





Docker Images

About Docker Images

What is a Docker Image?

- An Image defines a Docker Container.
 - Similar in concept to a snapshot of a VM.
 - Or a class vs an instance of the class.
- Images are immutable.
 - Once built, the files making up an image do not change.

Image Layers

- Images are built in layers.
- Each layer is an immutable file, but is a collection of files and directories.
- Layers receive an ID, calculated via a SHA 256 hash of the layer contents.
- Thus, if the layer contents change, the SHA 256 hash changes also.

```
},
"RootFS": {
  "Type": "layers",
  "Layers": [
    "sha256:a2ae92ffcd29f7ededa0320f4a4fd709a723beae9a4e681696874932db7aee2c",
    "sha256:019432d9cc3b83eaa169411e24c7be15421dc2ddda0f8505ef9280f15e919574",
    "sha256:640efe6eb73c226da1d9ca1a29777f61b86e2d1f80d93d62ac10deb720cee349",
    "sha256:510c9b374922b8809e1041db4c0f65ac74b10189bfa84c54f8b78f6062721107",
    "sha256:ebc799af5d1c260b1982de51522e2648df2bdd5ce80e67cb673b4723acc11079",
    "sha256:14aeb2cce825abeb7f79a9593ab364ba798b053480a94f0ec875165dc9d49dd7",
    "sha256:05cf5507e065f1342fe6fb6e309c760e96ec2f8c33c643fe50dc15f034c49fa3",
    "sha256:7ec5d77f0d3b747ec279d92e17398be3815cb54ad0d59d1acea365d7c7408000",
    "sha256:03b22923539dde013282a8715cd3fab7f862f08aaaf4ab8b04237e4506a77fd8"
  ]
}
}
```

```
]
MacBook-Pro:~ jt$ docker image inspect mongo
```


Image Ids

- Image Ids are a SHA 256 hash derived from the layers.
 - Thus if the layers of the image changes, the SHA 256 hash changes
- The Image ID listed by docker commands (ie 'docker images') is the first 12 characters of the hash.

Image Tag Names

- The hash values of images are referred to by 'tag' names.
- This concept is very confusing at first.

MacBook-Pro:~ jt\$ docker images -q --no-trunc

sha256:0dfffc7177b06346bcffa76fe056b7a1bab91c4c8c6005dda4e55815482ce08bd
sha256:eb05a0f245ead9608f59b33eb95bfefb771fcd8f5aeb04c734c15ff872ae3020
sha256:78cdcfc394b4eab49b6d64e3e97f303d452019cf2991f801865f26c062a398623
sha256:594dc21de8de7cdae01ecbd4d8a4dedead73756984896a00fce13cbc8c24f38e
sha256:1e56646c94495f1a0213259b194ed88d7a66d1b2f18b75eb0f4475f06156fc76
sha256:c54a2cc56cbb2f04003c1cd4507e118af7c0d340fe7e2720f70976c4b75237dc
sha256:03b4557ad7b98859ac39aee048ce400a664de81cfa625fd7dfa94e61ac7c1947

MacBook-Pro:~ jt\$ docker images

REPOSITORY	TAG	IMAGE ID
mongo	latest	0dfffc7177b06
postgres	latest	eb05a0f245ea
mysql	latest	78cdcfc394b4e
mysql	<none>	594dc21de8de
docker.bintray.io/jfrog/artifactory-oss	latest	1e56646c9449
hello-world	latest	c54a2cc56cbb
kitematic/hello-world-nginx	latest	03b4557ad7b9

MacBook-Pro:~ jt\$

Image Tag Names

- The format of the full tag name is: [REGISTRYHOST/] [USERNAME/]NAME[:TAG]
- For Registry Host 'registry.hub.docker.com' is inferred
- For ':TAG' - 'latest' is default, and inferred.
- Full tag example: registry.hub.docker.com/mongo:latest

REPOSITORY
mongo
postgres

TAG
latest
latest



