

# Open Seadragon

## Overview

SeaDragon is a zoomable viewer available for Book/Newspaper Pages and Large Images. The viewer supports a custom Djatoka tilesource and a IIIF tilesource, based in spirit from the JS component of Kevin Clarke's [FreeLib-Djatoka](#). Instead of "synthesizing" the info for DZI this module creates the path to access Djatoka directly and obtain different regions for the tiles.

## Dependencies

- [Islandora](#)
- [Tuque](#)
- [OpenSeadragon](#)
- [Islandora Paged Content](#) (Conditional: please see note below)
- [Drupal.org](#) modules:
  - [Libraries](#)
  - [Token](#)

## OpenSeadragon

[Download](#) and install the Openseadragon library to your sites/libraries folder, or run `drush openseadragon-plugin`. Openseadragon 2.2.1 is known to work well with Islandora. Note: If you use the Drush command, it is advisable to Move (not copy) the install script to your `.drush` folder and run it.

If you have an *existing* install it's required to update Openseadragon to it's latest version. You can do this quickly with the provided Drush command.

```
drush openseadragon-plugin
```

## Reverse Proxy

We make the assumption that we (reverse) proxy Djatoka, to fix the same-origin issue.

For Apache, with Drupal running on the same box as Apache, a couple lines like:

```
ProxyPass /adore-djatoka http://localhost:8080/adore-djatoka
ProxyPassReverse /adore-djatoka http://localhost:8080/adore-djatoka
```

in the Apache config somewhere (either the main `apache.conf`, `httpd.conf`, or in and arbitrarily named `*.conf` in your Apache's `conf.d` directory should suffice to establish the reverse proxy.

In Debian derived systems one will need to create location entries for each proxy or remove the `Deny` from `All` in `mod_proxy`'s config file.

## Configuration

Set the paths for your chosen Image Server in `admin » Islandora » islandora_viewers » openseadragon`

### Djatoka Image Server

Set the paths for 'Djatoka server base URL'

### IIIF Server

Set the path for your IIIF server. Any [IIIF](#) image server can be used the the IIIF tile source. The IIIF tile source provides a full URL to the datastream to be displayed as the IIIF `identifier`. The IIIF server needs to be configured to resolve this full URL to retrieve the image.

The [Cantaloupe](#) IIIF image server can be configured to resolve these identifiers using the [HttpResolver](#) with no prefix specified.

## Configuration Screenshots

There are a lot of options to configure Open Seadragon. Here are screenshots to every available option in the current version.

### Configure Image Server

OpenSeadragon [islandora-development.org](#) My account Log out

Home » Administration » Islandora » Islandora Viewers

✘ There are security updates available for one or more of your modules or themes. To ensure the security of your server, you should update immediately! See the [available updates](#) page for more information and to install your missing updates.

**Image Server**

Adore-Djatoka Image Server  
 IIIF Image Server

Constrain image to viewport  
 On the initial page load, the entire image will be visible in the viewport.

**ADORE DJATOKA IMAGE SERVER SETTINGS**

Settings for Adore-Djatoka Image Server

The location of the Adore-Djatoka server OpenURL resolver.  
✔ Successfully connected to Adore Djatoka Server.

- Note the option to select either an adore-Djatoka Image Server or a IIIF Image server - you will be prompted after selecting with a field where you can enter your image server URL.

### Configure Open Seadragon Tile Source Settings

**OPEN SEADRAGON TILE SOURCE SETTINGS**

These settings will apply to all tile sources globally. See the [documentation](#) for more details.

**Tile Size**  
  
 The size of the tiles assumed to make up each pyramid layer in pixels. Tile size determines the point at which the image pyramid must be divided into a matrix of smaller images.

**Tile Overlap**  
  
 The number of pixels each tile is expected to overlap touching tiles.

- Note that interface documentation links will take you to relevant Seadragon documentation, not back to this page.

### Open Seadragon Viewer Settings

**OPEN SEADRAGON VIEWER SETTINGS**

Settings for OpenSeadragon 2.2.1, see the [documentation](#) for more details.

**Tab Index**  
  
 Tabbing order index to assign to the viewer element. Positive values are selected in increasing order. When tabindex is 0 source order is used. A negative value omits the viewer from the tabbing order.

**Debug mode**  
 Toggles whether messages should be logged and fail-fast behavior should be provided.

**Debug Grid Color**  
  
 Color of the grid in debug mode.

**Blend time**  
  
 Specifies the duration of animation as higher or lower level tiles are replacing the existing tile.

**Always blend**  
 Forces the tile to always blend. By default the tiles skip blending when the blendTime is surpassed and the current animation frame would not complete the blend.

**Auto-hide controls**  
 If the user stops interacting with the viewport, fade the navigation controls. Useful for presentation since the controls are by default floated on top of the image the user is viewing.

**Immediate render**  
 Render the best closest level first, ignoring the lowering levels which provide the effect of very blurry to sharp. It is recommended to change setting to true for mobile devices.

section continues...

**Default zoom level**  
  
Zoom level to use when image is first opened or the home button is clicked. If 0, adjusts to fit viewer.

**Opacity**  
  
Default opacity of the tiled images (1=opaque, 0=transparent)

**Composite Operation**  
  
Select the image server to use with OpenSeadragon

**Placeholder Fill Style**  
  
Draws a colored rectangle behind the tile if it is not loaded yet. You can pass a CSS color value like "#FF8800".

**Initial Rotation**  
  
Initial rotation in degrees.

**Minimum Zoom Level**  
  
Minimum Zoom Level (integer).

**Maximum Zoom Level**  
  
Maximum Zoom Level (integer).

*section continues...*

Home Button Fills Viewer  
Make the "home" button fill the viewer and clip the image, instead of fitting the image to the viewer and letterboxing.

Pan horizontal  
Allow horizontal pan.

Pan vertical  
Allow vertical pan.

Constrain During Pan

Wrap horizontal  
Set to true to force the image to wrap horizontally within the viewport. Useful for maps or images representing the surface of a sphere or cylinder.

Wrap vertical  
Set to true to force the image to wrap vertically within the viewport. Useful for maps or images representing the surface of a sphere or cylinder.

**Minimum zoom image ratio**  
  
The minimum percentage ( expressed as a number between 0 and 1 ) of the viewport height or width at which the zoom out will be constrained. Setting it to 0, for example will allow you to zoom out infinity.

**Maximum zoom pixel ratio**  
  
The maximum ratio to allow a zoom-in to affect the highest level pixel ratio. This can be set to Infinity to allow "infinite" zooming into the image though it is less effective visually if the HTML5 Canvas is not available on the viewing device.

**Smooth Tile Edges Minimum Zoom**  
  
A zoom percentage ( where 1 is 100% ) of the highest resolution level. When zoomed in beyond this value alternative compositing will be used to smooth out the edges between tiles. This will have a performance impact. Can be set to Infinity to turn it off. Note: This setting is ignored on iOS devices due to a known bug (See <https://github.com/openseadragon/openseadragon/issues/952>).

Auto Resize  
Set to false to prevent polling for viewer size changes. Useful for providing custom resize behavior.

Preserve Image Size On Resize  
Set to true to have the image size preserved when the viewer is re-sized. This requires Auto Resize to be enabled (default).

*section continues...*

**Minimum Scroll Delta Time**

Number of milliseconds between canvas-scroll events. This value helps normalize the rate of canvas-scroll events between different devices, causing the faster devices to slow down enough to make the zoom control more manageable.

**Pixels Per Wheel Line**

For pixel-resolution scrolling devices, the number of pixels equal to one scroll line.

**Visibility ratio**

The percentage ( as a number from 0 to 1 ) of the source image which must be kept within the viewport. If the image is dragged beyond that limit, it will 'bounce' back until the minimum visibility ratio is achieved. Setting this to 0 and wrapHorizontal ( or wrapVertical ) to true will provide the effect of an infinitely scrolling viewport.

**Image loader limit**

The maximum number of image requests to make concurrently. By default it is set to 0 allowing the browser to make the maximum number of image requests in parallel as allowed by the browsers policy.

**Click time threshold**

The number of milliseconds within which a pointer down-up event combination will be treated as a click gesture.

**Click distance threshold**

The maximum distance allowed between a pointer down event and a pointer up event to be treated as a click gesture.

**Double click distance threshold**

The number of milliseconds within which two pointer down-up event combinations will be treated as a double-click gesture.

*section continues...*

**Double click distance threshold**

The maximum distance allowed between two pointer click events to be treated as a double-click gesture.

**Spring stiffness**

Determines how sharply the springs used for animations move.

**Animation time**

Specifies the animation duration per each OpenSeadragon.Spring which occur when the image is dragged or zoomed.

**▶ MOUSE POINTER GESTURE SETTINGS****▶ TOUCH POINTER GESTURE SETTINGS****▶ PEN POINTER GESTURE SETTINGS****▶ UNKNOWN POINTER GESTURE SETTINGS****Zoom per click**

The "zoom distance" per mouse click or touch tap. Note: Setting this to 1.0 effectively disables the click-to-zoom feature (also see gestureSettings[Mouse|Touch|Pen].clickToZoom/dblClickToZoom).

**Zoom per scroll**

The "zoom distance" per mouse scroll or touch pinch. Note: Setting this to 1.0 effectively disables the mouse-wheel zoom feature (also see gestureSettings[Mouse|Touch|Pen].scrollToZoom).

## Expanded Mouse Pointer Gesture Settings

#### MOUSE POINTER GESTURE SETTINGS

Settings for gestures generated by a mouse pointer device. (See [OpenSeadragon.GestureSettings](#))

- Scroll To Zoom
  - Zoom on scroll gesture.
- Click To Zoom
  - Zoom on click gesture.
- Double Click To Zoom
  - Zoom on double-click gesture. Note: If set to true then clickToZoom should be set to false to prevent multiple zooms.
- Pinch To Zoom
  - Zoom on pinch gesture.
- Flick Gesture
  - Enable flick gesture.

#### Flick Minimum Speed

120

If flickEnabled is true, the minimum speed to initiate a flick gesture (pixels-per-second).

#### Flick Momentum

0.25

If flickEnabled is true, the momentum factor for the flick gesture.

- Pinch Rotate
  - If pinchRotate is true, the user will have the ability to rotate the image using their fingers.

## Expanded Touch Pointer Gesture Settings

#### TOUCH POINTER GESTURE SETTINGS

Settings for gestures generated by a touch pointer device. (See [OpenSeadragon.GestureSettings](#))

- Scroll To Zoom
  - Zoom on scroll gesture.
- Click To Zoom
  - Zoom on click gesture.
- Double Click To Zoom
  - Zoom on double-click gesture. Note: If set to true then clickToZoom should be set to false to prevent multiple zooms.
- Pinch To Zoom
  - Zoom on pinch gesture.
- Flick Gesture
  - Enable flick gesture.

#### Flick Minimum Speed

120

If flickEnabled is true, the minimum speed to initiate a flick gesture (pixels-per-second).

#### Flick Momentum

0.25

If flickEnabled is true, the momentum factor for the flick gesture.

- Pinch Rotate
  - If pinchRotate is true, the user will have the ability to rotate the image using their fingers.

## Expanded Pen Pointer Gesture Settings

#### PEN POINTER GESTURE SETTINGS

Settings for gestures generated by a pen pointer device. (See [OpenSeadragon.GestureSettings](#))

- Scroll To Zoom
  - Zoom on scroll gesture.
- Click To Zoom
  - Zoom on click gesture.
- Double Click To Zoom
  - Zoom on double-click gesture. Note: If set to true then clickToZoom should be set to false to prevent multiple zooms.
- Pinch To Zoom
  - Zoom on pinch gesture.
- Flick Gesture
  - Enable flick gesture.

#### Flick Minimum Speed

120

If flickEnabled is true, the minimum speed to initiate a flick gesture (pixels-per-second).

#### Flick Momentum

0.25

If flickEnabled is true, the momentum factor for the flick gesture.

- Pinch Rotate
  - If pinchRotate is true, the user will have the ability to rotate the image using their fingers.

## Expanded Unknown Pointer Gesture Settings

#### UNKNOWN POINTER GESTURE SETTINGS

Settings for gestures generated by a unknown pointer device. (See [OpenSeadragon.GestureSettings](#))

- Scroll To Zoom
  - Zoom on scroll gesture.
- Click To Zoom
  - Zoom on click gesture.
- Double Click To Zoom
  - Zoom on double-click gesture. Note: If set to true then clickToZoom should be set to false to prevent multiple zooms.
- Pinch To Zoom
  - Zoom on pinch gesture.
- Flick Gesture
  - Enable flick gesture.

#### Flick Minimum Speed

120

If flickEnabled is true, the minimum speed to initiate a flick gesture (pixels-per-second).

#### Flick Momentum

0.25

If flickEnabled is true, the momentum factor for the flick gesture.

- Pinch Rotate
  - If pinchRotate is true, the user will have the ability to rotate the image using their fingers.

## Open Seadragon Viewer Settings (Continued)

**Zoom per click**  
  
 The "zoom distance" per mouse click or touch tap. Note: Setting this to 1.0 effectively disables the click-to-zoom feature (also see `gestureSettings[Mouse|Touch|Pen].clickToZoom/dblClickToZoom`).

**Zoom per scroll**  
  
 The "zoom distance" per mouse scroll or touch pinch. Note: Setting this to 1.0 effectively disables the mouse-wheel zoom feature (also see `gestureSettings[Mouse|Touch|Pen].scrollToZoom`).

**Zoom per second**  
  
 The number of seconds to animate a single zoom event over.

**NAVIGATOR OPTIONS**

Show Navigator  
 Set to true to make the navigator minimap appear.

**Controls Fade Delay**  
  
 The number of milliseconds to wait once the user has stopped interacting with the interface before beginning to fade the controls. Assumes `showNavigationControl` and `autoHideControls` are both true.

**Controls Fade Length**  
  
 The number of milliseconds to animate the controls fading out.

**Controls Fade Delay**  
  
 The max number of images we should keep in memory (per drawer).

**timeout**

*section continues...*

Use Canvas  
 Set to false to not use an HTML canvas element for image rendering even if canvas is supported.

**Minimum Pixel Ratio**  
  
 The higher the `minPixelRatio`, the lower the quality of the image that is considered sufficient to stop rendering a given zoom level. For example, if you are targeting mobile devices with less bandwidth you may try setting this to 1.5 or higher.

Enable Mouse Navigation  
 Is the user able to interact with the image via mouse or touch. Default interactions include dragging the image in a plane, and zooming in toward and away from the image.

**NAVIGATION CONTROLS**

Show Navigation Control  
 Set to false to prevent the appearance of the default navigation controls. Note that if set to false, the custom buttons set by the options `zoomInButton`, `zoomOutButton` etc, are rendered inactive.

**Navigation Control Anchor**  
  
 Placement of the default navigation controls. To set the placement of the sequence controls, see the `sequenceControlAnchor` option.

Show Zoom Control  
 If true then + and - buttons to zoom in and out are displayed. Note: `OpenSeadragon.Options.showNavigationControl` is overriding this setting when set to false.

Show Home Control  
 documentation

Show Full Page Control  
 If true then the rotate left/right controls will be displayed as part of the standard controls. This is also subject to the browser support for rotate (e.g., `viewer.drawer.canRotate()`). Note: `OpenSeadragon.Options.showNavigationControl` is overriding this setting when set to false.

Show Rotation Control  
 If `sequenceMode` is true, then provide buttons for navigating forward and backward through the images.

**Sequence Control Anchor**  
  
 Placement of the default sequence controls.

*section continues...*

Navigation Previous/Next Wrap  
If true then the "previous" button will wrap to the last image when viewing the first image and the "next" button will wrap to the first image when viewing the last image.

**SEQUENCE MODE**

Sequence Mode  
Set to true to have the viewer treat your tilesources as a sequence of images to be opened one at a time rather than all at once.

**COLLECTION MODE**

Enable Collection Mode  
Set to true to have the viewer arrange your TiledImages in a grid or line.

## Troubleshooting/Issues

Having problems? Check out the Islandora google groups for a solution. Have a solution (or a problem with these docs)? Share it with the community!

- [Islandora Group](#)
- [Islandora Dev Group](#)