much quicker. So if you intend using the OMERO plugin through ImageJ again soon, it may be worth leaving your ImageJ application running.

4   Double click on the image in the data tree or selecting the image and **View > View in ImageJ** in the contextual menu.
The Bioformats Import Options window opens.
Select parameters and click **OK**.
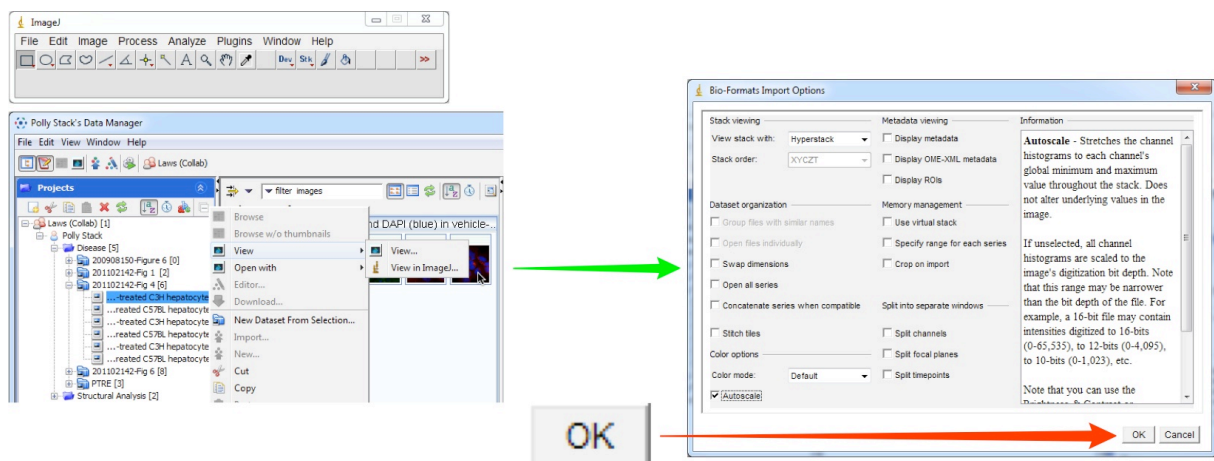
Upgrading ImageJ from 4.4.x to 5.1.x

To upgrade ImageJ for use with an OMERO version 5 server, you need to:

1   Go to the `ImageJ > plugins` folder.
Delete the `loci_tools.jar` and the `OMERO.insight-ij-4.4.x` folder.
Download the latest 5.1.x version of the Bioformats Package plugin from:

http://downloads.openmicroscopy.org/latest/bio-formats5

Check there is a "Bio-Formats 5.1.x Downloads" heading on the page.
Save or move the downloaded file into the `ImageJ > plugins` folder.

2   Download the latest 5.1.x version of the `OMERO.insight-ij` plugin from:

http://downloads.openmicroscopy.org/latest/omero5

Check there is a "OMERO 5.1.x Downloads" heading on the page.
Save or move the downloaded file into the `ImageJ > plugins` folder.

Note: The `bioformats_package.jar` you need, to use ImageJ with OMERO version 5.1.x, is incompatible with `loci_tools.jar`, and ImageJ will not work with OMERO if both are in the plugins folder.

We suggest that if you wish to access both 4.4.x and 5.1.x versions of OMERO from ImageJ that you run two appropriately named copies of ImageJ each with the appropriate plugins for the version.

For more information on using ImageJ with OMERO versions 5.1.x and 5.0.x see:

Using ImageJ with OMERO (http://help.openmicroscopy.org/imagej.html).