cgpJBrowseToolkit Documentation

Release 1.0.0

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CHAPTER 1

General

This project is provides scripts and tools which work with or on JBrowse that are considered publicly useful.

1.1 jbrowse_rasterize.js

Generate screenshots from your JBrowse instance using the URL and a BED file of locations of interest.

1.1.1 Benefits over phantomjs rasterize.js

The advantages of this over looping on the standard phantomjs rasterize.js are:

- Cache of data is maintained.
- Also works with sites secured with http_basic (see *HTTP-BASIC authentication*).
- Trims/expands images to correct height.
- Handles variable track loading time by monitoring network activity/
- Hides tracklist automatically.

1.1.2 Usage

See command line help for most current options:

```
$ js/jbrowse_rasterize.js --help
Usage: jbrowse_rasterize [options]

Generate images against a JBrowse server


Options:
```

```
  -l, --locs <file>         Bed file of locations, see --help
  -b, --baseUrl [value]     URL from pre configured JBrowse webpage, ommit if provided␣
↪in BED file
  -w, --width [n]           Width of image (default: 600)
  -i, --imgType [value]     Type of image (jpeg|png) (default: png)
  -o, --outdir [value]      Output folder (default: ./)
  -n, --navOff              Remove nav bars
      --highlight           Highlight region (for short events)
  -q, --quality [n]         Image resolution (1..3) (default: 3)
  -p, --passwdFile [file]   User password for httpBasic
  -t, --timeout [n]         For each track allow upto N sec. (default: 10)
  -v, --version             output the version number
  -h, --help                output usage information

Additional information:

Image quality:
  Best image quality is achieved with:
    --imgType png --quality 3


--locs bed file:

  Can include comment lines to switch the baseUrl used for the next block of
  coordinates.

  Any comment line will be processed into a datasource ($DS) name and URL.  Files␣
↪generated will be
  output to a subfolder of the specified --output area as $OUTPUT/$DS/$CHR-$START_
↪$END.

  FORMAT:

    # DATASET_NAME URL
    CHR START END
    # DATASET_NAME2 URL
    CHR START END
    ...
```

Usage is simple, set up the display with relevant tracks in the browser and provide the updated URL it to the script:

```
$ jbrowse_rasterize.js \
--width 1200 \
--imgType png \
--locs test/volvox.bed \
--outdir wibble1 \
--baseUrl 'http://jbrowse.org/code/JBrowse-1.12.4/?tracks=DNA%2CTranscript%2Cvolvox-
↪sorted_bam_coverage%2Cvolvox-sorted_bam&data=sample_data%2Fjson%2Fvolvox'
```

Table 1.1: Command line args

Argument	Required	Type/Values	Description
locs	Yes	`*.bed`	Bed file of locations to snapshot, not bgzip'ed.
baseUrl	No *	URL	JBrowse URL to base all snapshots on, unless defined in bed file.
width	Yes	integer	Width in pixels for generated image.
imgType	Yes	`pdf|jpeg`	Type of image to generate.
outdir	Yes	path	Output folder.
navOff	No	N/A	Presence causes the navigation panel to be excluded.
highlight	No	N/A	Highlights the targeted range, for use with short events where JBrowse pads image.
quality	No	1,2,3	Resolution of image, 3 = best
passwdFile	No	path	Path to file containing password (**please secure**).
timeout	No	integer	Extends the default MAX timeout per track.
version	No	N/A	Output version of script and exit when found.
help	No	N/A	Prints help text.

HTTP-BASIC authentication

To use this with a site secured with http_basic you need to provide your password for the authentication phase. To do this under casperjs it's being read from a file (if you know of a better way please get in touch).

Please **set permissions accordingly**, don't expose your password on a network drive.

Other:

- Sites not requiring auth load silently.
- If not provided when required you will see the message:: ERROR: Check you connection and if you need to provide a password (http error code: 401)

Tested track types

All testing carried out under JBrowse 1.12.3 rc1 onwards.

Functionality of the following tracks has been tested:

- Alignments2
- VCF
- XYplot
- CanvasFeatures
- Sequence

Known issues

- multibigwig - plugin track will only render with v0.7.0+

Please report any problems with other track types on the GitHub issue tracker

1.2 Installation

Requires a working installation of `node` with the following npm modules:

- commander
- puppeteer
- mkdirp

```
` npm install commander puppeteer mkdirp `
```

Installation of `jbrowse_rasterize` can be achieved a number of ways but the simplest is:

```
export VERSION=master # or version number, e.g. 1.1.0
export JBTK=https://raw.githubusercontent.com/cancerit/cgpJBrowseToolkit
curl -sSL  $JBTK/$VERSION/js/jbrowse_rasterize.js> $HOME/local/bin/jbrowse_rasterize.
↪js
chmod u+x $HOME/local/bin/jbrowse_rasterize.js
```

1.3 How jbrowse_rasterize works

`jbrowse_rasterize` now uses Puppeteer which allows testing for network activity to cease before indicating a page has completed rendering.

There is no longer a guess as to how long it will take for elements to have completed drawing as

1.3.1 Prior to 2.0

The ability to take screenshots in JBrowse is made diffcult by there being no true end-point to the generation of a view. All actions are asynchronous with no single testable variable or element.

`jbrowse_rasterize` attempted to compensate for this by testing several critical elements of the DOM:

```
document.readyState === "complete" &&
document.getElementsByClassName('innerTrackContainer')[0].getElementsByClassName(
↪'track').length === trackCount+1 &&
document.getElementsByClassName('loading').length === 0
```

`trackCount` needs `+1` to account for the grid background track.

CHANGES

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```
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Author: Cancer Genome Project <cgpit@sanger.ac.uk>

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```

```
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```