Configuration of HicP Visualization

Configuring Topological View

Topological View is comprised by several text configuration files. You can edit these files by using a text editor.

This following part discusses something about manual editing of Topological View configuration files.

There is a main configuration file of Topological View, *circos.conf* which contains one or more *Data source-specific* configuration files that define the options needed to create a specific physical view browser.

circos.conf

When you installed HicP, it was a configuration file circos.conf which located in the root directory with default data sources, including their names and their source-specific configuration files.

Here is the default **circos.conf**:

```
[dataset.human]
name=Human Public Data
conf=conf/circlet/pubdata_human.conf
[dataset.mouse]
name=Mouse Public Data
conf=conf/circlet/pubdata_mouse.conf
```

Each data source begins with a unique dataset name which enclosed in square brackets. Any name is allowed, provided that it does not contain newlines.
Each data source has **name** and **conf** options. The first provides a human-readable description of the source; this description will appear in the menu offered to the user in the navigation bar. The **conf** option indicates the location of the configuration file for this data source. Relative paths are interpreted relative to circos.conf. Note: there are no blank spaces around name and conf paired values.

Data Source Configuration Files

Each data source has a configuration file listed in the main circos.conf configuration file. This configuration file defines the tracks to show.
The following shows a basic data source configuration file:

```
chroms=/circosweb/json/species/human_refseq.json
ideogram=/circosweb/json/ideogram/human/
toomanyFeature=10000000

##histone mark
[H3k27ac]
glyph_type=histogram
storageClass=GFF3
storage=/share/disk1/work/bioinformatics/tangbx/hic/dataprocess/gm12878
/peak/srt/H3k27ac/tabix
histone_bin=200000
statis_file=/share/disk1/work/bioinformatics/tangbx/hic/dataprocess/gm128
78/peak/statics/H3k27ac
line_width=20
color=red
pcolor=rgb(255,0,0)
ncolor=rgb(255,0,0)
height=50
key=H3k27ac
category=ENCODE(GM12878)
```

Each data source configuration file must contain "chroms" and "ideogram" options which described the reference organism and the rendered ideogram. "toomanyFeature" option is used to define max view scope length, if larger than this ,then a statics file of feature data will be loaded. The annotated information can be started with "#".
The following part describes the track definition of each data source configuration file.

Track Definitions

To add tracks to a data source, you will create a series of one or more track definition stanzas.

A typical track definition looks like the following picture.

This track is named " H3k27ac". The feature data is stored in a "storage" option by using GFF3 format while the statistics file is stored in "statis_file" option. The glyph type "histogram" is used to display the feature as a histogram picture with red color. This track will occupy 50 pixels height and the histogram height will be drawn with 20 pixels. The human-readable key "H3k27ac" printed at the bottom of " ENCODE(GM12878)" ("H3k27ac" must be a unique identification in the whole data source.)

Track key can contain any character.

```
[H3k27ac]
glyph_type=histogram
storageClass=GFF3
storage=/share/disk1/work/bioinformatics/tangbx/hic/dataprocess/gm12878/peak/srt/H3k27ac/tabix
histone_bin=200000
statis_file=/share/disk1/work/bioinformatics/tangbx/hic/dataprocess/gm12878/peak/statics/H3k27ac
line_width=20
color=red
height=50
key=H3k27ac
category=ENCODE(GM12878)
```

Glyph and Appearance Options

These options control the rendering of features onto the Topological View web page, including their shape and color.

color

This controls the background color of the glyph. Any color definition is available, such as white, #ffffff

line_width

This controls the height of histogram

glyph_type

This controls the glyph (graphical icon) that is used to represent the feature. There are two glyphs “histogram” and “arc” to render feature data. The “histogram” glyph will render the feature data as a histogram; the “arc” glyph will render the feature data as an arc line in the inner circle.

storageClass

This controls the file format of feature data. For now, only GFF3format supported, in the future, more format will be allowed.

Storage

This controls the absolute path of feature data.

statis_file

This controls the absolute path of statistical feature data

histone_bin

This controls the statics bin of feature data

Track Table Options

These options control the human-readable track label, as well as the way that tracks are grouped in the physical view tracks table.

key

This option controls the descriptive key that is shown in the left track menu of topological

view page. It is shown as a checkbox that allows users to switch tracks on and off.

category

This option allows you to group tracks into different groups on the topological view display. For example, if you wanted several tracks to be in a separate group called " ENCODE ", you would add this to each of the track definitions:

```
category = ENCODE
```