

Package: googleCloudRunner (via r-universe)

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Type Package

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Description Tools to easily enable R scripts in the Google Cloud Platform. Utilise cloud services such as Cloud Run [<https://cloud.google.com/run/>](https://cloud.google.com/run/) for R over HTTP, Cloud Build [<https://cloud.google.com/build>](https://cloud.google.com/build) for Continuous Delivery and Integration services and Cloud Scheduler [<https://cloud.google.com/scheduler/>](https://cloud.google.com/scheduler/) for scheduled scripts.

URL <https://code.markedmondson.me/googleCloudRunner/>

BugReports <https://github.com/MarkEdmondson1234/googleCloudRunner/issues>

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Build*Build Object*

Description

Build Object

Usage

```
Build(  
  Build.substitutions = NULL,  
  Build.timing = NULL,  
  results = NULL,  
  logsBucket = NULL,  
  steps = NULL,  
  buildTriggerId = NULL,  
  id = NULL,  
  tags = NULL,  
  startTime = NULL,  
  substitutions = NULL,  
  timing = NULL,  
  sourceProvenance = NULL,  
  createTime = NULL,  
  images = NULL,  
  projectId = NULL,  
  logUrl = NULL,  
  finishTime = NULL,  
  source = NULL,  
  options = NULL,  
  timeout = NULL,  
  status = NULL,  
  statusDetail = NULL,  
  artifacts = NULL,  
  secrets = NULL,  
  availableSecrets = NULL,  
  serviceAccount = NULL  
)
```

Arguments

Build.substitutions	The Build.substitutions object or list of objects
Build.timing	The Build.timing object or list of objects
results	Output only
logsBucket	Google Cloud Storage bucket where logs should be written (see
steps	Required

buildTriggerId	Output only
id	Output only
tags	Tags for annotation of a 'Build'
startTime	Output only
substitutions	Substitutions data for 'Build' resource
timing	Output only
sourceProvenance	Output only
createTime	Output only
images	A list of images to be pushed upon the successful completion of all build
projectId	Output only
logUrl	Output only
finishTime	Output only
source	A Source object specifying the location of the source files to build, usually created by cr_build_source
options	Special options for this build
timeout	Amount of time that this build should be allowed to run, to second
status	Output only
statusDetail	Output only
artifacts	Artifacts produced by the build that should be uploaded upon
secrets	Secrets to decrypt using Cloud Key Management Service [deprecated]
availableSecrets	preferred way to use Secrets, via Secret Manager
serviceAccount	service account email to be used for the build

Details

A build resource in the Cloud Build API.

At a high level, a 'Build' describes where to find source code, how to build it (for example, the builder image to run on the source), and where to store the built artifacts.

Value

Build object

Build Macros

Fields can include the following variables, which will be expanded when the build is created:-

- \$PROJECT_ID: the project ID of the build.
- \$BUILD_ID: the autogenerated ID of the build.
- \$REPO_NAME: the source repository name specified by RepoSource.

- `$BRANCH_NAME`: the branch name specified by RepoSource.
- `$TAG_NAME`: the tag name specified by RepoSource.
- `$REVISION_ID` or `$COMMIT_SHA`: the commit SHA specified by RepoSource or resolved from the specified branch or tag.
- `$SHORT_SHA`: first 7 characters of `$REVISION_ID` or `$COMMIT_SHA`.

See Also

Other Cloud Build functions: [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

BuildTrigger

BuildTrigger Object

Description

Configuration for an automated build in response to source repository changes.

Usage

```
BuildTrigger(
  filename = NULL,
  name = NULL,
  tags = NULL,
  build = NULL,
  ignoredFiles = NULL,
  github = NULL,
  substitutions = NULL,
  includedFiles = NULL,
  disabled = NULL,
  sourceToBuild = NULL,
  triggerTemplate = NULL,
  webhookConfig = NULL,
  description = NULL,
  pubsubConfig = NULL
)
```

Arguments

<code>filename</code>	Path, from the source root, to a file whose contents is used for the build
<code>name</code>	User assigned name of the trigger
<code>tags</code>	Tags for annotation of a 'BuildTrigger'
<code>build</code>	Contents of the build template

ignoredFiles	ignored_files and included_files are file glob matches extended with support for "**".
github	a GitHubEventsConfig object - mutually exclusive with triggerTemplate
substitutions	A named list of Build macro variables
includedFiles	If any of the files altered in the commit pass the ignored_files
disabled	If true, the trigger will never result in a build
sourceToBuild	A cr_buildtrigger_repo object (but no regex allowed for branch or tag) This field is currently only used by Webhook, Pub/Sub, Manual, and Cron triggers and is the source of the build will execute upon.
triggerTemplate	a RepoSource object - mutually exclusive with github
webhookConfig	WebhookConfig describes the configuration of a trigger that creates a build whenever a webhook is sent to a trigger's webhook URL.
description	Human-readable description of this trigger
pubsubConfig	PubsubConfig describes the configuration of a trigger that creates a build whenever a Pub/Sub message is published.

Value

BuildTrigger object

See Also

<https://cloud.google.com/build/docs/api/reference/rest/v1/projects.triggers>

Other BuildTrigger functions: [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

cr_bucket_set

Get/Set the Cloud Storage bucket for your Cloud Build Service

Description

Can also use environment arg GCS_DEFAULT_BUCKET

Usage

```
cr_bucket_set(bucket)
```

```
cr_bucket_get()
```

Arguments

bucket The GCS bucket

Examples

```
cr_bucket_get()
```

cr_build	<i>Starts a build with the specified configuration.</i>
----------	---

Description

This method returns a long-running ‘Operation’, which includes the buildID. Pass the build ID to [cr_build_status](#) to determine the build status (such as ‘SUCCESS’ or ‘FAILURE’).

Usage

```
cr_build(
  x,
  source = NULL,
  timeout = NULL,
  images = NULL,
  substitutions = NULL,
  serviceAccount = NULL,
  artifacts = NULL,
  options = NULL,
  projectId = cr_project_get(),
  launch_browser = interactive()
)
```

Arguments

x	A cloudbuild.yaml file location or an R object that will be turned into yaml via as.yaml or a Build object created by cr_build_make or from a previous build you want to rerun.
source	A Source object specifying the location of the source files to build, usually created by cr_build_source
timeout	Amount of time that this build should be allowed to run, to second
images	A list of images to be pushed upon the successful completion of all build
substitutions	Substitutions data for ‘Build’ resource
serviceAccount	service account email to be used for the build
artifacts	Artifacts produced by the build that should be uploaded upon
options	Special options for this build
projectId	ID of the project
launch_browser	Whether to launch the logs URL in a browser once deployed

See Also

[Google Documentation for Cloud Build](#)

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#)

Examples

```
cr_project_set("my-project")
my_gcs_source <- cr_build_source(StorageSource("my_code.tar.gz",
  bucket = "gs://my-bucket"
))
my_gcs_source

my_repo_source <- cr_build_source(RepoSource("github_username_my-repo.com",
  branchName = "master"
))
my_repo_source
## Not run:

# build from a cloudbuild.yaml file
cloudbuild_file <- system.file("cloudbuild/cloudbuild.yaml",
  package = "googleCloudRunner"
)

# asynchronous, will launch log browser by default
b1 <- cr_build(cloudbuild_file)

# synchronous waiting for build to finish
b2 <- cr_build_wait(b1)

# the same results
cr_build_status(b1)
cr_build_status(b2)

# build from a cloud storage source
build1 <- cr_build(cloudbuild_file,
  source = my_gcs_source
)
# build from a git repository source
build2 <- cr_build(cloudbuild_file,
  source = my_repo_source
)

# you can send in results for previous builds to trigger
# the same build under a new Id
# will trigger build2 again
cr_build(build2)

# a build with substitutions (Cloud Build macros)
```

```
cr_build(build2, substitutions = list(`_SUB` = "yo"))
## End(Not run)
```

cr_buildstep *Create a yaml build step*

Description

Helper for creating build steps for upload to Cloud Build

Usage

```
cr_buildstep(
  name,
  args = NULL,
  id = NULL,
  prefix = "gcr.io/cloud-builders/",
  entrypoint = NULL,
  dir = "",
  env = NULL,
  waitFor = NULL,
  volumes = NULL,
  secretEnv = NULL
)
```

Arguments

name	name of docker image to call appended to prefix
args	character vector of arguments
id	Optional id for the step
prefix	prefixed to name - set to "" to suppress. Will be suppressed if name starts with gcr.io or *-docker.pkg.dev
entrypoint	change the entrypoint for the docker container
dir	The directory to use, relative to /workspace e.g. /workspace/deploy/
env	Environment variables for this step. A character vector for each assignment
waitFor	Whether to wait for previous buildsteps to complete before running. Default it will wait for previous step.
volumes	volumes to connect and write to
secretEnv	A list of secrets stored in Secret Manager referred to in args via a \$\$var

Details

This uses R to make building steps for cloudbuild.yml files harder to make mistakes with, and also means you can program creation of cloud build steps for use in R or other languages. Various templates with common use cases of buildsteps are also available that wrap this function, refer to the "See Also" section.

WaitFor

By default each buildstep waits for the previous, but if you pass "-" then it will start immediately, or if you pass in a list of ids it will wait for previous buildsteps to finish who have that id. See [Configuring Build Step Order](#) for details.

Build Macros

Fields can include the following variables, which will be expanded when the build is created:-

- \$PROJECT_ID: the project ID of the build.
- \$BUILD_ID: the autogenerated ID of the build.
- \$REPO_NAME: the source repository name specified by RepoSource.
- \$BRANCH_NAME: the branch name specified by RepoSource.
- \$TAG_NAME: the tag name specified by RepoSource.
- \$REVISION_ID or \$COMMIT_SHA: the commit SHA specified by RepoSource or resolved from the specified branch or tag.
- \$SHORT_SHA: first 7 characters of \$REVISION_ID or \$COMMIT_SHA.

Or you can add your own custom variables, set in the Build Trigger. Custom variables always start with \$_ e.g. \$_MY_VAR

secretEnv

You can pass secrets that are stored in Secret Manager directly instead of using a dedicated buildstep via [cr_buildstep_secret](#)

Within the code passed to args those secrets are referred to via \$\$SECRET_NAME. If used then [cr_build_yaml](#) must also include the availableSecrets argument.

See Also

[Creating custom build steps how-to guide](#)

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")
# creating yaml for use in deploying cloud run
image <- "gcr.io/my-project/my-image:$BUILD_ID"
cr_build_yaml(
  steps = c(
    cr_buildstep("docker", c("build", "-t", image, ".")),
    cr_buildstep("docker", c("push", image)),
```

```

    cr_buildstep("gcloud", c(
      "beta", "run", "deploy", "test1",
      "--image", image
    ))
  ),
  images = image
)

# use premade docker buildstep - combine using c()
image <- "gcr.io/my-project/my-image"
cr_build_yaml(
  steps = c(
    cr_buildstep_docker(image),
    cr_buildstep("gcloud",
      args = c(
        "beta", "run", "deploy",
        "test1", "--image", image
      )
    )
  ),
  images = image
)

# list files with a new entrypoint for gcloud
cr_build_yaml(steps = cr_buildstep("gcloud", c("-c", "ls -la"),
  entrypoint = "bash"
))

# to call from images not using gcr.io/cloud-builders stem
cr_buildstep("alpine", c("-c", "ls -la"), entrypoint = "bash", prefix = "")

# to add environment arguments to the step
cr_buildstep("docker", "version", env = c("ENV1=env1", "ENV2=$PROJECT_ID"))

# to add volumes wrap in list()
cr_buildstep("test", "ls", volumes = list(list(name = "ssh", path = "/root/.ssh")))

```

cr_buildstep_bash *Run a bash script in a Cloud Build step*

Description

Helper to run a supplied bash script, that will be copied in-line

Usage

```

cr_buildstep_bash(
  bash_script,
  name = "ubuntu",
  bash_source = c("local", "runtime"),

```

```

    escape_dollar = TRUE,
    ...
)

```

Arguments

bash_script	bash code to run or a filepath to a file containing bash code that ends with .bash or .sh
name	The image that will run the R code
bash_source	Whether the code will be from a runtime file within the source or at build time copying over from a local file in your session
escape_dollar	Default TRUE. This will turn \$ into \$\$ within the script to avoid them being recognised as Cloud Build variables. Turn this off if you want that behaviour (e.g. my_project="\$PROJECT_ID")
...	Other arguments passed to cr_buildstep

Details

If you need to escape build parameters in bash scripts, you need to escape CloudBuild's substitution via \$\$ and bash's substitution via \\$ e.g. \\$\$PARAM

See Also

Other Cloud Buildsteps: [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```

cr_project_set("my-project")
bs <- cr_build_yaml(
  steps = cr_buildstep_bash("echo 'Hello'")
)
## Not run:
cr_build(bs)

## End(Not run)

```

cr_buildstep_compute_container

Buildstep to deploy to Google Compute Engine

Description

This build step adds some helpers to [cr_buildstep_gcloud](#) for deploying to VMs to GCE that will auto create a container within them and atyach it to the disk

Usage

```

cr_buildstep_compute_container(
  vm_name,
  container_image = "gcr.io/gcer-public/persistent-rstudio:latest",
  disk_name = paste0(vm_name, "-disk"),
  disk_mount_path = "/home",
  zone = "europe-west1-b",
  disk_size = "10GB",
  machine_type = "n1-standard-1",
  container_env = "",
  scopes = "cloud-platform",
  network = "default",
  gcloud_args = NULL
)

cr_buildstep_compute_rstudio(
  rstudio_user,
  rstudio_pw,
  vm_name = "rstudio",
  disk_name = "rstudio-disk",
  zone = "europe-west1-b",
  disk_size = "10GB",
  machine_type = "n1-standard-1",
  container_image = "gcr.io/gcer-public/persistent-rstudio:latest",
  network = "default"
)

```

Arguments

vm_name	Name of the VM you will create
container_image	The Docker image that will be launched in the VM
disk_name	Name of the disk that will be attached to the VM's container image
disk_mount_path	Where the disk will be attached to the container in the VM
zone	Which zone the VM will launch within
disk_size	The size of the disk
machine_type	The type of VM that will be launched
container_env	Environment variables set within the VM's container image
scopes	The GCE scopes that the VM will be launched with permission to use
network	The network the VM will use. The container will bridge into the same network
gcloud_args	Other gcloud arguments you send in e.g. c("--boot-disk-device-name=boot-disk1", "--boot-disk-
rstudio_user	The username for the RStudio image the VM will launch
rstudio_pw	The password for the RStudio image the VM will launch

Examples

```
bs <- cr_buildstep_compute_rstudio("mark", "securepassword1234")
build <- cr_build_yaml(bs)
build
## Not run:

cr_build(build)

## End(Not run)
```

cr_buildstep_decrypt *Create a build step for decrypting files via KMS*

Description

Create a build step to decrypt files using CryptoKey from Cloud Key Management Service. Usually you will prefer to use [cr_buildstep_secret](#)

Usage

```
cr_buildstep_decrypt(cipher, plain, keyring, key, location = "global", ...)
```

Arguments

cipher	The file that has been encrypted
plain	The file location to decrypt to
keyring	The KMS keyring to use
key	The KMS key to use
location	The KMS location
...	Further arguments passed in to cr_buildstep

Details

Key Management Store can encrypt secret files for use within your later buildsteps.

Setup

You will need to set up the [encrypted key using gcloud](#) following the link from Google

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")
cr_buildstep_decrypt("secret.json.enc",
  plain = "secret.json",
  keyring = "my_keyring",
  key = "my_key"
)
```

cr_buildstep_df	<i>Convert a data.frame into cr_buildstep</i>
-----------------	---

Description

Helper to turn a data.frame of buildsteps info into format accepted by [cr_build](#)

Usage

```
cr_buildstep_df(x)
```

Arguments

x A data.frame of steps to turn into buildsteps, with at least name and args columns

Details

This helps convert the output of [cr_build](#) into valid [cr_buildstep](#) so it can be sent back into the API
 If constructing arg list columns then **I** suppresses conversion of the list to columns that would otherwise break the yaml format

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targetets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
y <- data.frame(
  name = c("docker", "alpine"),
  args = I(list(c("version"), c("echo", "Hello Cloud Build"))),
  id = c("Docker Version", "Hello Cloud Build"),
  prefix = c(NA, ""),
  stringsAsFactors = FALSE
)
cr_buildstep_df(y)
```

cr_buildstep_docker *Create a build step to build and push a docker image*

Description

Create a build step to build and push a docker image

Usage

```
cr_buildstep_docker(
  image,
  tag = c("latest", "$BUILD_ID"),
  location = ".",
  projectId = cr_project_get(),
  dockerfile = "Dockerfile",
  kaniko_cache = FALSE,
  build_args = NULL,
  push_image = TRUE,
  ...
)
```

Arguments

image	The image tag that will be pushed, starting with gcr.io or created by combining with projectId if not starting with gcr.io
tag	The tag or tags to be attached to the pushed image - can use Build macros
location	Where the Dockerfile to build is in relation to dir
projectId	The projectId
dockerfile	Specify the name of the Dockerfile found at location
kaniko_cache	If TRUE will use kaniko cache for Docker builds.
build_args	additional arguments to pass to docker build, should be a character vector.
push_image	if kaniko_cache = FALSE and push_image = FALSE, then the docker image is simply built and not pushed
...	Further arguments passed in to cr_buildstep

Details

Setting kaniko_cache = TRUE will enable caching of the layers of the Dockerfile, which will speed up subsequent builds of that Dockerfile. See [Using Kaniko cache](#)

If building multiple tags they don't have to run sequentially - set waitFor = "-" to build concurrently

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")

cr_buildstep_docker("gcr.io/my-project/my-image")
cr_buildstep_docker("my-image")
cr_buildstep_docker("my-image", tag = "$BRANCH_NAME")

# setting up a build to trigger off a Git source:
my_image <- "gcr.io/my-project/my-image"
my_repo <- RepoSource("github_markedmondson1234_googlecloudrunner",
  branchName = "master"
)
## Not run:
docker_yaml <- cr_build_yaml(steps = cr_buildstep_docker(my_image))
built_docker <- cr_build(docker_yaml, source = my_repo)

# make a build trigger so it builds on each push to master
cr_buildtrigger("build-docker", trigger = my_repo, build = built_docker)

# add a cache to your docker build to speed up repeat builds
cr_buildstep_docker("my-image", kaniko_cache = TRUE)

# building using manual buildsteps to clone from git
bs <- c(
  cr_buildstep_gitsetup("github-ssh"),
  cr_buildstep_git(c("clone", "git@github.com:MarkEdmondson1234/googleCloudRunner", ".")),
  cr_buildstep_docker("gcr.io/gcer-public/package-tools",
    dir = "inst/docker/packages/"
  )
)

built <- cr_build(cr_build_yaml(bs))

## End(Not run)
```

cr_buildstep_docker_auth

Authorize Docker using gcloud auth configure-docker

Description

Authorize Docker using gcloud auth configure-docker

Usage

```
cr_buildstep_docker_auth(image, ...)
```

Arguments

image	name of the Docker image to push or pull from that needs authorization, or simply the registry.
...	Other arguments passed to cr_buildstep_gcloud

Value

A buildstep

Examples

```
cr_buildstep_docker_auth("us.gcr.io")
cr_buildstep_docker_auth(c("us.gcr.io", "asia.gcr.io"))
cr_buildstep_docker_auth("https://asia.gcr.io/myrepo/image")
```

cr_buildstep_edit	<i>Modify an existing buildstep with new parameters</i>
-------------------	---

Description

Useful for editing existing buildsteps

Usage

```
cr_buildstep_edit(x, ...)
```

Arguments

x	A buildstep created previously
...	Arguments passed on to cr_buildstep
name	name of docker image to call appended to prefix
args	character vector of arguments
prefix	prefixed to name - set to "" to suppress. Will be suppressed if name starts with gcr.io or *-docker.pkg.dev
entrypoint	change the entrypoint for the docker container
dir	The directory to use, relative to /workspace e.g. /workspace/deploy/
id	Optional id for the step
env	Environment variables for this step. A character vector for each assignment

volumes volumes to connect and write to
 waitFor Whether to wait for previous buildsteps to complete before running.
 Default it will wait for previous step.
 secretEnv A list of secrets stored in Secret Manager referred to in args via a
 \$\$var

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
package_build <- system.file("cloudbuild/cloudbuild.yaml",
  package = "googleCloudRunner"
)
build <- cr_build_make(package_build)
build
cr_buildstep_extract(build, step = 1)
cr_buildstep_extract(build, step = 2)

edit_me <- cr_buildstep_extract(build, step = 2)
cr_buildstep_edit(edit_me, name = "blah")
cr_buildstep_edit(edit_me, name = "gcr.io/blah")
cr_buildstep_edit(edit_me, args = c("blah1", "blah2"), dir = "meh")

# to edit multiple buildsteps at once
bs <- c(cr_buildstep_extract(build, 1), cr_buildstep_extract(build, 2))
lapply(bs, function(x) cr_buildstep_edit(list(x), dir = "blah")[[1]])
```

cr_buildstep_extract *Extract a buildstep from a Build object*

Description

Useful if you have a step from an existing cloudbuild.yaml you want in another

Usage

```
cr_buildstep_extract(x, step = NULL)
```

Arguments

x	A Build object
step	The numeric step number to extract

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
package_build <- system.file("cloudbuild/cloudbuild.yaml",
  package = "googleCloudRunner"
)
build <- cr_build_make(package_build)
build
cr_buildstep_extract(build, step = 1)
cr_buildstep_extract(build, step = 2)
```

cr_buildstep_gcloud *A buildstep template for gcloud*

Description

This enables an optimised version of gcloud docker for your buildstep such as `gcr.io/google.com/cloudsdktool/cloud-s`

Usage

```
cr_buildstep_gcloud(component = c("gcloud", "bq", "gsutil", "kubectl"), ...)

cr_buildstep_gsutil(...)

cr_buildstep_bq(...)

cr_buildstep_kubectl(...)
```

Arguments

component	What gcloud service you need, such as "gcloud", "bq" or "gsutil"
...	Arguments passed on to cr_buildstep
name	name of docker image to call appended to prefix
args	character vector of arguments
prefix	prefixed to name - set to "" to suppress. Will be suppressed if name starts with gcr.io or *-docker.pkg.dev
entrypoint	change the entrypoint for the docker container
dir	The directory to use, relative to /workspace e.g. /workspace/deploy/
id	Optional id for the step
env	Environment variables for this step. A character vector for each assignment

volumes volumes to connect and write to
 waitFor Whether to wait for previous buildsteps to complete before running.
 Default it will wait for previous step.
 secretEnv A list of secrets stored in Secret Manager referred to in args via a
 \$\$var

See Also

<https://github.com/GoogleCloudPlatform/cloud-builders/tree/master/gcloud>

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#),
[cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gitsetup\(\)](#),
[cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#),
[cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#),
[cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

cr_buildstep_gitsetup *Create a build step for authenticating with Git*

Description

This creates steps to configure git to use an ssh created key.

This creates steps to use git with an ssh created key.

Usage

```
cr_buildstep_gitsetup(secret, post_setup = NULL)

cr_buildstep_git(
  git_args = c("clone", "git@github.com:[GIT-USERNAME]/[REPOSITORY]", "."),
  ...
)

git_volume()
```

Arguments

secret	The name of the secret on Google Secret Manager for the git ssh private key
post_setup	Steps that occur after git setup
git_args	The arguments to send to git
...	Further arguments passed in to cr_buildstep

Details

The ssh private key should be uploaded to Google Secret Manager first

cr_buildstep must come after cr_buildstep_gitsetup

Use git_volume to add the git credentials folder to other buildsteps

See Also

[Accessing private GitHub repositories using Cloud Build \(google article\)](#)

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")

# assumes you have previously saved git ssh key called "github-ssh"
cr_build_yaml(
  steps = c(
    cr_buildstep_gitsetup("github-ssh"),
    cr_buildstep_git(c(
      "clone",
      "git@github.com:github_name/repo_name"
    ))
  )
)
```

cr_buildstep_mailgun *Send an email in a Cloud Build step via MailGun.org*

Description

This uses Mailgun to send emails. It calls an R script that posts the message to MailGuns API.

Usage

```
cr_buildstep_mailgun(
  message,
  to,
  subject,
  from,
  mailgun_url = "$_MAILGUN_URL",
  mailgun_key = "$_MAILGUN_KEY",
  ...
)
```

Arguments

message	The message markdown
to	to email

subject	subject email
from	from email
mailgun_url	The Mailgun API base URL. Default assumes you set this in Build substitution macros
mailgun_key	The Mailgun API key. Default assumes you set this in Build substitution macros
...	Other arguments passed to cr_buildstep_r

Details

Requires an account at Mailgun: <https://mailgun.com> Pre-verification you can only send to a whitelist of emails you configure - see Mailgun website for details.

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")
mailgun_url <- "https://api.mailgun.net/v3/sandboxXXX.mailgun.org"
mailgun_key <- "key-XXXX"
## Not run:
# assumes you have verified the email
cr_build(
  cr_build_yaml(
    steps = cr_buildstep_mailgun(
      "Hello from Cloud Build",
      to = "me@verfied_email.com",
      subject = "Hello",
      from = "googleCloudRunner@example.com"
    ),
    substitutions = list(
      `MAILGUN_URL` = mailgun_url,
      `MAILGUN_KEY` = mailgun_key
    )
  )
)
## End(Not run)
```

`cr_buildstep_nginx_setup`*Setup nginx for Cloud Run in a buildstep*

Description

Setup nginx for Cloud Run in a buildstep

Usage

```
cr_buildstep_nginx_setup(html_folder, ...)
```

Arguments

<code>html_folder</code>	The folder that will hold the HTML for Cloud Run This uses a premade bash script that sets up a Docker container ready for Cloud Run running nginx
<code>...</code>	Other arguments passed to cr_buildstep_bash

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")
cr_region_set("europe-west1")

html_folder <- "my_html"
run_image <- "gcr.io/my-project/my-image-for-cloudrun"
cr_build_yaml(
  steps = c(
    cr_buildstep_nginx_setup(html_folder),
    cr_buildstep_docker(run_image, dir = html_folder),
    cr_buildstep_run(
      name = "running-nginx",
      image = run_image,
      concurrency = 80
    )
  )
)
```

 cr_buildstep_packagetests

Do R package tests and upload to Codecov

Description

This lets you run R package tests and is intended to be used in a trigger when you push to a repository so you can monitor code quality.

Usage

```
cr_buildstep_packagetests(
  test_script = NULL,
  codecov_script = NULL,
  codecov_token = "$CODECOV_TOKEN",
  build_image = "gcr.io/gcer-public/package-tools:latest",
  env = c("NOT_CRAN=true")
)
```

Arguments

test_script	The script that will call rmdcheck to perform tests. If NULL a default script is used in <code>system.file("r_buildsteps", "devtools_tests.R", package="googlecloudrunner")</code>
codecov_script	The script that will call codecov to perform coverage. If NULL a default script is used in <code>system.file("r_buildsteps", "codecov_tests.R", package="googleCloudRunner")</code>
codecov_token	If using codecov , supply your codecov token here.
build_image	The docker image that will be used to run the R code for the test scripts
env	Environment arguments to be set during the test script runs

Details

If using [codecov](#), these environment arguments are added to aid with the [codecoverage](#):

```
* "CODECOV_TOKEN=$CODECOV_TOKEN" * "GCB_PROJECT_ID=$PROJECT_ID" * "GCB_BUILD_ID=$BUILD_ID"
* "GCB_COMMIT_SHA=$COMMIT_SHA" * "GCB_REPO_NAME=$REPO_NAME" * "GCB_BRANCH_NAME=$BRANCH_NAME"
* "GCB_TAG_NAME=$TAG_NAME" * "GCB_HEAD_BRANCH=$HEAD_BRANCH" * "GCB_BASE_BRANCH=$BASE_BRANCH"
* "GCB_HEAD_REPO_URL=$HEAD_REPO_URL" * "GCB_PR_NUMBER=$PR_NUMBER"
```

See Also

<https://docs.codecov.com/reference>

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_buildstep_packagetests()
```

```
cr_buildstep_pkgdown Create buildsteps for deploying an R pkgdown website to GitHub
```

Description

Create buildsteps for deploying an R pkgdown website to GitHub

Usage

```
cr_buildstep_pkgdown(
  github_repo,
  git_email,
  secret,
  env = NULL,
  build_image = "gcr.io/gcer-public/packagetools:latest",
  post_setup = NULL,
  post_clone = NULL
)
```

Arguments

github_repo	The GitHub repo to deploy pkgdown website from and to.
git_email	The email the git commands will be identifying as
secret	The name of the secret on Google Secret Manager for the git ssh private key
env	A character vector of env arguments to set for all steps
build_image	A docker image with pkgdown installed
post_setup	Steps that occur after git setup
post_clone	A cr_buildstep that occurs after the repo is cloned

Details

Its convenient to set some of the above via [Build](#) macros, such as `github_repo=$_GITHUB_REPO` and `git_email=$_BUILD_EMAIL` in the Build Trigger web UI

To commit the website to git, [cr_buildstep_gitsetup](#) is used for which you will need to add your git ssh private key to Google Secret Manager

The R package is installed via [install](#) before running [build_site](#)

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```

cr_project_set("my-project")
cr_bucket_set("my-bucket")

# set github repo directly to write it out via cr_build_write()
cr_buildstep_pkgdown("MarkEdmondson1234/googleCloudRunner",
  git_email = "cloudbuild@google.com",
  secret = "github-ssh"
)

# github repo set via build trigger macro _GITHUB_REPO
cr_buildstep_pkgdown("$_GITHUB_REPO",
  git_email = "cloudbuild@google.com",
  secret = "github-ssh"
)

# example including environment arguments for pkgdown build step
cr_buildstep_pkgdown("$_GITHUB_REPO",
  git_email = "cloudbuild@google.com",
  secret = "github-ssh",
  env = c("MYVAR=$_MY_VAR", "PROJECT=$_PROJECT_ID")
)

```

cr_buildstep_r

Run an R script in a Cloud Build R step

Description

Helper to run R code within build steps, from either an existing local R file or within the source of the build.

Usage

```

cr_buildstep_r(
  r,
  name = "r-base",
  r_source = c("local", "runtime"),
  prefix = "rocker/",
  escape_dollar = TRUE,
  rscript_args = NULL,
  r_cmd = c("Rscript", "R"),
  ...
)

```

Arguments

r R code to run or a file containing R code ending with .R, or the gs:// location on Cloud Storage of the R file you want to run

name	The docker image that will run the R code, usually from rocker-project.org
r_source	Whether the R code will be from a runtime file within the source or at build time copying over from a local R file in your session
prefix	prefixed to name - set to "" to suppress. Will be suppressed if name starts with gcr.io or *-docker.pkg.dev
escape_dollar	Default TRUE. This will turn \$ into \$\$ within the script to avoid them being recognised as Cloud Build variables. Turn this off if you want that behaviour (e.g. my_project="\$PROJECT_ID")
rscript_args	Optional arguments for the R script run by Rscript.
r_cmd	should 'Rscript' be run or 'R'?
...	Other arguments passed to cr_buildstep

Details

If `r_source="runtime"` then `r` should be the location of that file within the source or image that will be run by the R code from image

If `r_source="local"` then it will copy over from a character string or local file into the build step directly.

If the R code location starts with `gs://` then an extra buildstep will be added that will download the R script from that location then run it as per `r_source="runtime"`. This will consequently override your setting of `r_source`

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")

# create an R buildstep inline
cr_buildstep_r(c("paste('1+1=', 1+1)", "sessionInfo()"))
## Not run:

# create an R buildstep from a local file
cr_buildstep_r("my-r-file.R")

# create an R buildstep from a file within the source of the Build
cr_buildstep_r("inst/schedule/schedule.R", r_source = "runtime")

# create an R buildstep with Rscript arguments and use a large
# machine with 32 cores
```

```

## create storage source
storage_source <- cr_build_upload_gcs(
  "my-r-script.R"
)
## create the buildstep with the R script
step1 <- cr_buildstep_r("deploy/my-r-script.R",
  r_source = "runtime",
  rscript_args = c("args_1=<args1>", "args_2=<args_2>")
)

## run the script on Cloud Build
cr_build(
  cr_build_yaml(
    steps = step1
  ),
  source = storage_source,
  options = list(machineType = "E2_HIGHCPU_32")
)

## End(Not run)
# use a different Rocker image e.g. rocker/verse
cr_buildstep_r(c(
  "library(dplyr)",
  "mtcars %>% select(mpg)",
  "sessionInfo()"
),
name = "verse"
)

# use your own R image with custom R
my_r <- c("devtools::install()", "pkgdown::build_site()")
br <- cr_buildstep_r(my_r, name = "gcr.io/gcr-public/packagetools:latest")

```

cr_buildstep_run *Create buildsteps to deploy to Cloud Run*

Description

Create buildsteps to deploy to Cloud Run

Usage

```

cr_buildstep_run(
  name,
  image,
  allowUnauthenticated = TRUE,
  region = cr_region_get(),
  concurrency = 80,
  port = NULL,
  max_instances = "default",

```

```

    memory = "256Mi",
    cpu = 1,
    env_vars = NULL,
    gcloud_args = NULL,
    ...
)

```

Arguments

name	Name for deployment on Cloud Run
image	The name of the image to create or use in deployment - gcr.io
allowUnauthenticated	TRUE if can be reached from public HTTP address. If FALSE will configure a service-email called (name)-cloudrun-invoker@(project-id).iam.gserviceaccount.com
region	The endpoint region for deployment
concurrency	How many connections each container instance can serve. Can be up to 80.
port	Container port to receive requests at. Also sets the \$PORT environment variable. Must be a number between 1 and 65535, inclusive. To unset this field, pass the special value "default".
max_instances	the desired maximum number of container instances. "default" is 1000, you can get more if you requested a quota instance. For Shiny instances on Cloud Run, this needs to be 1.
memory	The format for size is a fixed or floating point number followed by a unit: G, M, or K corresponding to gigabyte, megabyte, or kilobyte, respectively, or use the power-of-two equivalents: Gi, Mi, Ki corresponding to gibibyte, mebibyte or kibibyte respectively. The default is 256Mi
cpu	1 or 2 CPUs for your instance
env_vars	Environment arguments passed to the Cloud Run container at runtime. Distinct from env that run at build time.
gcloud_args	a character string of arguments that can be sent to the gcloud command not covered by other parameters of this function
...	passed on to cr_buildstep

See Also

Docs for [gcloud run deploy this buildstep invokes](#)

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

cr_buildstep_secret *Create a buildstep for using Secret Manager*

Description

This is the preferred way to manage secrets for files, rather than [cr_buildstep_decrypt](#), as it stores the encrypted file in the cloud rather than in your project workspace. For single environment values, [cr_build_yaml_secrets](#) may be more suitable.

Usage

```
cr_buildstep_secret(
  secret,
  decrypted,
  version = "latest",
  binary_mode = FALSE,
  ...
)
```

Arguments

secret	The secret data name in Secret Manager
decrypted	The name of the file the secret will be decrypted into
version	The version of the secret
binary_mode	Should the file be treated in binary/raw format?
...	Other arguments sent to cr_buildstep_bash

Details

This is for downloading encrypted files from Google Secret Manager. You will need to add the Secret Accessor Cloud IAM role to the Cloud Build service account to use it. Once you have uploaded your secret file and named it, it is available for Cloud Build to use.

See Also

How to set up secrets using [Secret Manager](#)

[cr_build_yaml_secrets](#) let you directly support environment arguments in the buildsteps

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests\(\)](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
cr_buildstep_secret("my_secret", decrypted = "/workspace/secret.json")
```

cr_buildstep_slack *Send a Slack message to a channel from a Cloud Build step*

Description

This uses <https://github.com/technosophos/slack-notify> to send Slack messages

Usage

```
cr_buildstep_slack(  
  message,  
  title = "CloudBuild - $BUILD_ID",  
  channel = NULL,  
  username = "googleCloudRunnerBot",  
  webhook = "$_SLACK_WEBHOOK",  
  icon = NULL,  
  colour = "#efefef"  
)
```

Arguments

message	The body of the message
title	The title of the message
channel	The channel to send the message to (if omitted, use Slack-configured default)
username	The name of the sender of the message. Does not need to be a "real" username
webhook	The Slack webhook to send to
icon	A URL to an icon (squares between 512px and 2000px)
colour	The RGB colour for message formatting

Details

You will need to set up a Slack webhook first, via this [Slack guide on using incoming webhooks](#).

Once set, the default is to set this webhook to a Build macro called `_SLACK_WEBHOOK`, or supply it to the webhook argument.

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_targets\(\)](#), [cr_buildstep\(\)](#)

Examples

```
# send a message to googleAuthRverse Slack
webhook <-
  "https://hooks.slack.com/services/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"
cr_buildstep_slack("Hello Slack", webhook = webhook)
## Not run:

bs <- cr_build_yaml(steps = cr_buildstep_slack("Hello Slack"))

cr_build(bs, substitutions = list(`_SLACK_WEBHOOK` = webhook))

## End(Not run)
```

cr_buildstep_targets *Buildstep to run a targets pipeline on Cloud Build*

Description

This is a buildstep to help upload a targets pipeline, see [cr_build_targets](#) for examples and suggested workflow

Usage

```
cr_buildstep_targets(
  task_args = NULL,
  tar_make = "targets::tar_make()",
  task_image = "gcr.io/gcer-public/targets",
  id = "target pipeline"
)

cr_buildstep_targets_setup(bucket_folder)

cr_buildstep_targets_tear_down(bucket_folder, last_id = NULL)
```

Arguments

task_args	If not NULL, a named list of additional arguments to send to cr_buildstep_r when its executing the tar_make command (such as environment arguments or wait_for ids)
tar_make	The R script that will run in the tar_make() step. Modify to include custom settings
task_image	An existing Docker image that will be used to run your targets workflow after the targets meta has been downloaded from Google Cloud Storage
id	The id of the buildstep. In linkcr_buildstep_targets_multi this is used along with wait_for to determine the order of execution

bucket_folder	The Google Cloud Storage bucket and folder the target metadata will be saved to, e.g. gs://my-bucket/my_target_project You can also pass in build substitution variables such as "\${_MY_BUCKET}".
last_id	The final buildstep that needs to complete before the upload. If left NULL then will default to the last tar_target step.

See Also

Other Cloud Buildsteps: [cr_buildstep_bash\(\)](#), [cr_buildstep_decrypt\(\)](#), [cr_buildstep_df\(\)](#), [cr_buildstep_docker\(\)](#), [cr_buildstep_edit\(\)](#), [cr_buildstep_extract\(\)](#), [cr_buildstep_gcloud\(\)](#), [cr_buildstep_gitsetup\(\)](#), [cr_buildstep_mailgun\(\)](#), [cr_buildstep_nginx_setup\(\)](#), [cr_buildstep_packagetests](#), [cr_buildstep_pkgdown\(\)](#), [cr_buildstep_run\(\)](#), [cr_buildstep_r\(\)](#), [cr_buildstep_secret\(\)](#), [cr_buildstep_slack\(\)](#), [cr_buildstep\(\)](#)

cr_buildtrigger	<i>Create a new BuildTrigger</i>
-----------------	----------------------------------

Description

Build Triggers are a way to have your builds respond to various events, most commonly a git commit or a pubsub event.

Usage

```
cr_buildtrigger(
  build,
  name,
  trigger,
  description = paste("cr_buildtrigger: ", Sys.time()),
  disabled = FALSE,
  substitutions = NULL,
  ignoredFiles = NULL,
  includedFiles = NULL,
  trigger_tags = NULL,
  projectId = cr_project_get(),
  sourceToBuild = NULL,
  overwrite = FALSE
)
```

Arguments

build	The build to trigger created via cr_build_make , or the file location of the cloud-build.yaml within the trigger source
name	User assigned name of the trigger
trigger	The trigger source created via cr_buildtrigger_repo or a pubsub trigger made with cr_buildtrigger_pubsub or a webhook trigger made with cr_buildtrigger_webhook

description	Human-readable description of this trigger
disabled	If true, the trigger will never result in a build
substitutions	A named list of Build macro variables
ignoredFiles	ignored_files and included_files are file glob matches extended with support for "**".
includedFiles	If any of the files altered in the commit pass the ignored_files
trigger_tags	Tags for the buildtrigger listing
projectId	ID of the project for which to configure automatic builds
sourceToBuild	A cr_buildtrigger_repo object (but no regex allowed for branch or tag) This field is currently only used by Webhook, Pub/Sub, Manual, and Cron triggers and is the source of the build will execute upon.
overwrite	If TRUE will overwrite an existing trigger with the same name

Details

Any source specified in the build will be overwritten to use the trigger as a source (GitHub or Cloud Source Repositories)

If you want multiple triggers for a build, then duplicate the build and create another build under a different name but with a different trigger. Its easier to keep track of.

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")
cloudbuild <- system.file("cloudbuild/cloudbuild.yaml",
  package = "googleCloudRunner"
)
bb <- cr_build_make(cloudbuild)

# repo hosted on GitHub
gh_trigger <- cr_buildtrigger_repo("MarkEdmondson1234/googleCloudRunner")

# repo mirrored to Cloud Source Repositories
cs_trigger <- cr_buildtrigger_repo("github-markedmondson1234-googlecloudrunner",
  type = "cloud_source"
)
## Not run:
# build with in-line build code
cr_buildtrigger(bb, name = "bt-github-inline", trigger = gh_trigger)

# build with in-line build code using Cloud Source Repository
cr_buildtrigger(bb, name = "bt-github-inline", trigger = cs_trigger)
```

```
# build pointing to cloudbuild.yaml within the GitHub repo
cr_buildtrigger("inst/cloudbuild/cloudbuild.yaml",
  name = "bt-github-file", trigger = gh_trigger
)

# build with repo mirror from file
cr_buildtrigger("inst/cloudbuild/cloudbuild.yaml",
  name = "bt-cs-file", trigger = cs_trigger
)

## End(Not run)

# creating build triggers that respond to pubsub events
## Not run:
# create a pubsub topic either in webUI or via library(googlePubSubR)
library(googlePubSubR)
pubsub_auth()
topics_create("test-topic")

## End(Not run)

# create build trigger that will work from pub/subscription
pubsub_trigger <- cr_buildtrigger_pubsub("test-topic")
pubsub_trigger
## Not run:
# create the build trigger with in-line build
cr_buildtrigger(bb, name = "pubsub-triggered", trigger = pubsub_trigger)
# create scheduler that calls the pub/sub topic

cr_schedule("cloud-build-pubsub",
  "15 5 * * *",
  pubsubTarget = cr_schedule_pubsub("test-topic")
)

## End(Not run)

# create a pubsub trigger that uses github as a source of code to build upon
gh <- cr_buildtrigger_repo("MarkEdmondson1234/googleCloudRunner")
blist <- cr_build_make(cr_build_yaml(cr_buildstep_r('list.files()')))

## Not run:
cr_buildtrigger(blist,
  name = "pubsub-triggered-github-source",
  trigger = pubsub_trigger,
  sourceToBuild = gh)

## End(Not run)
```

Description

This lets you use the response from [cr_buildtrigger_get](#) for an existing buildtrigger to copy over settings to a new buildtrigger.

Usage

```
cr_buildtrigger_copy(
  buildTrigger,
  filename = NULL,
  name = NULL,
  tags = NULL,
  build = NULL,
  ignoredFiles = NULL,
  github = NULL,
  sourceToBuild = NULL,
  substitutions = NULL,
  includedFiles = NULL,
  disabled = NULL,
  triggerTemplate = NULL,
  projectId = cr_project_get()
)
```

Arguments

buildTrigger	A CloudBuildTriggerResponse object from cr_buildtrigger_get
filename	Path, from the source root, to a file whose contents is used for the build
name	User assigned name of the trigger
tags	Tags for annotation of a 'BuildTrigger'
build	Contents of the build template
ignoredFiles	ignored_files and included_files are file glob matches extended with support for "**".
github	a GitHubEventsConfig object - mutually exclusive with triggerTemplate
sourceToBuild	A cr_buildtrigger_repo object (but no regex allowed for branch or tag) This field is currently only used by Webhook, Pub/Sub, Manual, and Cron triggers and is the source of the build will execute upon.
substitutions	A named list of Build macro variables
includedFiles	If any of the files altered in the commit pass the ignored_files
disabled	If true, the trigger will never result in a build
triggerTemplate	a RepoSource object - mutually exclusive with github
projectId	The projectId you are copying to

Details

Overwrite settings for the build trigger you are copying by supplying it as one of the other arguments from [BuildTrigger](#).

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

Examples

```
## Not run:
# copying a GitHub buildtrigger across projects and git repos
bt <- cr_buildtrigger_get("my-trigger", projectId = "my-project-1")

# a new GitHub project
gh <- GitHubEventsConfig("username/new-repo",
  event = "push",
  branch = "^master$"
)

# give 'Cloud Build Editor' role to your service auth key in new project
# then copy configuration across
cr_buildtrigger_copy(bt, github = gh, projectId = "my-new-project")

## End(Not run)
```

cr_buildtrigger_delete

Deletes a 'BuildTrigger' by its project ID and trigger ID. This API is experimental.

Description

Deletes a 'BuildTrigger' by its project ID and trigger ID. This API is experimental.

Usage

```
cr_buildtrigger_delete(triggerId, projectId = cr_project_get())
```

Arguments

triggerId	ID of the 'BuildTrigger' to get or a BuildTriggerResponse object
projectId	ID of the project that owns the trigger

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

cr_buildtrigger_edit *Updates a 'BuildTrigger' by its project ID and trigger ID. This API is experimental.*

Description

Seems not to work at the moment (issue #16)

Usage

```
cr_buildtrigger_edit(BuildTrigger, triggerId, projectId = cr_project_get())
```

Arguments

BuildTrigger	The BuildTrigger object to update to
triggerId	ID of the 'BuildTrigger' to edit or a previous BuildTriggerResponse object that will be edited
projectId	ID of the project that owns the trigger

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

Examples

```
## Not run:

github <- GitHubEventsConfig("MarkEdmondson1234/googleCloudRunner",
  branch = "master"
)
bt2 <- cr_buildtrigger("trig2",
  trigger = github,
  build = "inst/cloudbuild/cloudbuild.yaml"
)
bt3 <- BuildTrigger(
  filename = "inst/cloudbuild/cloudbuild.yaml",
  name = "edited1",
  tags = "edit",
  github = github,
  disabled = TRUE,
  description = "edited trigger"
)

edited <- cr_buildtrigger_edit(bt3, triggerId = bt2)

## End(Not run)
```

cr_buildtrigger_get *Returns information about a 'BuildTrigger'.This API is experimental.*

Description

Returns information about a 'BuildTrigger'.This API is experimental.

Usage

```
cr_buildtrigger_get(triggerId, projectId = cr_project_get())
```

Arguments

triggerId	ID of the 'BuildTrigger' to get or a BuildTriggerResponse object
projectId	ID of the project that owns the trigger

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

cr_buildtrigger_list *Lists existing 'BuildTrigger's.This API is experimental.*

Description

Lists existing 'BuildTrigger's.This API is experimental.

Usage

```
cr_buildtrigger_list(projectId = cr_project_get())
```

Arguments

projectId	ID of the project for which to list BuildTriggers
-----------	---

See Also

[cr_build_list](#) which merges with this list

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

Examples

```
## Not run:  
  
cr_buildtrigger_list()  
  
## End(Not run)
```

```
cr_buildtrigger_pubsub  
    Create a buildtrigger pub/sub object
```

Description

Create a trigger from a Pub/Sub topic

Usage

```
cr_buildtrigger_pubsub(  
  topic,  
  serviceAccountEmail = NULL,  
  projectId = cr_project_get()  
)
```

Arguments

topic	The name of the Cloud Pub/Sub topic or a Topic object from topics_get
serviceAccountEmail	Service account that will make the push request.
projectId	The GCP project the topic is created within

Details

When using a PubSub trigger, you can use data within your PubSub message in substitution variables within the build. The data from pubsub is available in the variable value: `$(body.message.data.x)` when x is a field in the pubsub message.

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

Examples

```

# create build object
cloudbuild <- system.file("cloudbuild/cloudbuild_substitutions.yml",
  package = "googleCloudRunner"
)
the_build <- cr_build_make(cloudbuild)

# this build includes substitution variables that read from pubsub message var1
the_build

# using googlePubSubR to create pub/sub topic if needed
## Not run:
library(googlePubsubR)
pubsub_auth()
topics_create("test-topic")

## End(Not run)

# create build trigger that will work from pub/subscription
pubsub_trigger <- cr_buildtrigger_pubsub("test-topic")
pubsub_trigger
## Not run:
cr_buildtrigger(the_build, name = "pubsub-triggered-subs", trigger = pubsub_trigger)

## End(Not run)

# make base64 encoded json for pubsub
library(jsonlite)
library(googlePubsubR)

# the message with the var1 that will be passed into the Cloud Build via substitution
message <- toJSON(list(var1 = "hello mum"))

# turning into JSON and encoding
send_me <- msg_encode(message)
## Not run:
# send a PubSub message with the encoded data message
topics_publish(PubsubMessage(send_me), "test-topic")

# did it work? After a while should see logs if it did
cr_buildtrigger_logs("pubsub-triggered-subs")

## End(Not run)

```

cr_buildtrigger_repo *Create a buildtrigger repo object*

Description

Create a repository trigger object for use in build triggers

Usage

```

cr_buildtrigger_repo(
  repo_name,
  branch = ".*",
  tag = NULL,
  type = c("github", "cloud_source"),
  github_secret = NULL,
  ...
)

```

Arguments

repo_name	Either the GitHub username/repo_name or the Cloud Source repo_name
branch	Regex of the branches that will trigger a build. Ignore if tag is not NULL
tag	Regex of tags that will trigger a build
type	Whether trigger is GitHub or Cloud Source repository
github_secret	If you need to pull from a private GitHub repo, add the github secret from Google Secret Manager which will be used via cr_buildstep_secret
...	Other arguments passed to either GitHubEventsConfig or RepoSource

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

cr_buildtrigger_run *Runs a 'BuildTrigger' at a particular source revision.*

Description

Runs a 'BuildTrigger' at a particular source revision.

Usage

```
cr_buildtrigger_run(triggerId, RepoSource, projectId = cr_project_get())
```

Arguments

triggerId	ID of the 'BuildTrigger' to get or a BuildTriggerResponse object
RepoSource	The RepoSource object to pass to this method
projectId	ID of the project

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

cr_buildtrigger_webhook

Create a buildtrigger webhook object

Description

Create a trigger from a webhook

Usage

```
cr_buildtrigger_webhook(secret)
```

Arguments

secret Resource name for the secret required as a URL parameter.

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [GitHubEventsConfig\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger\(\)](#)

cr_build_artifacts

Download artifacts from a build

Description

If a completed build includes artifact files this downloads them to local files

Usage

```
cr_build_artifacts(  
  build,  
  download_folder = getwd(),  
  overwrite = FALSE,  
  path_regex = NULL  
)
```

Arguments

build	A Build object that includes the artifact location
download_folder	Where to download the artifact files
overwrite	Whether to overwrite existing local data
path_regex	A regex of files to fetch from the artifact bucket location. This is due to not being able to support the path globs

Details

If your artifacts are using file glob (e.g. myfolder/**) to decide which workspace files are uploaded to Cloud Storage, you will need to create a path_regex of similar functionality ("^myfolder/"). This is not needed if you use absolute path names such as "myfile.csv"

See Also

[Storing images and artifacts](#)

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```
## Not run:
#' r <- "write.csv(mtcars,file = 'artifact.csv')"
ba <- cr_build_yaml(
  steps = cr_buildstep_r(r),
  artifacts = cr_build_yaml_artifact("artifact.csv", bucket = "my-bucket")
)
ba

build <- cr_build(ba)
built <- cr_build_wait(build)

cr_build_artifacts(built)

## End(Not run)
```

cr_build_list

Lists the build

Description

Get a list of builds within your project

cr_build_list_filter outputs valid filters for cr_build_list's filter argument

Usage

```

cr_build_list(
  filter = NULL,
  projectId = cr_project_get(),
  pageSize = 1000,
  data_frame_output = TRUE
)

cr_build_list_filter(
  field,
  operator = c("=", "!=", ">", ">=", "<", "<="),
  value
)

```

Arguments

filter	Text filter for the list - use <code>cr_build_list_filter()</code> or a raw string
projectId	ID of the project
pageSize	How many builds to fetch per page
data_frame_output	If TRUE will output a data.frame of a subset of info from the builds, merged with the list of triggers from cr_buildtrigger_list . Set to FALSE to return a list of Build objects similar to output from cr_build_status
field	The field you want to filter on. Will validate.
operator	The type of comparison for the filter
value	The value for the filter's field. Auto-formats POSIXct and Date objects

Details

When `data_frame_output=TRUE` results are sorted with the latest `buildStartTime` in the first row

If filter is NULL then this will return all historic builds. To use filters, ensure you use "" and not '' to quote the fields e.g. 'status!="SUCCESS"' and 'status="SUCCESS"' - see [Filtering build results docs](#). `cr_build_list_filter` helps you construct valid filters. More complex filters can be done using a combination of [paste](#) and `cr_build_list_filter()` - see examples

Use [POSIXct](#) via functions like [Sys.time](#) to have them formatted into valid timestamps for time related fields, or [Date](#) objects via functions like [Sys.Date](#)

See Also

<https://cloud.google.com/build/docs/api/reference/rest/v1/projects.builds/list>

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```

## Not run:

# merge with buildtrigger list
cr_build_list()

# output a list of build objects
cr_build_list(data_frame_output = FALSE)

# output a list of builds that failed using raw string
cr_build_list('status!="SUCCESS"')

# output builds for a specific trigger using raw string
cr_build_list('trigger_id="af2c7ddc-e4eb-4170-b938-a4babb53bac6"')

# use cr_build_list_filter to help validate filters
failed_builds <- cr_build_list_filter("status", "!=", "SUCCESS")
cr_build_list(failed_builds)

f1 <- cr_build_list_filter(
  "trigger_id", "=", "af2c7ddc-e4eb-4170-b938-a4babb53bac6"
)
cr_build_list(f1)

# do AND (and other) filters via paste() and cr_build_list_filter()
cr_build_list(paste(f1, "AND", failed_builds))

# builds in last 5 days
last_five <- cr_build_list_filter("create_time", ">", Sys.Date() - 5)
cr_build_list(last_five)

# builds in last 60 mins
last_hour <- cr_build_list_filter("create_time", ">", Sys.time() - 3600)
cr_build_list(last_hour)

# builds for this package's buildtrigger
gcr_trigger_id <- "0a3cade0-425f-4adc-b86b-14cde51af674"
gcr_bt <- cr_build_list_filter(
  "trigger_id",
  value = gcr_trigger_id
)
gcr_builds <- cr_build_list(gcr_bt)

# get logs for last build
last_build <- gcr_builds[1, ]
last_build_logs <- cr_build_logs(log_url = last_build$bucketLogUrl)
tail(last_build_logs, 10)

## End(Not run)

```

`cr_build_logs`*Download logs from a Cloud Build*

Description

This lets you download the logs to your local R session, rather than viewing them in the Cloud Console.

Usage

```
cr_build_logs(built = NULL, log_url = NULL)
```

```
cr_buildtrigger_logs(  
  trigger_name = NULL,  
  trigger_id = NULL,  
  projectId = cr_project_get()  
)
```

Arguments

<code>built</code>	The built object from <code>cr_build_status</code> or <code>cr_build_wait</code>
<code>log_url</code>	You can optionally instead of <code>built</code> provide the direct <code>gs://</code> URI to the log here. It is in the format <code>gs://{{bucket}}/log-{{buildId}}.txt</code>
<code>trigger_name</code>	The trigger name to check, will be used to look up <code>trigger_id</code>
<code>trigger_id</code>	If supplied, <code>trigger_name</code> will be ignored
<code>projectId</code>	The project containing the <code>trigger_id</code>

Details

By default, Cloud Build stores your build logs in a Google-created Cloud Storage bucket. You can view build logs store in the Google-created Cloud Storage bucket, but you cannot make any other changes to it. If you require full control over your logs bucket, store the logs in a user-created Cloud Storage bucket.

See Also

<https://cloud.google.com/build/docs/securing-builds/store-manage-build-logs>

`cr_build_logs_badger` to see logs for a badger created build

Other Cloud Build functions: `Build()`, `RepoSource()`, `Source()`, `StorageSource()`, `cr_build_artifacts()`, `cr_build_list()`, `cr_build_make()`, `cr_build_status()`, `cr_build_targets()`, `cr_build_upload_gcs()`, `cr_build_wait()`, `cr_build_write()`, `cr_build_yaml_artifact()`, `cr_build_yaml_secrets()`, `cr_build_yaml()`, `cr_build()`

Examples

```
## Not run:
s_yaml <- cr_build_yaml(steps = cr_buildstep("gcloud", "version"))
build <- cr_build_make(s_yaml)
built <- cr_build(build)
the_build <- cr_build_wait(built)
cr_build_logs(the_build)
# [1] "starting build \"6ce86e05-b0b1-4070-a849-05ec9020fd3b\""
# [2] ""
# [3] "FETCHSOURCE"
# [4] "BUILD"
# [5] "Already have image (with digest): gcr.io/cloud-builders/gcloud"
# [6] "Google Cloud SDK 325.0.0"
# [7] "alpha 2021.01.22"
# [8] "app-engine-go 1.9.71"
# ...

## End(Not run)
## Not run:

# get your trigger name
ts <- cr_buildtrigger_list()
ts$buildTriggerName

my_trigger <- "package-checks"
last_logs <- cr_buildtrigger_logs(my_trigger)

my_trigger_id <- "0a3cade0-425f-4adc-b86b-14cde51af674"
last_logs <- cr_buildtrigger_logs(trigger_id = my_trigger_id)

## End(Not run)
```

cr_build_make

Make a Cloud Build object out of a cloudbuild.yaml file

Description

This creates a [Build](#) object via the standard cloudbuild.yaml format

Usage

```
cr_build_make(
  yaml,
  source = NULL,
  timeout = NULL,
  images = NULL,
  artifacts = NULL,
  options = NULL,
  substitutions = NULL,
```

```

    availableSecrets = NULL,
    serviceAccount = NULL,
    logsBucket = NULL
  )

```

Arguments

yaml	A Yaml object created from cr_build_yaml or a file location of a .yaml/.yml cloud build file
source	A Source object specifying the location of the source files to build, usually created by cr_build_source
timeout	Amount of time that this build should be allowed to run, to second
images	A list of images to be pushed upon the successful completion of all build
artifacts	Artifacts that may be built via cr_build_yaml_artifact
options	Options to pass to a Cloud Build
substitutions	Substitutions data for 'Build' resource
availableSecrets	Secret Manager objects built by cr_build_yaml_secrets
serviceAccount	service account email to be used for the build
logsBucket	The gs:// location of a bucket to put logs in

See Also

<https://cloud.google.com/build/docs/build-config-file-schema>

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```

cloudbuild <- system.file("cloudbuild/cloudbuild.yaml",
  package = "googleCloudRunner"
)
cr_build_make(cloudbuild)

```

cr_build_schedule_http

Create a Cloud Scheduler HTTP target from a Cloud Build object

Description

This enables Cloud Scheduler to trigger Cloud Builds

Usage

```

cr_build_schedule_http(
  build,
  email = cr_email_get(),
  projectId = cr_project_get()
)

cr_schedule_http(build, email = cr_email_get(), projectId = cr_project_get())

cr_schedule_pubsub(
  topicName,
  PubsubMessage = NULL,
  data = NULL,
  attributes = NULL,
  projectId = cr_project_get()
)

cr_schedule(
  name,
  schedule = NULL,
  httpTarget = NULL,
  pubsubTarget = NULL,
  description = NULL,
  overwrite = FALSE,
  timeZone = Sys.timezone(),
  region = cr_region_get(),
  projectId = cr_project_get()
)

```

Arguments

build	A Build object created via cr_build_make or cr_build
email	The email that will authenticate the job set via cr_email_set
projectId	The GCP project to run within usually set with cr_project_set
topicName	The name of the Cloud Pub/Sub topic or a Topic object from topics_get
PubsubMessage	A PubsubMessage object generated via PubsubMessage . If used, then do not send in 'data' or 'attributes' arguments as will be redundant since this variable will hold the information.
data	The message payload for PubsubMessage . An R object that will be turned into JSON via [jsonlite] and then base64 encoded into the PubSub format.
attributes	Attributes for PubsubMessage .
name	Name to call your scheduled job
schedule	A cron schedule e.g. "15 5 * * *"
httpTarget	A HTTP target object HttpTarget
pubsubTarget	A Pub/Sub target object PubsubTarget such as created via cr_schedule_pubsub

description	Optionally caller-specified in CreateJob or
overwrite	If TRUE and an existing job with the same name exists, will overwrite it with the new parameters
timeZone	Specifies the time zone to be used in interpreting schedule. If set to NULL will be "UTC". Note that some time zones include a provision for daylight savings time.
region	The region usually set with cr_region_set

Details

Ensure you have a service email with [cr_email_set](#) of format `service-{project-number}@gcp-sa-cloudscheduler.iam.` with Cloud Scheduler Service Agent role as per <https://cloud.google.com/scheduler/docs/http-target-auth#add>

You can parametrise builds by sending in values within PubSub. To read the data in the message set a substitution variable that picks up the data. For example `_VAR1=$(body.message.data.var1)`

If your schedule to PubSub fails with a permission error, try turning the Cloud Scheduler API off and on again the Cloud Console, which will refresh the Google permissions.

Value

`cr_schedule_http` returns a [HttpTarget](#) object for use in [cr_schedule](#)

`cr_schedule_pubsub` returns a [PubsubTarget](#) object for use within [cr_schedule](#) or [cr_schedule_build](#)

A `gar_scheduleJob` class object

See Also

<https://cloud.google.com/build/docs/api/reference/rest/v1/projects.builds/create>

[Google Documentation for Cloud Scheduler](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

Examples

```

cloudbuild <- system.file("cloudbuild/cloudbuild.yaml", package = "googleCloudRunner")
build1 <- cr_build_make(cloudbuild)
build1
## Not run:
cr_schedule("cloud-build-test1",
  schedule = "15 5 * * *",
  httpTarget = cr_schedule_http(build1)
)

# a cloud build you would like to schedule
itworks <- cr_build("cloudbuild.yaml", launch_browser = FALSE)

```

```

# once working, pass in the build to the scheduler
cr_schedule("itworks-schedule",
  schedule = "15 5 * * *",
  httpTarget = cr_schedule_http(itworks)
)

## End(Not run)
cr_project_set("my-project")
cr_bucket_set("my-bucket")
cloudbuild <- system.file("cloudbuild/cloudbuild.yaml",
  package = "googleCloudRunner"
)
bb <- cr_build_make(cloudbuild)
## Not run:
# create a pubsub topic either in Google Console webUI or library(googlePubSubR)
library(googlePubSubR)
pubsub_auth()
topics_create("test-topic")

## End(Not run)

# create build trigger that will watch for messages to your created topic
pubsub_trigger <- cr_buildtrigger_pubsub("test-topic")
pubsub_trigger
## Not run:
# create the build trigger with in-line build
cr_buildtrigger(bb, name = "pubsub-triggered", trigger = pubsub_trigger)

# create scheduler that calls the pub/sub topic
cr_schedule("cloud-build-pubsub",
  "15 5 * * *",
  pubsubTarget = cr_schedule_pubsub("test-topic")
)

## End(Not run)

# builds can be also parametrised to respond to parameters within your pubsub topic
# this cloudbuild echos back the value sent in 'var1'
cloudbuild <- system.file("cloudbuild/cloudbuild_substitutions.yml",
  package = "googleCloudRunner"
)
the_build <- cr_build_make(cloudbuild)

# var1 is sent via Pubsub to the buildtrigger
message <- list(var1 = "hello mum")
send_me <- jsonlite::base64_enc(jsonlite::toJSON(message))

# create build trigger that will work from pub/subscription
pubsub_trigger <- cr_buildtrigger_pubsub("test-topic")
## Not run:
cr_buildtrigger(the_build, name = "pubsub-triggered subs", trigger = pubsub_trigger)

```

```

# create scheduler that calls the pub/sub topic with a parameter
cr_schedule("cloud-build-pubsub",
  "15 5 * * *",
  pubsubTarget = cr_schedule_pubsub("test-topic",
    data = send_me
  )
)

## End(Not run)

## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_schedule("test",
  "* * * * *",
  httpTarget = HttpTarget(uri="https://code.markedmondson.me"))

# schedule a cloud build (no source)
build1 <- cr_build_make("cloudbuild.yaml")
cr_schedule("cloud-build-test", "15 5 * * *",
  httpTarget = cr_schedule_http(build1))

# schedule a cloud build with code source from GCS bucket
my_gcs_source <- cr_build_upload_gcs("my_folder", bucket = cr_get_bucket())
build <- cr_build_make("cloudbuild.yaml", source = my_gcs_source)
cr_schedule("cloud-build-test2", "15 5 * * *",
  httpTarget = cr_schedule_http(build))

# update a schedule with the same name - only supply what you want to change
cr_schedule("cloud-build-test2", "12 6 * * *", overwrite=TRUE)

# By default will use the timezone as specified by Sys.timezone() - change
# this by supplying it directly
cr_schedule("timzone-utc", "12 2 * * *", timeZone = "UTC")

# schedule private Cloud Run app
# for authenticated Cloud Run apps - create with allowUnauthenticated=FALSE
cr_deploy_run("my-app", allowUnauthenticated = TRUE)

# deploying via R will help create a service email called my-app-invoker
cr_run_email("my-app")
#> "my-app-invoker@your-project.iam.gserviceaccount.com"

# schedule the endpoint
my_app <- cr_run_get("my-app")

endpoint <- paste0(my_app$status$url, "/fetch_stuff")

app_sched <- cr_run_schedule_http(endpoint, http_method = "GET",
  email = cr_run_email("my-app"))

cr_schedule("my-app-scheduled-1", schedule = "16 4 * * *",
  httpTarget = app_sched)

```

```

# creating build triggers that respond to pubsub events

\dontrun{
# create a pubsub topic either in webUI or via library(googlePubSubR)
library(googlePubSubR)
pubsub_auth()
topics_create("test-topic")
}

# create build trigger that will work from pub/subscription
pubsub_trigger <- cr_buildtrigger_pubsub("test-topic")
pubsub_trigger

\dontrun{
# create the build trigger with in-line build
cr_buildtrigger(bb, name = "pubsub-triggered", trigger = pubsub_trigger)
# create scheduler that calls the pub/sub topic

cr_schedule("cloud-build-pubsub",
            "15 5 * * *",
            pubsubTarget = cr_schedule_pubsub("test-topic"))

}

## End(Not run)

```

cr_build_source

Build a source object

Description

This creates a source object for a build. Note you may instead want to use sources connected to a Build Trigger in which case see [cr_buildtrigger_repo](#)

Usage

```

cr_build_source(x)

## S3 method for class 'gar_RepoSource'
cr_build_source(x)

## S3 method for class 'gar_StorageSource'
cr_build_source(x)

```

Arguments

x A [RepoSource](#) or a [StorageSource](#) object

Examples

```

repo <- RepoSource("my_repo", branchName = "master")
gcs <- StorageSource("my_code.tar.gz", "gs://my-bucket")

cr_build_source(repo)
cr_build_source(gcs)

my_gcs_source <- cr_build_source(gcs)
my_repo_source <- cr_build_source(repo)
## Not run:

build1 <- cr_build("cloudbuild.yaml", source = my_gcs_source)
build2 <- cr_build("cloudbuild.yaml", source = my_repo_source)

## End(Not run)

```

cr_build_status	<i>Returns information about a previously requested build.</i>
-----------------	--

Description

The ‘Build’ that is returned includes its status (such as ‘SUCCESS’, ‘FAILURE’, or ‘WORKING’), and timing information.

Usage

```
cr_build_status(id = .Last.value, projectId = cr_project_get())
```

Arguments

id	ID of the build or a BuildOperationMetadata object
projectId	ID of the project

Value

A gar_Build object [Build](#) or NULL if not found

See Also

<https://cloud.google.com/build/docs/api/reference/rest/v1/projects/builds#Build.Status>

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

cr_build_targets	<i>Set up Google Cloud Build to run a targets pipeline</i>
------------------	--

Description

Creates a Google Cloud Build yaml file so as to execute [tar_make](#) pipelines

Historical runs accumulate in the configured Google Cloud Storage bucket, and the latest output is downloaded before [tar_make](#) executes so up-to-date steps do not rerun.

Usage

```
cr_build_targets(
  buildsteps = cr_buildstep_targets_multi(),
  execute = c("trigger", "now"),
  path = "cloudbuild_targets.yaml",
  local = ".",
  predefinedAcl = "bucketLevel",
  bucket = cr_bucket_get(),
  download_folder = getwd(),
  ...
)

cr_build_targets_artifacts(
  build,
  bucket = cr_bucket_get(),
  target_folder = NULL,
  download_folder = NULL,
  target_subfolder = c("all", "meta", "objects", "user"),
  overwrite = TRUE
)

cr_buildstep_targets_single(
  target_folder = NULL,
  bucket = cr_bucket_get(),
  tar_config = NULL,
  task_image = "gcr.io/gcer-public/targets",
  task_args = NULL,
  tar_make = "targets::tar_make()"
)

cr_buildstep_targets_multi(
  target_folder = NULL,
  bucket = cr_bucket_get(),
  tar_config = NULL,
  task_image = "gcr.io/gcer-public/targets",
  task_args = NULL,
```

```

    last_id = NULL
  )

```

Arguments

buildsteps	Generated buildsteps that create the targets build
execute	Whether to run the Cloud Build now or to write to a file for use within triggers or otherwise
path	File path to write the Google Cloud Build yaml workflow file. Set to NULL to write no file and just return the Yaml object.
local	If executing now, the local folder that will be uploaded as the context for the target build
predefinedAcl	The ACL rules for the object uploaded. Set to "bucketLevel" for buckets with bucket level access enabled
bucket	The Google Cloud Storage bucket the target metadata will be saved to in folder 'target_folder'
download_folder	Set to NULL to overwrite local _target folder: _targets/* otherwise will write to download_folder/_targets/*
...	Arguments passed on to cr_build_yaml , cr_build_yaml
steps	A vector of cr_buildstep
timeout	How long the entire build will run. If not set will be 10mins
logsBucket	Where logs are written. If you don't set this field, Cloud Build will use a default bucket to store your build logs.
options	A named list of options
substitutions	Build macros that will replace entries in other elements
tags	Tags for the build
secrets	A secrets object
images	What images will be build from this cloudbuild
artifacts	What artifacts may be built from this cloudbuild - create via cr_build_yaml_artifact
availableSecrets	What environment arguments from Secret Manager are available to the build - create via cr_build_yaml_secrets
serviceAccount	What service account should the build be run under?
build	A Build object that includes the artifact location
target_folder	Where target metadata will sit within the Google Cloud Storage bucket as a folder. If NULL defaults to RStudio project name or "targets_cloudbuild" if no RStudio project found.
target_subfolder	If you only want to download a specific folder from the _targets/ folder on Cloud Build then specify it here.
overwrite	Whether to overwrite existing local data
tar_config	An R script that will run before <code>targets::tar_make()</code> in the build e.g. <code>"targets::tar_config_set(sc = 'targets/_targets.R')"</code>

task_image	An existing Docker image that will be used to run your targets workflow after the targets meta has been downloaded from Google Cloud Storage
task_args	A named list of additional arguments to send to cr_buildstep_r when its executing the tar_make command (such as environment arguments)
tar_make	The R script that will run in the tar_make() step. Modify to include custom settings such as "script"
last_id	The final buildstep that needs to complete before the upload. If left NULL then will default to the last tar_target step.

Details

Steps to set up your target task in Cloud Build:

- Create your 'targets' workflow.
- Create a Dockerfile that holds the R and system dependencies for your workflow. You can test the image using [cr_deploy_docker](#). Include `library(targets)` dependencies - a Docker image with targets installed is available at gcr.io/gcer-public/targets.
- Run `cr_build_targets` to create the cloudbuild yaml file.
- Run the build via [cr_build](#) or similar. Each build should only recompute outdated targets.
- Optionally create a build trigger via [cr_buildtrigger](#).
- Trigger a build. The first trigger will run the targets pipeline, subsequent runs will only recompute the outdated targets.

Use `cr_build_targets_artifacts` to download the return values of a target Cloud Build, then [tar_read](#) to read the results. You can set the downloaded files as the target store via `targets::tar_config_set(store="_targets", download_folder = "_targets")` to overwrite your local targets store.

Value

A Yaml object as generated by [cr_build_yaml](#) if `execute="trigger"` or the built object if `execute="now"`
`cr_build_targets_artifacts` returns the file path to where the download occurred.

DAGs

If your target workflow has parallel processing steps then leaving this as default `cr_buildstep_targets_multi()` will create a build that uses `waitFor` and `build ids` to create a DAG. Setting this to `cr_buildstep_targets_single()` will be single thread but you can then customise the `targets::tar_make` script. Or add your own custom target buildsteps here using [cr_buildstep_targets](#) - for example you could create the docker environment targets runs within before the main pipeline.

See Also

[cr_buildstep_targets](#) if you want to customise the build

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```

csv_file = tempfile(fileext = ".csv")
write.csv(mtcars, file = csv_file, row.names = FALSE)

targets::tar_script(
  list(
    targets::tar_target(file1,
      csv_file, format = "file"),
    targets::tar_target(input1,
      read.csv(file1)),
    targets::tar_target(result1,
      sum(input1$mpg)),
    targets::tar_target(result2,
      mean(input1$mpg)),
    targets::tar_target(result3,
      max(input1$mpg)),
    targets::tar_target(result4,
      min(input1$mpg)),
    targets::tar_target(merge1,
      paste(result1, result2, result3, result4))
  ),
  ask = FALSE)
have_bucket = tryCatch({cr_bucket_get(); TRUE},
  error = function(err) FALSE)
have_project = tryCatch({cr_project_get(); TRUE},
  error = function(err) FALSE)
if (have_project && have_bucket) {
  bs <- cr_buildstep_targets_multi()
  # only create the yaml
  par_build <- cr_build_targets(bs, path = NULL)
  par_build
  # clean up example
  unlink("_targets.R")
}

## Not run:
# run it immediately in cloud
cr_build_targets(bs, execute="now")

# create a yaml file for use in build triggers
cr_build_targets(bs)

## End(Not run)

```

cr_build_upload_gcs *Create a StorageSource*

Description

This creates a [StorageSource](#) object after uploading to Google Cloud Storage

Usage

```

cr_build_upload_gcs(
  local,
  remote = paste0(local, format(Sys.time(), "%Y%m%d%H%M%S"), ".tar.gz"),
  bucket = cr_bucket_get(),
  predefinedAcl = "bucketOwnerFullControl",
  deploy_folder = "deploy"
)

cr_buildstep_source_move(deploy_folder)

```

Arguments

local	Local directory containing the Dockerfile etc. you wish to deploy
remote	The name of the folder in your bucket
bucket	The Google Cloud Storage bucket to upload to
predefinedAcl	The ACL rules for the object uploaded. Set to "bucketLevel" for buckets with bucket level access enabled
deploy_folder	Which folder to deploy from - this will mean the files uploaded will be by default in /workspace/deploy/

Details

cr_build_upload_gcs copies the files into the deploy_folder in your working directory, then tars it for upload. Files will be available on Cloud Build at /workspace/deploy_folder/*.

cr_buildstep_source_move is a way to move the StorageSource files in /workspace/deploy_folder/* into the root /workspace/* location, which is more consistent with [RepoSource](#) objects or GitHub build triggers created using [cr_buildtrigger_repo](#). This means the same runtime code can run for both sources.

Value

A Source object

See Also

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```

## Not run:
cr_project_set("my-project")
cr_bucket_set("my-bucket")
my_gcs_source <- cr_build_upload_gcs("my_folder")
build1 <- cr_build("cloudbuild.yaml", source = my_gcs_source)

```

```
## End(Not run)
cr_buildstep_source_move("deploy")
```

cr_build_wait	<i>Wait for a Build to run</i>
---------------	--------------------------------

Description

This will repeatedly call [cr_build_status](#) whilst the status is STATUS_UNKNOWN, QUEUED or WORKING

Usage

```
cr_build_wait(op = .Last.value, projectId = cr_project_get())
```

Arguments

op	The operation build object to wait for
projectId	The projectId

Value

A gar_Build object [Build](#)

See Also

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

cr_build_write	<i>Write out a Build object to cloudbuild.yaml</i>
----------------	--

Description

Write out a Build object to cloudbuild.yaml

Usage

```
cr_build_write(x, file = "cloudbuild.yaml", footer = TRUE)
```

Arguments

x	A Build object perhaps created with cr_build_make or cr_build_yaml
file	Where to write the yaml file
footer	should a comment footer with the time be added?

See Also

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```
cr_project_set("my-project")
# write from creating a Yaml object
image <- "gcr.io/my-project/my-image$BUILD_ID"
run_yaml <- cr_build_yaml(
  steps = c(
    cr_buildstep("docker", c("build", "-t", image, ".")),
    cr_buildstep("docker", c("push", image)),
    cr_buildstep("gcloud", c("beta", "run", "deploy", "test1", "--image", image))
  ),
  images = image
)
## Not run:
cr_build_write(run_yaml)

## End(Not run)

# write from a Build object
build <- cr_build_make(system.file("cloudbuild/cloudbuild.yaml",
  package = "googleCloudRunner"
))
## Not run:
cr_build_write(build)

## End(Not run)
```

cr_build_yaml

Create a cloudbuild Yaml object in R

Description

This can be written to disk or used directly with functions such as [cr_build](#)

Usage

```
cr_build_yaml(
  steps,
  timeout = NULL,
  logsBucket = NULL,
  options = NULL,
  substitutions = NULL,
  tags = NULL,
  secrets = NULL,
  availableSecrets = NULL,
  images = NULL,
  artifacts = NULL,
  serviceAccount = NULL
)
```

Arguments

steps	A vector of cr_buildstep
timeout	How long the entire build will run. If not set will be 10mins
logsBucket	Where logs are written. If you don't set this field, Cloud Build will use a default bucket to store your build logs.
options	A named list of options
substitutions	Build macros that will replace entries in other elements
tags	Tags for the build
secrets	A secrets object
availableSecrets	What environment arguments from Secret Manager are available to the build - create via cr_build_yaml_secrets
images	What images will be build from this cloudbuild
artifacts	What artifacts may be built from this cloudbuild - create via cr_build_yaml_artifact
serviceAccount	What service account should the build be run under?

See Also

[Build configuration overview for cloudbuild.yaml](#)

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build\(\)](#)

Examples

```
cr_project_set("my-project")
image <- "gcr.io/my-project/my-image"
cr_build_yaml(
  steps = c(
```

```

    cr_buildstep("docker", c("build", "-t", image, ".")),
    cr_buildstep("docker", c("push", image)),
    cr_buildstep("gcloud", c("beta", "run", "deploy", "test1", "--image", image))
  ),
  images = image
)

```

cr_build_yaml_artifact

Add an artifact for cloudbuild.yaml

Description

Add artifact objects to a build

Usage

```
cr_build_yaml_artifact(paths, bucket_dir = NULL, bucket = cr_bucket_get())
```

Arguments

paths	Which files from the working directory to upload to cloud storage once the build is finished. Can use globs but see details of cr_build_artifacts on how that affects downloads
bucket_dir	The directory in the bucket the files will be uploaded to
bucket	the bucket to send to

See Also

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```

## Not run:
cr_project_set("my-project")
r <- "write.csv(mtcars,file = 'artifact.csv')"
cr_build_yaml(
  steps = cr_buildstep_r(r),
  artifacts = cr_build_yaml_artifact("artifact.csv", bucket = "my-bucket")
)

## End(Not run)

```

cr_build_yaml_secrets *Create an availableSecrets entry for build yaml*

Description

This creates the availableSecrets entry for Builds so they can use Secret Manager environment arguments in the builds.

Usage

```
cr_build_yaml_secrets(  
  secretEnv,  
  secret,  
  version = "latest",  
  projectId = cr_project_get()  
)
```

Arguments

secretEnv	The name of the secretEnv that will be referred to in the build steps e.g. 'GH_TOKEN'
secret	The secret data name in Secret Manager
version	The version of the secret
projectId	The project to get the Secret from

See Also

To download from Secret Manager to a file in a dedicated buildstep see [cr_buildstep_secret](#).

[Using secrets from Secret Manager](#)

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```
cr_build_yaml_secrets("GH_TOKEN", "github_token")  
  
s1 <- cr_build_yaml_secrets("USERNAME", "my_username")  
s2 <- cr_build_yaml_secrets("PASSWORD", "my_password")  
  
# use one $ in scripts to use the secretEnv (will be replaced by $$)  
cr_build_yaml(  
  steps = cr_buildstep(  
    "docker",  
    entrypoint = "bash",  
    args = c(  
      "-c",
```

```

    "docker login --username=$USERNAME --password=$PASSWORD"
  ),
  secretEnv = c("USERNAME", "PASSWORD")
),
availableSecrets = list(s1, s2)
)

```

cr_deploy_badger

Deploy a Cloud Run app to display build badges

Description

This uses <https://github.com/kelseyhightower/badger> to create badges you can display in README.md etc. showing the current status of a Cloud Build

Usage

```

cr_deploy_badger(
  badger_image = "gcr.io/hightowerlabs/badger:0.0.1",
  json = Sys.getenv("GAR_CLIENT_JSON"),
  region = cr_region_get()
)

cr_build_logs_badger(dir = getwd(), projectId = cr_project_get())

```

Arguments

badger_image	The docker image from the badger project to use
json	The clientId JSON file of the project to create within
region	The Cloud Run region
dir	The directory containing the README.md file
projectId	The projectId running the badger badge for a buildtrigger

Details

cr_build_logs_badger is intended to be run from the root directory of an R package that holds a README.md file containing a `![Cloudbuild]` badge as created by cr_deploy_badger(). The function will scan the README.md file for the correct triggerId to pass to [cr_buildtrigger_logs](#)

cr_deploy_docker	<i>Deploy a local Dockerfile to be built on ContainerRegistry</i>
------------------	---

Description

Build a local Dockerfile in the cloud. See [googleCloudRunner website](#) for help how to generate Dockerfiles. If you want the docker to build on each commit, see also [cr_deploy_docker_trigger](#)

Usage

```
cr_deploy_docker(  
  local,  
  image_name = remote,  
  dockerfile = NULL,  
  remote = basename(local),  
  tag = c("latest", "$BUILD_ID"),  
  timeout = 600L,  
  bucket = cr_bucket_get(),  
  projectId = cr_project_get(),  
  launch_browser = interactive(),  
  kaniko_cache = TRUE,  
  predefinedAcl = "bucketOwnerFullControl",  
  pre_steps = NULL,  
  post_steps = NULL,  
  ...  
)
```

```
cr_deploy_docker_construct(  
  local,  
  image_name = remote,  
  dockerfile = NULL,  
  remote = basename(local),  
  tag = c("latest", "$BUILD_ID"),  
  timeout = 600L,  
  bucket = cr_bucket_get(),  
  projectId = cr_project_get(),  
  launch_browser = interactive(),  
  kaniko_cache = TRUE,  
  predefinedAcl = "bucketOwnerFullControl",  
  pre_steps = NULL,  
  post_steps = NULL,  
  ...  
)
```

Arguments

local	The folder containing the Dockerfile to build
-------	---

image_name	The name of the docker image to be built either full name starting with gcr.io or constructed from the image_name and projectId via <code>gcr.io/{projectId}/{image_name}</code>
dockerfile	An optional Dockerfile built to support the script. Not needed if "Dockerfile" exists in folder. If supplied will be copied into deployment folder and called "Dockerfile"
remote	The folder on Google Cloud Storage
tag	The tag or tags to be attached to the pushed image - can use Build macros
timeout	Amount of time that this build should be allowed to run, to second
bucket	The GCS bucket that will be used to deploy code source
projectId	The projectId
launch_browser	Whether to launch the logs URL in a browser once deployed
kaniko_cache	If TRUE will use kaniko cache for Docker builds.
predefinedAcl	Access setting for the bucket used in deployed. Set to "bucketLevel" if using bucket level access
pre_steps	Other cr_buildstep to run before the docker build
post_steps	Other cr_buildstep to run after the docker build
...	Arguments passed on to cr_buildstep_docker
image	The image tag that will be pushed, starting with gcr.io or created by combining with projectId if not starting with gcr.io
location	Where the Dockerfile to build is in relation to dir
build_args	additional arguments to pass to docker build, should be a character vector.
push_image	if kaniko_cache = FALSE and push_image = FALSE, then the docker image is simply built and not pushed

Details

This lets you deploy local folders with Dockerfiles, automating saving the source on Google Cloud Storage.

To deploy builds on git triggers and sources such as GitHub, see the examples of [cr_buildstep_docker](#) or the use cases on the website

Note

'`cr_deploy_docker_construct`' is a helper function to construct the arguments needed to deploy the docker, which may be combined with [cr_deploy_r](#) to combine Docker and R

See Also

If you want the docker to build on each commit, see [cr_deploy_docker_trigger](#)

Other Deployment functions: [cr_deploy_docker_trigger\(\)](#), [cr_deploy_packagetests\(\)](#), [cr_deploy_pkgdown\(\)](#), [cr_deploy_run_website\(\)](#), [cr_deploy_run\(\)](#), [cr_deploy_r\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_email_set("123456@projectid.iam.gserviceaccount.com")
cr_bucket_set("my-bucket")

b <- cr_deploy_docker(system.file("example/", package = "googleCloudRunner"))

## End(Not run)
```

cr_deploy_docker_trigger

Deploy Docker build from a Git repo

Description

This helps the common use case of building a Dockerfile based on the contents of a GitHub repo, and sets up a build trigger so it will build on every commit.

Usage

```
cr_deploy_docker_trigger(
  repo,
  image,
  trigger_name = paste0("docker-", image),
  image_tag = c("latest", "$SHORT_SHA", "$BRANCH_NAME"),
  ...,
  substitutions = NULL,
  ignoredFiles = NULL,
  includedFiles = NULL,
  timeout = NULL,
  projectId_target = cr_project_get()
)
```

Arguments

repo	The git repo holding the Dockerfile from cr_buildtrigger_repo
image	The name of the image you want to build
trigger_name	The trigger name
image_tag	What to tag the build docker image
...	Arguments passed on to cr_buildstep_docker
tag	The tag or tags to be attached to the pushed image - can use Build macros
location	Where the Dockerfile to build is in relation to dir
projectId	The projectId

dockerfile	Specify the name of the Dockerfile found at location
kaniko_cache	If TRUE will use kaniko cache for Docker builds.
build_args	additional arguments to pass to docker build, should be a character vector.
push_image	if kaniko_cache = FALSE and push_image = FALSE, then the docker image is simply built and not pushed
substitutions	A named list of Build macro variables
ignoredFiles	ignored_files and included_files are file glob matches extended with support for "**".
includedFiles	If any of the files altered in the commit pass the ignored_files
timeout	Timeout for build
projectId_target	The project to publish the Docker image to. The image will be built under the project configured via cr_project_get . You will need to give the build project's service email access to the target GCP project via IAM for it to push successfully.

Details

This creates a buildtrigger to do a kamiko cache enabled Docker build upon each commit, as defined by your repo settings via [cr_buildtrigger_repo](#). It will build all tags concurrently.

See Also

[cr_deploy_docker](#) which lets you build Dockerfiles for more generic use cases

Other Deployment functions: [cr_deploy_docker\(\)](#), [cr_deploy_packagetests\(\)](#), [cr_deploy_pkgdown\(\)](#), [cr_deploy_run_website\(\)](#), [cr_deploy_run\(\)](#), [cr_deploy_r\(\)](#)

Examples

```
## Not run:
repo <- cr_buildtrigger_repo("MarkEdmondson1234/googleCloudRunner")
# create trigger that will publish Docker image to gcr.io/your-project/test upon each GitHub commit
cr_deploy_docker_trigger(repo, "test", dir = "cloud_build")

# build in one project, publish the docker image to another project (gcr.io/another-project/test)
cr_deploy_docker_trigger(repo, "test", projectId_target = "another-project", dir = "cloud_build")

## End(Not run)
```

cr_deploy_gadget	<i>Launch the googleCloudRunner deployment RStudio gadget</i>
------------------	---

Description

You can assign a hotkey to the addin via Tools > Addins > Browse Addins > Keyboard shortcuts. CTRL+SHIFT+D is a suggested hotkey.

Usage

```
cr_deploy_gadget()
```

cr_deploy_packagetests	<i>Deploy a cloudbuild.yml for R package tests and upload to Codecov</i>
------------------------	--

Description

This tests an R package each time you commit, and uploads the test coverage results to Codecov

Usage

```
cr_deploy_packagetests(
  steps = NULL,
  cloudbuild_file = "cloudbuild-tests.yml",
  env = c("NOT_CRAN=true"),
  test_script = NULL,
  codecov_script = NULL,
  codecov_token = "$_CODECOV_TOKEN",
  build_image = "gcr.io/gcer-public/package-tools:latest",
  create_trigger = c("file", "inline", "no"),
  trigger_repo = NULL,
  ...,
  footer = TRUE
)
```

Arguments

steps	extra steps to run before the cr_buildstep_packagetests steps run (such as decryption of auth files)
cloudbuild_file	The cloudbuild yaml file to write to. See <code>create_trigger</code>
env	Environment arguments to be set during the test script runs
test_script	The script that will call rmdcheck to perform tests. If NULL a default script is used in <code>system.file("r_buildsteps", "devtools_tests.R", package="googlecloudRunner")</code>

codecov_script	The script that will call codecov to perform coverage. If NULL a default script is used in <code>system.file("r_buildsteps", "codecov_tests.R", package="googleCloudRunner")</code>
codecov_token	If using codecov , supply your codecov token here.
build_image	The docker image that will be used to run the R code for the test scripts
create_trigger	If creating a trigger, whether to create it from the <code>cloudbuild_file</code> or inline
trigger_repo	If not NULL, a cr_buildtrigger_repo where a buildtrigger will be created via cr_buildtrigger
...	Arguments passed on to cr_build_make
yaml	A Yaml object created from cr_build_yaml or a file location of a <code>.yaml/.yml</code> cloud build file
artifacts	Artifacts that may be built via cr_build_yaml_artifact
options	Options to pass to a Cloud Build
availableSecrets	Secret Manager objects built by cr_build_yaml_secrets
logsBucket	The <code>gs://</code> location of a bucket to put logs in
source	A Source object specifying the location of the source files to build, usually created by cr_build_source
timeout	Amount of time that this build should be allowed to run, to second
images	A list of images to be pushed upon the successful completion of all build
substitutions	Substitutions data for 'Build' resource
serviceAccount	service account email to be used for the build
footer	flag passed to cr_build_write , indicating if a footer in the YAML should be added with the creation date/time.

Details

The trigger repository needs to hold an R package configured to do tests upon.

For GitHub, the repository will need to be linked to the project you are building within, via <https://console.cloud.google.com/cloud-build/triggers/connect>

If your tests need authentication details, add these via [cr_buildstep_secret](#) to the `steps` argument, which will prepend decrypting the authentication file before running the tests.

If you want [codecov](#) to ignore some files then also deploy a `.covrignore` file to your repository - see [covr](https://covr.r-lib.org/) website at <https://covr.r-lib.org/> for details.

See Also

Create your own custom deployment using [cr_buildstep_packagetests](#) which this function uses with some defaults

[cr_buildstep_packagetests](#)

Other Deployment functions: [cr_deploy_docker_trigger\(\)](#), [cr_deploy_docker\(\)](#), [cr_deploy_pkgdown\(\)](#), [cr_deploy_run_website\(\)](#), [cr_deploy_run\(\)](#), [cr_deploy_r\(\)](#)

Examples

```

# create a local cloudbuild.yml file for pkgdown tests
pd <- cr_deploy_pkgdown(create_trigger = "no")
pd

# add a decryption step for an auth file
cr_deploy_pkgdown(
  steps = cr_buildstep_secret("my_secret", "auth.json"),
  env = c("NOT_CRAN=true", "MY_AUTH_FILE=auth.json"),
  timeout = 1200,
  create_trigger = "no"
)

# creating a buildtrigger repo for trigger_repo
repo <- cr_buildtrigger_repo("MarkEdmondson1234/googleCloudRunner",
  branch = "master"
)
## Not run:

# will create the file in the repo, and point a buildtrigger at it
cr_deploy_pkgdown(create_trigger = "file", trigger_repo = repo)

# will make an inline build within a buildtrigger
cr_deploy_pkgdown(create_trigger = "inline", trigger_repo = repo)

## End(Not run)

unlink("cloudbuild-tests.yml")

```

cr_deploy_pkgdown

Deploy a cloudbuild.yml for a pkgdown website of an R package

Description

This builds a pkgdown website each time the trigger fires and deploys it to git

Usage

```

cr_deploy_pkgdown(
  github_repo,
  secret,
  steps = NULL,
  create_trigger = c("file", "inline", "no"),
  cloudbuild_file = "cloudbuild-pkgdown.yml",
  git_email = "googlecloudrunner@r.com",
  env = NULL,
  build_image = "gcr.io/gcer-public/pkgdown:latest",

```

```

    post_setup = NULL,
    post_clone = NULL,
    footer = TRUE
  )

```

Arguments

github_repo	The GitHub repo to deploy pkgdown website from and to.
secret	The name of the secret on Google Secret Manager for the git ssh private key
steps	extra steps to run before the pkgdown website steps run
create_trigger	If not "no" then the buildtrigger will be setup for you via cr_buildtrigger , if "file" will create a buildtrigger pointing at cloudbuild_file, if "inline" will put the build inline within the trigger (no file created)
cloudbuild_file	The cloudbuild yaml file to write to
git_email	The email the git commands will be identifying as
env	A character vector of env arguments to set for all steps
build_image	A docker image with pkgdown installed
post_setup	Steps that occur after git setup
post_clone	A cr_buildstep that occurs after the repo is cloned
footer	flag passed to cr_build_write , indicating if a footer in the YAML should be added with the creation date/time.

Details

The trigger repository needs to hold an R package configured to build a pkgdown website.

For GitHub, the repository will also need to be linked to the project you are building within, via <https://console.cloud.google.com/cloud-build/triggers/connect>

The git ssh keys need to be deployed to Google Secret Manager for the deployment of the website - see [cr_buildstep_git](#) - this only needs to be done once per Git account.

See Also

Create your own custom deployment using [cr_buildstep_pkgdown](#) which this function uses with some defaults.

Other Deployment functions: [cr_deploy_docker_trigger\(\)](#), [cr_deploy_docker\(\)](#), [cr_deploy_packagetests\(\)](#), [cr_deploy_run_website\(\)](#), [cr_deploy_run\(\)](#), [cr_deploy_r\(\)](#)

Examples

```

pd <- cr_deploy_pkgdown("MarkEdmondson1234/googleCloudRunner",
  secret = "my_git_secret",
  create_trigger = "no"
)
pd
file.exists("cloudbuild-pkgdown.yml")

```

```

unlink("cloudbuild-pkgdown.yml")
## Not run:
cr_deploy_pkgdown("MarkEdmondson1234/googleCloudRunner",
  secret = "my_git_secret",
  create_trigger = "inline"
)

## End(Not run)

```

cr_deploy_r

Deploy an R script with an optional schedule

Description

Will create a build to run an R script in Cloud Build with an optional schedule from Cloud Scheduler

Usage

```

cr_deploy_r(
  r,
  schedule = NULL,
  source = NULL,
  run_name = NULL,
  r_image = "rocker/verse",
  pre_steps = NULL,
  post_steps = NULL,
  timeout = 600L,
  ...,
  schedule_type = c("pubsub", "http"),
  schedule_pubsub = NULL,
  email = cr_email_get(),
  region = cr_region_get(),
  projectId = cr_project_get(),
  serviceAccount = NULL,
  launch_browser = interactive()
)

```

Arguments

r	R code to run or a file containing R code ending with .R, or the gs:// location on Cloud Storage of the R file you want to run
schedule	A cron schedule e.g. "15 5 * * *"
source	A Source object specifying the location of the source files to build, usually created by cr_build_source
run_name	What name the R code will identify itself as. If NULL one is autogenerated.
r_image	The R docker environment executing the R code

pre_steps	Other cr_buildstep to run before the R code executes
post_steps	Other cr_buildstep to run after the R code executes
timeout	Amount of time that this build should be allowed to run, to second
...	Arguments passed on to cr_buildstep_r
name	The docker image that will run the R code, usually from rocker-project.org
r_source	Whether the R code will be from a runtime file within the source or at build time copying over from a local R file in your session
escape_dollar	Default TRUE. This will turn \$ into \$\$ within the script to avoid them being recognised as Cloud Build variables. Turn this off if you want that behaviour (e.g. my_project="\$PROJECT_ID")
rscript_args	Optional arguments for the R script run by Rscript.
r_cmd	should 'Rscript' be run or 'R'?
prefix	prefixed to name - set to "" to suppress. Will be suppressed if name starts with gcr.io or *-docker.pkg.dev
schedule_type	If you have specified a schedule, this will select what strategy it will use to deploy it. See details
schedule_pubsub	If you have a custom pubsub message to send via an existing topic, use cr_schedule_pubsub to supply it here
email	The email that will authenticate the job set via cr_email_set
region	The region usually set with cr_region_set
projectId	ID of the project
serviceAccount	service account email to be used for the build
launch_browser	Whether to launch the logs URL in a browser once deployed

Details

The R script will execute within the root directory of whichever [Source](#) you supply, usually created via [cr_build_source](#) representing a Cloud Storage bucket or a GitHub repository that is copied across before code execution. Bear in mind if the source changes then the code scheduled may need updating.

The `r_image` dictates what R libraries the R environment executing the code of `r` will have, via the underlying Docker container usually supplied by rocker-project.org. If you want custom R libraries beyond the default, create a docker container with those R libraries installed (perhaps via [cr_deploy_docker](#))

Value

If scheduling then a [Job](#), if building immediately then a [Build](#)

Scheduling

If `schedule=NULL` then the R script will be run immediately on Cloud Build via [cr_build](#).

If `schedule` carries a cron job string (e.g. "15 5 * * *") then the build will be scheduled via Cloud Scheduler

If `schedule_type="pubsub"` then you will need `googlePubsubR` installed and set-up and scheduling will involve:

1. Creating a PubSub topic called "`{run_name}-topic`" or subscribing to the one you provided in `schedule_pubsub`. It is assumed you have created the PubSub topic beforehand if you do supply your own.
2. Create a Build Trigger called "`{run_name}-trigger`" that will run when the PubSub topic is called
3. Create a Cloud Schedule called "`{run_name}-trigger`" that will send a pubsub message to the topic: either the default that contains just the name of the script, or the message you supplied in `schedule_pubsub`.

Type "pubsub" is recommended for more complex R scripts as you will have more visibility for debugging schedules via inspecting the PubSub topic, build trigger and build logs, as well as enabling triggering the script from other PubSub topics and allowing to pass dynamic parameters into your schedule scripts via the PubSub message.

If `schedule_type="http"` then scheduling will involve:

1. Create a Cloud Build API call with your build embedded within it via [cr_schedule_http](#)
2. Schedule the HTTP call using the authentication email supplied in `email` or the default [cr_email_get](#)

This is the old default and is suitable for smaller R scripts or when you don't want to use the other GCP services. The authentication for the API call from Cloud Scheduler can cause opaque errors as it will give you invalid response codes whether its that or an error in your R script you wish to schedule.

See Also

If you want to run R code upon certain events like GitHub pushes, look at [cr_buildtrigger](#)

Other Deployment functions: [cr_deploy_docker_trigger\(\)](#), [cr_deploy_docker\(\)](#), [cr_deploy_packagetests\(\)](#), [cr_deploy_pkgdown\(\)](#), [cr_deploy_run_website\(\)](#), [cr_deploy_run\(\)](#)

Examples

```
r_lines <- c(
  "list.files()",
  "library(dplyr)",
  "mtcars %>% select(mpg)",
  "sessionInfo()"
)
source <- cr_build_source(RepoSource("googleCloudStorageR",
  branchName = "master"
))
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_email_set("123456@projectid.iam.gserviceaccount.com")

# check the script runs ok
```

```
cr_deploy_r(r_lines, source = source)

# schedule the script
cr_deploy_r(r_lines, schedule = "15 21 * * *", source = source)

## End(Not run)
```

cr_deploy_run

Deploy to Cloud Run

Description

Deploy R api plumber scripts, HTML files or other images create the Docker image, add the build to Cloud Build and deploy to Cloud Run

Usage

```
cr_deploy_run(
  local,
  remote = basename(local),
  dockerfile = NULL,
  image_name = remote,
  tag = "$BUILD_ID",
  region = cr_region_get(),
  bucket = cr_bucket_get(),
  projectId = cr_project_get(),
  launch_browser = interactive(),
  timeout = 600L,
  kaniko_cache = TRUE,
  pre_steps = NULL,
  post_steps = NULL,
  ...
)

cr_deploy_html(
  html_folder,
  remote = basename(html_folder),
  image_name = remote,
  tag = "$BUILD_ID",
  region = cr_region_get(),
  bucket = cr_bucket_get(),
  projectId = cr_project_get(),
  launch_browser = interactive(),
  timeout = 600L,
  ...
)
```



```

cr_deploy_plumber(
  api,
  remote = basename(api),
  dockerfile = NULL,
  image_name = remote,
  tag = "$BUILD_ID",
  region = cr_region_get(),
  bucket = cr_bucket_get(),
  projectId = cr_project_get(),
  launch_browser = interactive(),
  timeout = 600L,
  ...
)

```

Arguments

local	A folder containing the scripts and Dockerfile to deploy to Cloud Run
remote	The folder on Google Cloud Storage, and the name of the service on Cloud Run
dockerfile	An optional Dockerfile built to support the script. Not needed if 'Dockerfile' exists in folder. If supplied will be copied into deployment folder and called "Dockerfile"
image_name	The gcr.io image name that will be deployed and/or built
tag	The tag or tags to be attached to the pushed image - can use Build macros
region	The Cloud Run endpoint set by CR_REGION env arg
bucket	The Cloud Storage bucket that will hold the code
projectId	The projectId where it all gets deployed to
launch_browser	Whether to launch the logs URL in a browser once deployed
timeout	Amount of time that this build should be allowed to run, to second
kaniko_cache	If TRUE will use kaniko cache for Docker builds.
pre_steps	Other cr_buildstep to run before the docker build
post_steps	Other cr_buildstep to run after the docker build
...	Arguments passed on to cr_buildstep_run
name	Name for deployment on Cloud Run
image	The name of the image to create or use in deployment - gcr.io
allowUnauthenticated	TRUE if can be reached from public HTTP address. If FALSE will configure a service-email called (name)-cloudrun-invoker@(project-id).iam.gser
concurrency	How many connections each container instance can serve. Can be up to 80.
port	Container port to receive requests at. Also sets the \$PORT environment variable. Must be a number between 1 and 65535, inclusive. To unset this field, pass the special value "default".
max_instances	the desired maximum number of container instances. "default" is 1000, you can get more if you requested a quota instance. For Shiny instances on Cloud Run, this needs to be 1.

memory	The format for size is a fixed or floating point number followed by a unit: G, M, or K corresponding to gigabyte, megabyte, or kilobyte, respectively, or use the power-of-two equivalents: Gi, Mi, Ki corresponding to gibibyte, mebibyte or kibibyte respectively. The default is 256Mi
cpu	1 or 2 CPUs for your instance
env_vars	Environment arguments passed to the Cloud Run container at runtime. Distinct from env that run at build time.
gcloud_args	a character string of arguments that can be sent to the gcloud command not covered by other parameters of this function
html_folder	the folder containing all the html
api	A folder containing the R script using plumber called api.R and all its dependencies

Details

These deploy containers to Cloud Run, a scale 0-to-millions container-as-a-service on Google Cloud Platform.

cr_deploy_html

Deploy html files to a nginx server on Cloud Run.

Supply the html folder to host it on Cloud Run. Builds the dockerfile with the html within it, then deploys to Cloud Run

Will add a default.template file to the html folder that holds the nginx configuration

cr_deploy_plumber

The endpoint for CloudRun will be via a plumber script called api.R - this should be included in your local folder to deploy. From that api.R you can source or call other resources in the same folder, using relative paths.

The function will create a local folder called "deploy" and a tar.gz of that folder which is what is being uploaded to Google Cloud Storage

See Also

For scheduling Cloud Run apps [cr_run_schedule_http](#)

[cr_deploy_run_website](#) which has more features like rending Rmd files and deploying upon each git commit

Other Deployment functions: [cr_deploy_docker_trigger\(\)](#), [cr_deploy_docker\(\)](#), [cr_deploy_packagetests\(\)](#), [cr_deploy_pkgdown\(\)](#), [cr_deploy_run_website\(\)](#), [cr_deploy_r\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_bucket_set("my-bucket")
```

```

cr_deploy_run(system.file("example/", package = "googleCloudRunner"))

## End(Not run)
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_bucket_set("my-bucket")

cr_deploy_html("my_folder")

## End(Not run)
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_bucket_set("my-bucket")

cr_deploy_plumber(system.file("example/", package = "googleCloudRunner"))

## End(Not run)

```

cr_deploy_run_website *Deploy HTML built from a repo each commit*

Description

This lets you set up triggers that will update an R generated website each commit.

Usage

```

cr_deploy_run_website(
  repo,
  image = paste0("website-", format(Sys.Date(), "%Y%m%d")),
  rmd_folder = NULL,
  html_folder = NULL,
  image_tag = "$SHORT_SHA",
  timeout = 600L,
  edit_r = NULL,
  r_image = "gcr.io/gcer-public/package-tools:latest",
  allowUnauthenticated = TRUE,
  region = cr_region_get(),
  projectId = cr_project_get()
)

```

Arguments

repo	A git repository defined in cr_buildtrigger_repo
image	The name of the image you want to build

rmd_folder	A folder of Rmd files within GitHub source that will be built into HTML for serving via render
html_folder	A folder of html to deploy within GitHub source. Will be ignored if rmd_folder is not NULL
image_tag	What to tag the build docker image
timeout	Timeout for the build
edit_r	If you want to change the R code to render the HTML, supply R code via a file or string of R as per cr_buildstep_r
r_image	The image that will run the R code from edit_r
allowUnauthenticated	TRUE if can be reached from public HTTP address. If FALSE will configure a service-email called (name)-cloudrun-invoker@(project-id).iam.gserviceaccount.com
region	The region for cloud run
projectId	The GCP projectId which will be deployed within

Details

This lets you render the Rmd (or other R functions that produce HTML) in a folder for your repo, which will then be hosted on a Cloud Run enabled with nginx. Each time you push to git with modified Rmd code, it will build the new HTML and push an update to the website.

This default R code is rendered in the rmd_folder:

```
lapply(list.files('.', pattern = '.Rmd', full.names = TRUE), rmarkdown::render, output_format = 'html_document')
```

See Also

[cr_deploy_html](#) that lets you deploy just HTML files and [cr_deploy_pkgdown](#) for running pkgdown websites.

Other Deployment functions: [cr_deploy_docker_trigger\(\)](#), [cr_deploy_docker\(\)](#), [cr_deploy_packagetests\(\)](#), [cr_deploy_pkgdown\(\)](#), [cr_deploy_run\(\)](#), [cr_deploy_r\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
your_repo <- cr_buildtrigger_repo("MarkEdmondson1234/googleCloudRunner")
cr_deploy_run_website(your_repo, rmd_folder = "vignettes")

# change the Rmd rendering to pkgdown
r <- "devtools::install();pkgdown::build_site()"

cr_deploy_run_website(your_repo,
  image = paste0(your_repo, "-pkgdown"),
  rmd_folder = ".",
  edit_r = r
)
```

```
## End(Not run)
```

cr_email_get	<i>Get/Set cloud build email</i>
--------------	----------------------------------

Description

Needed so Cloud Scheduler can run Cloud Build jobs - can also set via environment argument CR_BUILD_EMAIL

Usage

```
cr_email_get()
cr_email_set(cloudbuildEmail)
```

Arguments

```
cloudbuildEmail
    The Cloud Build service email
```

See Also

<https://console.cloud.google.com/cloud-build/settings>

Examples

```
cr_email_set("myemail@domain.com")
cr_email_get()
```

cr_jwt_create	<i>Create a JSON Web Token (JWT) from your service client and call Google services</i>
---------------	--

Description

This can be used to call authenticated services such as Cloud Run.

Usage

```
cr_jwt_create(the_url, service_json = Sys.getenv("GCE_AUTH_FILE"))

cr_jwt_token(signed_jwt, the_url)

cr_jwt_with_httr(req, token)

cr_jwt_with_curl(h = curl::new_handle(), token)

cr_jwt_async(urls, token, ...)
```

Arguments

the_url	The URL of the service you want to call
service_json	The account service key JSON that will be used to generate the JWT
signed_jwt	A JWT created from cr_jwt_create
req	A httr request to the service running on the_url, using httr verbs such as GET
token	The token created via cr_jwt_token
h	A curl handle such as set with new_handle
urls	URLs to request asynchronously
...	Other arguments passed to new_handle

Details

For certain Google services a JWT is needed to authenticate access, which is distinct from OAuth2. An example of this is authenticated Cloud Run such as deployed when using [cr_run](#) and parameter `allowUnauthenticated = FALSE`. These functions help you call your services by generating the JWT from your service account key.

The token is set to expire in 1 hour, so it will need refreshing before then by calling this function again.

See Also

[Service-to-service authentication on GCP](#)

Other Cloud Run functions: [cr_plumber_pubsub\(\)](#), [cr_run_email\(\)](#), [cr_run_get\(\)](#), [cr_run_list\(\)](#), [cr_run_schedule_http\(\)](#), [cr_run\(\)](#)

Examples

```
## Not run:

# The private authenticated access only Cloud Run service
the_url <- "https://authenticated-cloudrun-ewjogewawq-ew.a.run.app/"

# creating the JWT and token
jwt <- cr_jwt_create(the_url)
token <- cr_jwt_token(jwt, the_url)
```

```
# call Cloud Run app using token with any httr verb
library(httr)
res <- cr_jwt_with_httr(
  GET("https://authenticated-cloudrun-ewjogewawq-ew.a.run.app/hello"),
  token
)
content(res)

# call Cloud Run app with curl - you can pass in a curl handle
library(curl)
h <- new_handle()
handle_setopt(h, customrequest = "PUT")
handle_setform(h, a = "1", b = "2")
h <- cr_jwt_with_curl(h, token = token)
r <- curl_fetch_memory("https://authenticated-cloudrun-ewjogewawq-ew.a.run.app/hello", h)
cat(rawToChar(r$content))

# use curls multi-async functions
many_urls <- paste0(
  "https://authenticated-cloudrun-ewjogewawq-ew.a.run.app/hello",
  paste0("?param="), 1:6
)
cr_jwt_async(many_urls, token = token)

## End(Not run)
```

cr_plumber_pubsub *Plumber - Pub/Sub parser*

Description

A function to use in plumber scripts to accept Pub/Sub messages

Usage

```
cr_plumber_pubsub(message = NULL, pass_f = function(x) x)
```

Arguments

message	The pubsub message
pass_f	An R function that will work with the data parsed out of the pubsub message\$data field.

Details

This function is intended to be used within [plumb](#) API scripts. It needs to be annotated with a `@post` URL route and a `@param` message The pubsub message as per the plumber documentation.

`pass_f` should be a function you create that accepts one argument, the data from the pubsub message `$data` field. It is unencoded for you. Make sure the function returns a 200 response otherwise pub/sub will keep resending the message! `return(TRUE)` is adequate.

The Docker container for the API will need to include `googleCloudRunner` installed in its R environment to run this function. This is available in the public `gcr.io/gcer-public/cloudrunner` image.

Use [cr_pubsub](#) to test this function once deployed.

See Also

[Google Pub/Sub tutorial for Cloud Run](#). You can set up Pub/Sub messages from Google Cloud Storage buckets via [gcs_create_pubsub](#)

Other Cloud Run functions: [cr_jwt_create\(\)](#), [cr_run_email\(\)](#), [cr_run_get\(\)](#), [cr_run_list\(\)](#), [cr_run_schedule_http\(\)](#), [cr_run\(\)](#)

Examples

```
## Not run:

# within a plumber api.R script:

# example function echos back pubsub message
pub <- function(x) {
  paste("Echo:", x)
}

#' Recieve pub/sub message
#' @post /pubsub #nolint
#' @param message a pub/sub message
function(message = NULL) {
  googleCloudRunner::cr_plumber_pubsub(message, pub)
}

## End(Not run)
```

cr_project_set

Get/Set the projectId for your CloudRun services

Description

Can also use environment argument `GCE_DEFAULT_PROJECT_ID`

Usage

```
cr_project_set(projectId)
```

```
cr_project_get()
```

Arguments

projectId The projectId

Examples

```
cr_project_get()
```

cr_pubsub	<i>Send a message to pubsub</i>
-----------	---------------------------------

Description

Useful for testing Cloud Run pubsub deployments

Usage

```
cr_pubsub(endpoint, payload = jsonlite::toJSON("hello"))
```

Arguments

endpoint The url endpoint of the PubSub service
payload Will be base64 encoded and placed in message\$data

cr_regions	<i>Cloud Run Regions</i>
------------	--------------------------

Description

Cloud Run Regions

Usage

```
cr_regions
```

Format

A character vector of valid Cloud Run region names

cr_region_set	<i>Get/Set the endpoint for your CloudRun services</i>
---------------	--

Description

Can also use environment argument CR_REGION

Usage

```
cr_region_set(region = googleCloudRunner::cr_regions)

cr_region_get()
```

Arguments

region	Region for the endpoint
--------	-------------------------

Examples

```
cr_region_get()
```

cr_run	<i>Create a CloudRun service.</i>
--------	-----------------------------------

Description

Deploys an existing gcr.io image.

Usage

```
cr_run(
  image,
  name = basename(image),
  allowUnauthenticated = TRUE,
  concurrency = 1,
  port = NULL,
  max_instances = "default",
  memory = "256Mi",
  cpu = 1,
  timeout = 600L,
  region = cr_region_get(),
  projectId = cr_project_get(),
  launch_browser = interactive(),
  env_vars = NULL,
  gcloud_args = NULL,
  ...
)
```

Arguments

image	The name of the image to create or use in deployment - gcr.io
name	Name for deployment on Cloud Run
allowUnauthenticated	TRUE if can be reached from public HTTP address. If FALSE will configure a service-email called (name)-cloudrun-invoker@(project-id).iam.gserviceaccount.com
concurrency	How many connections each container instance can serve. Can be up to 80.
port	Container port to receive requests at. Also sets the \$PORT environment variable. Must be a number between 1 and 65535, inclusive. To unset this field, pass the special value "default".
max_instances	the desired maximum number of container instances. "default" is 1000, you can get more if you requested a quota instance. For Shiny instances on Cloud Run, this needs to be 1.
memory	The format for size is a fixed or floating point number followed by a unit: G, M, or K corresponding to gigabyte, megabyte, or kilobyte, respectively, or use the power-of-two equivalents: Gi, Mi, Ki corresponding to gibibyte, mebibyte or kibibyte respectively. The default is 256Mi
cpu	1 or 2 CPUs for your instance
timeout	Amount of time that this build should be allowed to run, to second
region	The endpoint region for deployment
projectId	The GCP project from which the services should be listed
launch_browser	Whether to launch the logs URL in a browser once deployed
env_vars	Environment arguments passed to the Cloud Run container at runtime. Distinct from env that run at build time.
gcloud_args	a character string of arguments that can be sent to the gcloud command not covered by other parameters of this function
...	Arguments passed on to cr_buildstep_run

Details

Uses Cloud Build to deploy an image to Cloud Run

See Also

[Google Documentation for Cloud Run](#)

Use [cr_deploy_docker](#) or similar to create image, [cr_deploy_run](#) to automate building and deploying, [cr_deploy_plumber](#) to deploy plumber APIs.

[Deploying Cloud Run using Cloud Build](#)

Other Cloud Run functions: [cr_jwt_create\(\)](#), [cr_plumber_pubsub\(\)](#), [cr_run_email\(\)](#), [cr_run_get\(\)](#), [cr_run_list\(\)](#), [cr_run_schedule_http\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_run("gcr.io/my-project/my-image")
cr_run("gcr.io/cloud-tagging-10302018/gtm-cloud-image:stable",
      env_vars = c("CONTAINER_CONFIG=xxxxxxx")
    )

## End(Not run)
```

cr_run_email

Create an invoker email for use within authenticated Cloud Run

Description

Create an invoker email for use within authenticated Cloud Run

Usage

```
cr_run_email(name, projectId = cr_project_get())
```

Arguments

name	Name of the Cloud Run service
projectId	The projectId where the Cloud Run service will run - set to NULL to only return the processed service name

See Also

Other Cloud Run functions: [cr_jwt_create\(\)](#), [cr_plumber_pubsub\(\)](#), [cr_run_get\(\)](#), [cr_run_list\(\)](#), [cr_run_schedule_http\(\)](#), [cr_run\(\)](#)

Examples

```
cr_run_email("my-run-app", "my-project")
```

`cr_run_get`*Get information about a Cloud Run service.*

Description

Get information about a Cloud Run service.

Usage

```
cr_run_get(name, projectId = cr_project_get())
```

Arguments

<code>name</code>	The name of the service to retrieve
<code>projectId</code>	The projectId to get from

Details

This returns details on a particular deployed Cloud Run service.

See Also

[Google Documentation on namespaces.services.get](#)

Other Cloud Run functions: [cr_jwt_create\(\)](#), [cr_plumber_pubsub\(\)](#), [cr_run_email\(\)](#), [cr_run_list\(\)](#), [cr_run_schedule_http\(\)](#), [cr_run\(\)](#)

`cr_run_list`*List CloudRun services.*

Description

List the Cloud Run services you have access to

Usage

```
cr_run_list(  
  projectId = cr_project_get(),  
  labelSelector = NULL,  
  limit = NULL,  
  summary = TRUE  
)
```

Arguments

projectId	The GCP project from which the services should be listed
labelSelector	Allows to filter resources based on a label
limit	The maximum number of records that should be returned
summary	If TRUE will return only a subset of info available, set to FALSE for all metadata

See Also

[Google Documentation for Cloud Run](#)

Other Cloud Run functions: [cr_jwt_create\(\)](#), [cr_plumber_pubsub\(\)](#), [cr_run_email\(\)](#), [cr_run_get\(\)](#), [cr_run_schedule_http\(\)](#), [cr_run\(\)](#)

cr_run_schedule_http *Create a Cloud Scheduler HTTP target for a private Cloud Run URI*

Description

This enables Cloud Scheduler to trigger Cloud Run endpoints when they are not public.

Usage

```
cr_run_schedule_http(uri, email, http_method = "GET", body = NULL)
```

Arguments

uri	The URI of your Cloud Run application
email	The service email that has invoke access to the Cloud Run application. If using cr_run and derivatives to make the email this will include (name)-cloudrun-invoker@(project-id).iam.gcpcloud.com - see cr_run_email to help make the email.
http_method	The HTTP verb you have set up your Cloud Run application to receive
body	(optional) An R list object that will be turned into JSON via toJSON and turned into a base64-encoded string if you are doing a POST, PUT or PATCH request.

Details

Ensure you have a service email with [cr_email_set](#) of format service-{project-number}@gcp-sa-cloudscheduler.iam.gcpcloud.com with Cloud Scheduler Service Agent role as per <https://cloud.google.com/scheduler/docs/http-target-auth#add>

Value

A [HttpTarget](#) object for use in [cr_schedule](#)

See Also

<https://cloud.google.com/run/docs/triggering/using-scheduler>

[cr_schedule_http](#) and [cr_run](#) and [cr_deploy_run](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

Other Cloud Run functions: [cr_jwt_create\(\)](#), [cr_plumber_pubsub\(\)](#), [cr_run_email\(\)](#), [cr_run_get\(\)](#), [cr_run_list\(\)](#), [cr_run\(\)](#)

Examples

```
## Not run:
# for unauthenticated apps create a HttpTarget
run_me <- HttpTarget(
  uri = "https://public-ewjogewawq-ew.a.run.app/echo?msg=blah",
  http_method = "GET"
)
cr_schedule("cloud-run-scheduled",
  schedule = "16 4 * * *",
  httpTarget = run_me
)

# for authenticated Cloud Run apps - create with allowUnauthenticated=FALSE
cr_deploy_run("my-app", allowUnauthenticated = TRUE)

## End(Not run)

# deploying via R will help create a service email called my-app-cloudrun-invoker
cr_run_email("my-app")
## Not run:
# use that email to schedule the Cloud Run private micro-service

# schedule the endpoint
my_run_name <- "my-app"
my_app <- cr_run_get(my_run_name)
email <- cr_run_email(my_run_name)
endpoint <- paste0(my_app$status$url, "/fetch_stuff")

app_sched <- cr_run_schedule_http(endpoint,
  http_method = "GET",
  email = email
)

cr_schedule("cloud-run-scheduled-1",
  schedule = "4 16 * * *",
  httpTarget = app_sched
)

## End(Not run)
```

cr_schedule_build *Schedule a Build object via HTTP or PubSub*

Description

Schedule a Build object via HTTP or PubSub

Usage

```
cr_schedule_build(
  build,
  schedule,
  schedule_type = c("http", "pubsub"),
  email = cr_email_get(),
  projectId = cr_project_get(),
  ...
)
```

Arguments

build	A Build object
schedule	A cron schedule e.g. "15 5 * * *"
schedule_type	Whether to use HTTP or PubSub styled schedules
email	The email that will authenticate the job set via cr_email_set
projectId	The GCP project to run within usually set with cr_project_set
...	Arguments passed on to cr_schedule
region	The region usually set with cr_region_set
overwrite	If TRUE and an existing job with the same name exists, will overwrite it with the new parameters
name	Name to call your scheduled job
httpTarget	A HTTP target object HttpTarget
pubsubTarget	A Pub/Sub target object PubsubTarget such as created via cr_schedule_pubsub
description	Optionally caller-specified in CreateJob or
timeZone	Specifies the time zone to be used in interpreting schedule. If set to NULL will be "UTC". Note that some time zones include a provision for daylight savings time.

Details

See also [cr_schedule](#) which you can use by to customise your schedule.

Value

cr_schedule_build returns a cloud scheduler [Job](#) object

cr_schedule_delete *Deletes a scheduled job.*

Description

Deletes a scheduled job.

Usage

```
cr_schedule_delete(  
  x,  
  region = cr_region_get(),  
  projectId = cr_project_get(),  
  pubsub_cleanup = FALSE  
)
```

Arguments

x	The name of the scheduled job or a Job object
region	The region to run within
projectId	The projectId
pubsub_cleanup	If the Cloud Scheduler is pointing at a Build Trigger/PubSub as deployed by cr_deploy_r will attempt to clean up those resources too.

Value

TRUE if job not found or its deleted, FALSE if it could not delete the job

See Also

[cloudscheduler.projects.locations.jobs.delete](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

Examples

```
## Not run:  
cr_project_set("my-project")  
cr_region_set("europe-west1")  
cr_schedule_delete("cloud-build-test1")  
  
## End(Not run)
```

cr_schedule_get *Gets a scheduler job.*

Description

Gets a scheduler job.

Usage

```
cr_schedule_get(name, region = cr_region_get(), projectId = cr_project_get())
```

Arguments

name	Required - a string or a schedule Job object
region	The region to run within
projectId	The projectId

See Also

[Google Documentation](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

Examples

```
## Not run:  
cr_project_set("my-project")  
cr_region_set("europe-west1")  
cr_schedule_get("cloud-build-test1")  
  
## End(Not run)
```

cr_schedule_list *Lists Cloud Scheduler jobs.*

Description

Lists cloud scheduler jobs including targeting, schedule and authentication

Usage

```
cr_schedule_list(region = cr_region_get(), projectId = cr_project_get())
```

Arguments

region	The region to run within
projectId	The projectId

See Also

[Google Documentation](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_schedule_list()

## End(Not run)
```

cr_schedule_pause	<i>Pauses and resumes a scheduled job.</i>
-------------------	--

Description

If a job is paused then the system will stop executing the job until it is re-enabled via [cr_schedule_resume](#).

Usage

```
cr_schedule_pause(x, region = cr_region_get(), projectId = cr_project_get())
cr_schedule_resume(x, region = cr_region_get(), projectId = cr_project_get())
```

Arguments

x	The name of the scheduled job or a Job object
region	The region to run within
projectId	The projectId

Details

The state of the job is stored in state; if paused it will be set to `Job.State.PAUSED`. A job must be in `Job.State.ENABLED` to be paused.

See Also

[cloudscheduler.projects.locations.jobs.pause](#)

[cloudscheduler.projects.locations.jobs.resume](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_run\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_schedule_pause("cloud-build-test1")
cr_schedule_resume("cloud-build-test1")

## End(Not run)
```

cr_schedule_run	<i>Forces a job to run now.</i>
-----------------	---------------------------------

Description

When this method is called, Cloud Scheduler will dispatch the job, even if the job is already running.

Usage

```
cr_schedule_run(x, region = cr_region_get(), projectId = cr_project_get())
```

Arguments

x	The name of the scheduled job or a Job object
region	The region to run within
projectId	The projectId

See Also

[cloudscheduler.projects.locations.jobs.run](#)

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_region_set("europe-west1")
cr_schedule_run("cloud-build-test1")

## End(Not run)
```

cr_setup	<i>A helper setup function for setting up use with googleCloudRunner</i>
----------	--

Description

A helper setup function for setting up use with googleCloudRunner

Usage

```
cr_setup()
```

See Also

Other setup functions: [cr_setup_auth\(\)](#), [cr_setup_service\(\)](#), [cr_setup_test\(\)](#)

cr_setup_auth	<i>Create a service account for googleCloudRunner</i>
---------------	---

Description

This will use your Google OAuth2 user to create a suitable service account

Usage

```
cr_setup_auth(
  email = Sys.getenv("GARGLE_EMAIL"),
  file = "googlecloudrunner-auth-key.json",
  session_user = NULL
)
```

Arguments

email	What email to open OAuth2 with
file	Where to save the authentication file
session_user	1 for user level, 2 for project level, leave NULL to be prompted

Value

TRUE if the file is ready to be setup by `cr_setup`, FALSE if need to stop

See Also

Other setup functions: `cr_setup_service()`, `cr_setup_test()`, `cr_setup()`

<code>cr_setup_service</code>	<i>Give a service account the right permissions for googleCloudRunner operations</i>
-------------------------------	--

Description

Give a service account the right permissions for googleCloudRunner operations

Usage

```
cr_setup_service(
  account_email,
  roles = cr_setup_role_lookup("local"),
  json = Sys.getenv("GAR_CLIENT_JSON"),
  email = Sys.getenv("GARGLE_EMAIL")
)

cr_setup_role_lookup(
  type = c("local", "cloudrun", "bigquery", "secrets", "cloudbuild", "cloudstorage",
    "schedule_agent", "run_agent", "compute")
)
```

Arguments

<code>account_email</code>	The service account email e.g. <code>accountId@projectid.iam.gserviceaccount.com</code> or <code>12345678@cloudbuild.gserviceaccount.com</code>
<code>roles</code>	the roles to grant access - default is all googleCloudRunner functions
<code>json</code>	the project clientId JSON
<code>email</code>	the email of an Owner/Editor for the project
<code>type</code>	the role

See Also

Other setup functions: `cr_setup_auth()`, `cr_setup_test()`, `cr_setup()`

cr_setup_test	<i>Run tests over your setup</i>
---------------	----------------------------------

Description

This allows you to check if your setup works - run [cr_setup](#) first.

Usage

```
cr_setup_test(  
  option = c("menu", "all", "docker", "plumber", "r_script", "r_schedule")  
)
```

Arguments

option	Default will use an interactive menu, select other option to run that test without a menu
--------	---

See Also

Other setup functions: [cr_setup_auth\(\)](#), [cr_setup_service\(\)](#), [cr_setup\(\)](#)

Examples

```
## Not run:  
# start the menu for interactive use  
cr_setup_test()  
  
# skip menu and run all tests  
cr_setup_test("all")  
  
# run just the plumber deployment test  
cr_setup_test("plumber")  
  
## End(Not run)
```

cr_sourcerepo_list	<i>List source repositories available under a project</i>
--------------------	---

Description

List source repositories available under a project

Usage

```
cr_sourcerepo_list(projectId = cr_project_get())
```

Arguments

projectId The projectId that holds the repositories

GitHubEventsConfig *GitHubEventsConfig Object*

Description

GitHubEventsConfig Object

Usage

```
GitHubEventsConfig(
  x,
  event = c("push", "pull"),
  branch = ".*",
  tag = NULL,
  commentControl = c("COMMENTS_DISABLED", "COMMENTS_ENABLED")
)
```

Arguments

x The repository in format owner/repo e.g. MarkEdmondson1234/googleCloudRunner

event Whether to trigger on push or pull GitHub events

branch Regex of branches to match

tag If a push request, regexes matching what tags to build. If not NULL then argument branch will be ignored

commentControl If a pull request, whether to require comments before builds are triggered.

Details

The syntax of the regular expressions accepted is the syntax accepted by RE2 and described at <https://github.com/google/re2/wiki/Syntax>

Value

GitHubEventsConfig object

See Also

Other BuildTrigger functions: [BuildTrigger\(\)](#), [cr_buildtrigger_copy\(\)](#), [cr_buildtrigger_delete\(\)](#), [cr_buildtrigger_edit\(\)](#), [cr_buildtrigger_get\(\)](#), [cr_buildtrigger_list\(\)](#), [cr_buildtrigger_pubsub\(\)](#), [cr_buildtrigger_repo\(\)](#), [cr_buildtrigger_run\(\)](#), [cr_buildtrigger_webhook\(\)](#), [cr_buildtrigger\(\)](#)

googleCloudRunner	<i>Launch R scripts into the Google Cloud via Cloud Build, Cloud Run and Cloud Scheduler</i>
-------------------	--

Description

See website for more details: <https://code.markedmondson.me/googleCloudRunner/>

HttpTarget	<i>HttpTarget Object</i>
------------	--------------------------

Description

HttpTarget Object

Usage

```
HttpTarget(
  headers = NULL,
  body = NULL,
  oauthToken = NULL,
  uri = NULL,
  oidcToken = NULL,
  httpMethod = NULL
)
```

Arguments

headers	A named list of HTTP headers e.g. <code>list(Blah = "yes", Boo = "no")</code>
body	HTTP request body. Just send in the R object/list, which will be base64encoded correctly
oauthToken	If specified, an OAuth token will be generated and attached as an Authorization header in the HTTP request. This type of authorization should be used when sending requests to a GCP endpoint.
uri	Required
oidcToken	If specified, an OIDC token will be generated and attached as an Authorization header in the HTTP request. This type of authorization should be used when sending requests to third party endpoints or Cloud Run.
httpMethod	Which HTTP method to use for the request

Value

HttpTarget object

See Also

<https://cloud.google.com/scheduler/docs/reference/rest/v1/projects.locations.jobs#HttpTarget>

Other Cloud Scheduler functions: [Job\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

Job	<i>Job Schedule Object</i>
-----	----------------------------

Description

Job Schedule Object

Usage

```
Job(
  name = NULL,
  description = NULL,
  schedule = NULL,
  timeZone = NULL,
  userUpdateTime = NULL,
  state = NULL,
  status = NULL,
  scheduleTime = NULL,
  lastAttemptTime = NULL,
  retryConfig = NULL,
  attemptDeadline = NULL,
  pubsubTarget = NULL,
  appEngineHttpTarget = NULL,
  httpTarget = NULL
)
```

Arguments

name	Name to call your scheduled job
description	Optionally caller-specified in CreateJob or
schedule	A cron schedule e.g. "15 5 * * *"
timeZone	Specifies the time zone to be used in interpreting schedule. If set to NULL will be "UTC". Note that some time zones include a provision for daylight savings time.
userUpdateTime	Output only
state	Output only
status	Output only
scheduleTime	Output only

lastAttemptTime	Output only
retryConfig	Settings that determine the retry behavior
attemptDeadline	The deadline for job attempts
pubsubTarget	A Pub/Sub target object PubsubTarget such as created via cr_schedule_pubsub
appEngineHttpTarget	App Engine HTTP target
httpTarget	A HTTP target object HttpTarget

Details

Configuration for a job. The maximum allowed size for a job is 100KB.

Value

Job object

See Also

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [PubsubTarget\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

PubsubConfig	<i>Pubsub Config (Build Trigger)</i>
--------------	--------------------------------------

Description

PubsubConfig describes the configuration of a trigger that creates a build whenever a Pub/Sub message is published.

Usage

```
PubsubConfig(
  subscription = NULL,
  topic = NULL,
  serviceAccountEmail = NULL,
  state = NULL
)
```

Arguments

subscription	Output only. Name of the subscription.
topic	The name of the topic from which this subscription is receiving messages.
serviceAccountEmail	Service account that will make the push request.
state	Potential issues with the underlying Pub/Sub subscription configuration. Only populated on get requests.

Value

A PubsubConfig object

See Also

`'https://cloud.google.com/build/docs/api/reference/rest/v1/projects.locations.triggers#BuildTrigger.PubsubConfig'`

PubsubTarget

Pubsub Target Object (Cloud Scheduler)

Description

Pubsub Target Object (Cloud Scheduler)

Usage

```
PubsubTarget(topicName = NULL, data = NULL, attributes = NULL)
```

Arguments

topicName	The name of the Cloud Pub/Sub topic to which messages will be published when a job is delivered.
data	The message payload for PubsubMessage. An R object that will be turned into JSON via [jsonlite] and then base64 encoded into the PubSub format.
attributes	Attributes for PubsubMessage.

Details

Pub/Sub target. The job will be delivered by publishing a message to the given Pub/Sub topic.

Value

PubsubTarget object

See Also

Other Cloud Scheduler functions: [HttpTarget\(\)](#), [Job\(\)](#), [cr_build_schedule_http\(\)](#), [cr_run_schedule_http\(\)](#), [cr_schedule_delete\(\)](#), [cr_schedule_get\(\)](#), [cr_schedule_list\(\)](#), [cr_schedule_pause\(\)](#), [cr_schedule_run\(\)](#)

RepoSource	<i>RepoSource Object</i>
------------	--------------------------

Description

RepoSource Object

Usage

```
RepoSource(  
  repoName = NULL,  
  tagName = NULL,  
  commitSha = NULL,  
  branchName = NULL,  
  dir = NULL,  
  projectId = NULL  
)
```

Arguments

repoName	Name of the Cloud Source Repository
tagName	Regex matching tags to build
commitSha	Explicit commit SHA to build
branchName	Regex matching branches to build e.g. ".*"
dir	Directory, relative to the source root, in which to run the build
projectId	ID of the project that owns the Cloud Source Repository

Details

Location of the source in a Google Cloud Source Repository.

Only one of commitSha, branchName or tagName are allowed.

If you want to use GitHub or BitBucket repos, you need to setup mirroring them via Cloud Source Repositories <https://source.cloud.google.com/>

Value

RepoSource object

See Also

Other Cloud Build functions: [Build\(\)](#), [Source\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```

cr_project_set("my-project")
cr_bucket_set("my-bucket")
## Not run:

my_repo <- cr_build_source(
  RepoSource("github_markedmondson1234_googlecloudrunner",
    branchName = "master"
  )
)

build <- cr_build(
  cr_build_yaml(
    steps =
      cr_buildstep("gcloud", c("-c", "ls -la"),
        entrypoint = "bash",
        dir = ""
      )
    ),
  source = my_repo
)

## End(Not run)

```

Source

Source Object

Description

It is suggested to use [cr_build_source](#) instead to build sources

Usage

```
Source(storageSource = NULL, repoSource = NULL)
```

Arguments

`storageSource` If provided via [StorageSource](#), get the source from this location in Google Cloud Storage

`repoSource` If provided via [RepoSource](#), get the source from this location in a Cloud Source

Details

Location of the source in a supported storage service.

Value

Source object

See Also

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [StorageSource\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```
cr_project_set("my-project")
cr_bucket_set("my-bucket")
my_gcs_source <- Source(storageSource = StorageSource(
  "my_code.tar.gz",
  "gs://my-bucket"
))
my_repo_source <- Source(repoSource = RepoSource("https://my-repo.com",
  branchName = "master"
))
## Not run:

build1 <- cr_build("cloudbuild.yaml", source = my_gcs_source)
build2 <- cr_build("cloudbuild.yaml", source = my_repo_source)

## End(Not run)
```

StorageSource	<i>StorageSource Object</i>
---------------	-----------------------------

Description

StorageSource Object

Usage

```
StorageSource(object, bucket = NULL, generation = NULL)
```

Arguments

object	Google Cloud Storage object containing the source. This object must be a gzipped archive file (.tar.gz) containing source to build.
bucket	Google Cloud Storage bucket containing the source
generation	Google Cloud Storage generation for the object. If the generation is omitted, the latest generation will be used.

Details

Location of the source in an archive file in Google Cloud Storage.

Value

StorageSource object

See Also

Other Cloud Build functions: [Build\(\)](#), [RepoSource\(\)](#), [Source\(\)](#), [cr_build_artifacts\(\)](#), [cr_build_list\(\)](#), [cr_build_logs\(\)](#), [cr_build_make\(\)](#), [cr_build_status\(\)](#), [cr_build_targets\(\)](#), [cr_build_upload_gcs\(\)](#), [cr_build_wait\(\)](#), [cr_build_write\(\)](#), [cr_build_yaml_artifact\(\)](#), [cr_build_yaml_secrets\(\)](#), [cr_build_yaml\(\)](#), [cr_build\(\)](#)

Examples

```
## Not run:
cr_project_set("my-project")
cr_bucket_set("my-bucket")
# construct Source object
my_gcs_source <- Source(storageSource = StorageSource(
  "my_code.tar.gz",
  "gs://my-bucket"
))
build1 <- cr_build("cloudbuild.yaml", source = my_gcs_source)

# helper that tars and adds to Source() for you
my_gcs_source2 <- cr_build_upload_gcs("my_folder")
build2 <- cr_build("cloudbuild.yaml", source = my_gcs_source2)

## End(Not run)
```

WebhookConfig

WebhookConfig (Build Triggers)

Description

WebhookConfig describes the configuration of a trigger that creates a build whenever a webhook is sent to a trigger's webhook URL.

Usage

```
WebhookConfig(secret, state = NULL)
```

Arguments

secret	Resource name for the secret required as a URL parameter.
state	Potential issues with the underlying Pub/Sub subscription configuration. Only populated on get requests.

Value

A WebhookConfig object

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