Fig 9.35 The *Horos* contextual menu with *Preferences* highlighted (a), and the *Locations* option in the *Preferences* window (b).

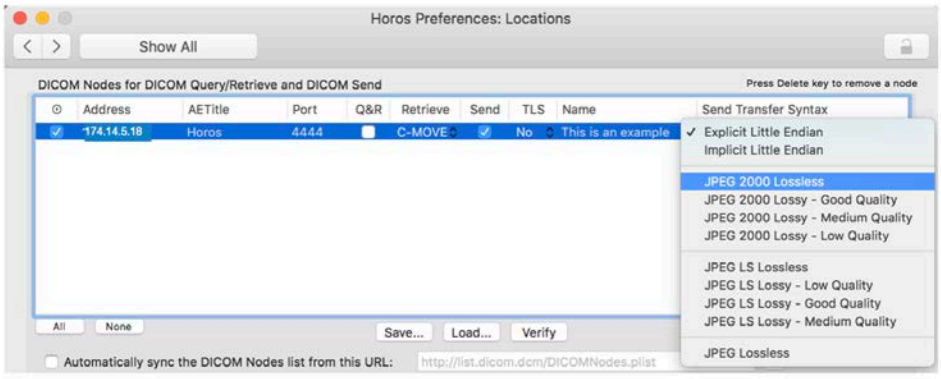

Figure 9.36 Locations Preferences showing the Send Transfer Syntax drop down menu

Horos workstations

To enable JPEG2000 transfer you will need to activate JPEG2000 syntax on each Horos workstation. To do this follow the same instructions as the previous paragraph.

More information on this can be found in Chapter 2.

Automatic image decompression

To activate automatic image decompression for incoming files go to the *Horos* contextual menu and select *Preferences* (Fig 9.37a). This will bring up the *Preferences* menu window, here you select the *Listener* icon (Fig 9.37b). In *Horos Preferences: Listener* select *Decompress*

compressed files in the *Incoming files* section (Fig 9.38). Activating this feature allows the best performance by only decompressing the images when they are displayed.

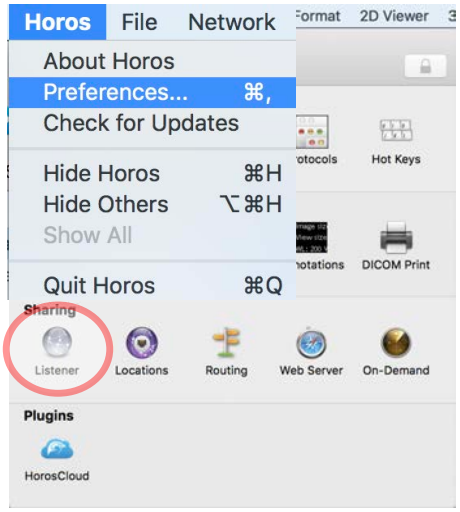

Fig 9.37 The Horos contextual menu with Preferences highlighted (a), and the Listener option in the Preferences window (b)

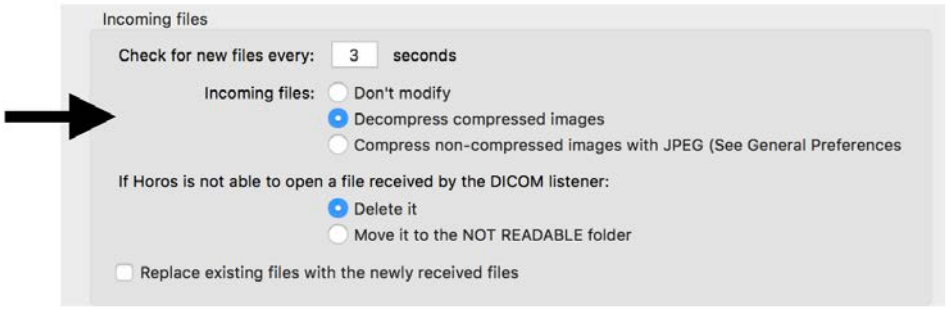

Fig 9.38 The *Horos Preferences: Listener* window. Decompress compressed files is found in the *Incoming Files* section

Conclusion

On demand image compression/decompression can be a slow process, particularly when viewing images on processors which are quad core or less. It is for this reason that Horos offers the option to build a JPEG2000 Network.

To configure JPEG2000 compression go to the *Horos* contextual menu and select *Preferences* (Fig 9.39a). This will bring up the *Preferences* menu window, here you select the *General* icon (Fig 9.39b). In the *General Preferences* window, JPEG2000 Image compression levels can adjusted by clicking on C*onfigure* (Fig 9.38). In the window which appears, image compression levels can be adjusted for each modality (Fig 9.40).

You need to ensure that your whole network, including the DICOM network protocol is 100% JPEG2000 configured, including your PACS server and workstations. If this is not the case you will suffer from slow network transfers. Images stored as JPEG2000 on the PACS will need to be decompressed for file transfers, all of which slows the process. The default position is Loss less/lossy.

It is important to store images in a consistent compression format across the whole PACS network. For example store all images as JPEG2000 rather than a mixture of JPEG and JPEG2000. If images are stored as a mixture off compression types this can cause issues with workstations trying find shared transfer syntax to exchange images and can result in blocked file exchanges.

For PET or small MR matrices which are small matrix images, only use lossless compression settings.

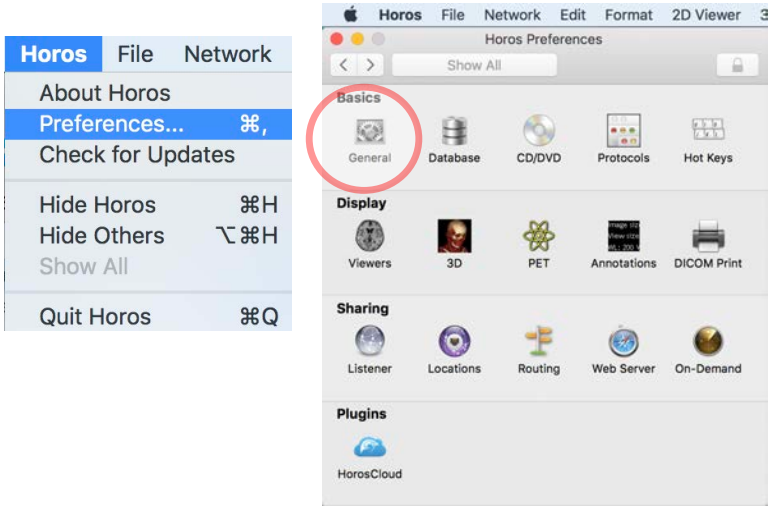

Fig 9.39 The *Horos* contextual menu with *Preferences* highlighted (a), and the *General* option in the *Preferences* window (b)

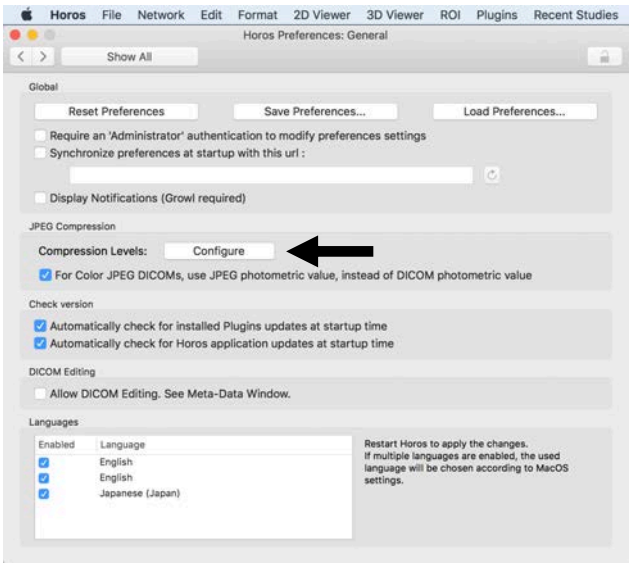

Figure 9.40 The *Horos Preferences: General* window. JPEG2000 Image compression levels can adjusted by clicking on C*onfigure* (arrow)

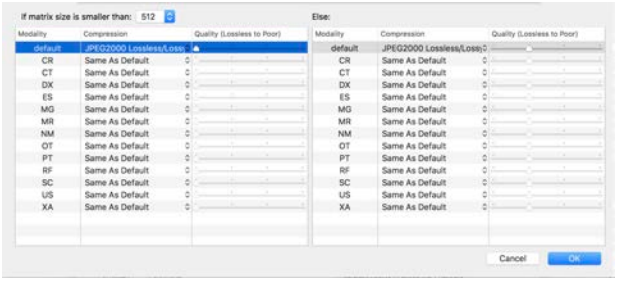

Figure 9.41 JPEG2000 Image compression levels can be adjusted here

If you encounter issues with image transfers or blocked file exchanges you can check your computer's settings to determine if you have *normal* performance. Go to /Applications/Utilities and select Console APP). If you are receiving error messages regarding compression/decompression, your transfer syntaxes are probably incorrect i.e. not all DICOM nodes are set to transfer/receive JPEG2000 files. It is important for the PACS server and Horos to be able to communicate without compressing/decompressing data.

In conclusion using a JPEG 2000 Network allows you to:

- Store 3 times more files on your server
- Have greater simultaneous client access to your server as files can be read three times faster
- Files can be transferred three times faster from the PACS server to the workstations.

Appendix A

Default Hot Keys

Tool/Function	*Default Key*
1st WL/WW preset	*1*
2nd WL/WW preset	*2*
3D Point Tool	*P*
3D Rotate Tool	*[*
3rd WL/WW preset	*3*
4th WL/WW preset	*4*
5th WL/WW preset	*5*
6th WL/WW preset	*6*
7th WL/WW preset	*7*
8th WL/WW preset	*8*
9th WL/WW preset	*9*
Arrow Tool	*Q*
Bone Removal Tool	*X*
Brush Tool	*B*
Camera Tool	*]*
Closed Polygon Tool	*C*
Default WL/WW	*~*
Flip Horizontal	*H*
Flip Vertical	*V*
Full Dynamic WL/WW	*0*
Mark Status as Dictated	\
Mark Status as Empty	,
Mark Status as Reviewed	/
Mark Status as Unread	.
Mark Status as Validated	*Y*
Measure Angle Tool	*A*
Measure Length Tool	*L*
Move Tool	*M*
Open Polygon Tool	*O*
Ortho MPR Cross Tool	*None*
Oval ROI Tool	*E*
Pencil Tool	*D*
Rectangle ROI Tool	*None*
Repulsor Tool	*R*
Rotate Tool	*I*
Scissors Tool	*None*
Scroll Tool	*None*
Selector Tool	*S*
Text Tool	*T*
WL/WW Tool	*W*
Zoom Tool	*Z*

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