

Package ‘hubR’

February 18, 2022

Title Build UCSC track hubs

Version 0.1.1

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 necessary hmac signatures.

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

Suggests knitr,
rmarkdown,
testthat

Encoding UTF-8

LazyData true

VignetteBuilder knitr

Roxygen list(markdown = TRUE)

RoxygenNote 7.1.2

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hubR	<i>Builds a track hub for the UCSC genome browser</i>
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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.

Usage

```

hubR(
  track.bucket,
  hub.bucket,
  bigwigs,
  pseudo.names = NULL,
  long.labels = NULL,
  colors = NULL,
  species,
  region,
  type,
  cluster,
  genome,
  data.dir,
  output.track.file = "trackDB.txt",
  email = ""
)

```

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
bigwigs	Bigwig file names which exactly match those in 'track.bucket'
pseudo.names	Short labels to give each track. If NULL the function attempts to gather from .bw file name: pseudo.names-*.bw
long.labels	Detailed labels to give each track. If NULL the function attempts to gather from .bw file name: long.labels-*.bw
colors	Colors (in R, G, B format) to give the tracks. If NULL colors will be auto-generated.
species	Species information
region	Brain region information
type	Data type (ATAC, Multiome, etc.)
cluster	Cluster label information
genome	Genome information, must be a valid UCSC genome browser genome.
data.dir	Location of the bigwig files and where the trackDB.txt will be saved locally
output.track.file	Output track hub filename. Default: trackDB.txt
email	Correspondence email

Value

Hub URL

`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

<code>access.key</code>	Amazon S3 access key ID
<code>secret.key</code>	Amazon S3 access key ID
<code>region</code>	Amazon S3 region: default 'us-west-2'

`setup.awsccli`*Setup awsccli2*

Description

This function adds an awsccli2 install to the users PATH

Usage

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

Arguments

<code>awsccli.path</code>	directory where awsccli2 was installed
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