Package 'hubR'

September 9, 2022

Title Build UCSC track hubs

Version 0.1.5

URL <https://github.com/>

Description Takes a list of bigwig file names, Amazon S3 bucket info and generates a UCSC genome browser track hub along with neccessary hmac signatures.

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Depends openssl,
digest,
RCurl,
aws.s3,
RColorBrewer,
dplyr

Suggests knitr,
rmarkdown,
testthat

Encoding UTF-8

LazyData true

VignetteBuilder knitr

Roxygen list(markdown = TRUE)

RoxygenNote 7.1.2

R topics documented:

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hubR *Builds a track hub for the UCSC genome browser*

Description

This builds the track hub and handles all uploading to AWS S3 buckets as named in track.bucket and hub.bucket. Any changes to the bigwig file names or 'track.bucket' will require the regeneration of HMAC signatures and the hub file (rerun hubR).

Usage

```
hubR(
  track.bucket,
  hub.bucket,
  data.dir,
  species,
  region,
  type,
  taxonomy,
  genome,
  bigwigs = NULL,
  track.names = NULL,
  track.labels = NULL,
  colors = NULL,
  groupby = NULL,
  hub.type = "multiwig",
  output.track.file = "trackDB.txt",
  email = "nelson.johansen@alleninstitute.org"
)
```

Arguments

track.bucket	Amazon S3 bucket name that stores the .bw files
hub.bucket	Amazon S3 bucket name that stores the track hub .txt file
data.dir	Location of the bigwig files and where the trackDB.txt will be saved locally
species	Species information
region	Brain region information
type	Data type (ATAC, Multiome, etc.)
taxonomy	Annotation information
genome	Genome information, must be a valid UCSC genome browser genome.
bigwigs	Either a directory or vector of file names for bigwigs. If a vector, then the order of the vector will define the order of the tracks.
track.names	Short labels to give each track. If NULL the function attemps to gather from .bw file name: track.names-*.bw
track.labels	Detailed labels to give each track. If NULL the function attemps to gather from .bw file name: track.labels-*.bw
colors	Colors (in R, G, B format) to give the tracks. If NULL colors will be auto-generated.

groupby	A vector of grouping variables for the bigwigs when building composite or sea-ad tracks.
hub.type	Format of the track hub: multiwig or composite
output.track.file	
	Output track hub filename. Default: trackDB.txt
email	Correspondence email

Value

Hub URL

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setup.aws   *Setup aws.s3*

Description

This function takes in the users AWS credentials and primes aws.s3.

Usage

```
setup.aws(access.key, secret.key, region = "us-west-2")
```

Arguments

access.key	Amazon S3 access key ID
secret.key	Amazon S3 access key ID
region	Amazon S3 region: default 'us-west-2'

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setup.awscli   *Setup awscli2*

Description

This function adds an awscli2 install to the users PATH

Usage

```
setup.awscli(
  awscli.path = "/allen/programs/celltypes/workgroups/hct/NelsonJ/Home/v2/2.4.9/bin"
)
```

Arguments

awscli.path	directory where awscli2 was installed, defaults to Nelson Johansens install

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