Diving Deeper with Dockerfile

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Module Outline

The Build Cache

Dockerfile and Layers

Dockerfile Instructions

- CMD, ENTRYPOINT, ENV, VOLUME

Dockerfile

Plain-text

Simple format

Instructions to
build image

Docerkfile

Docerkfile

FROM 123
INSTRUCTION abc
INSTRUCTION def
INSTRUCTION ghi
INSTRUCTION jkl

Docerkfile

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FROM 123
INSTRUCTION abc
INSTRUCTION def
INSTRUCTION ghi
INSTRUCTION jkl

Build Cache

INSTRUCTION abc
Linked to Image 123

INSTRUCTION xyz
Linked to Image 789

Docerkfile

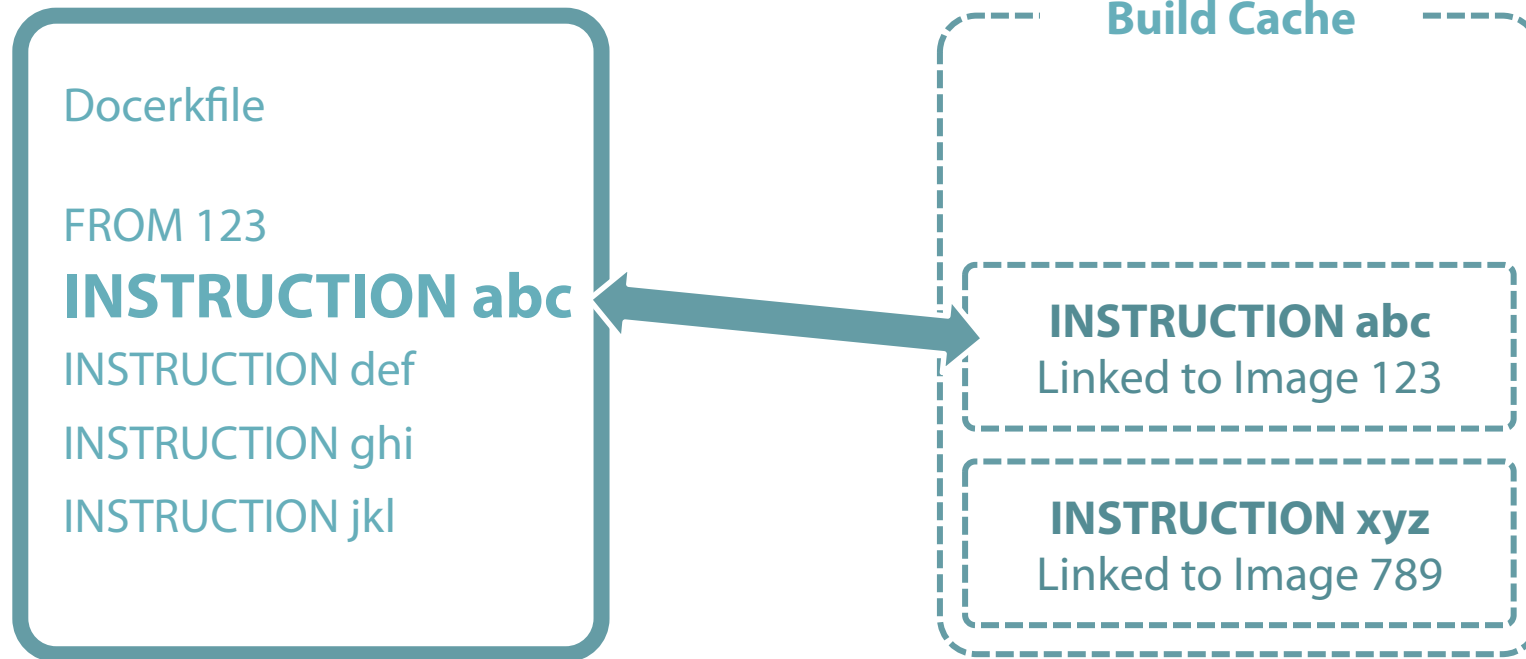FROM 123
INSTRUCTION abc
INSTRUCTION def
INSTRUCTION ghi
INSTRUCTION jkl

Build Cache

INSTRUCTION abc
Linked to Image 123

INSTRUCTION xyz
Linked to Image 789

CMD

Run-time

Run commands in
containers at launch time

Equivalent of -
```
docker run <args> <command>
docker run <args> /bin/bash
```

One per Dockerfile

RUN

Build-time

Add layers to images

Used to install apps

Shell Form

Commands are expressed the same way as shell commands

Commands get prepended by "`/bin/sh -c`"

Variable expansion etc…

Exec Form

JSON array style - ["command", "arg1"]

Containers don't need a shell

Avoids string munging by the shell

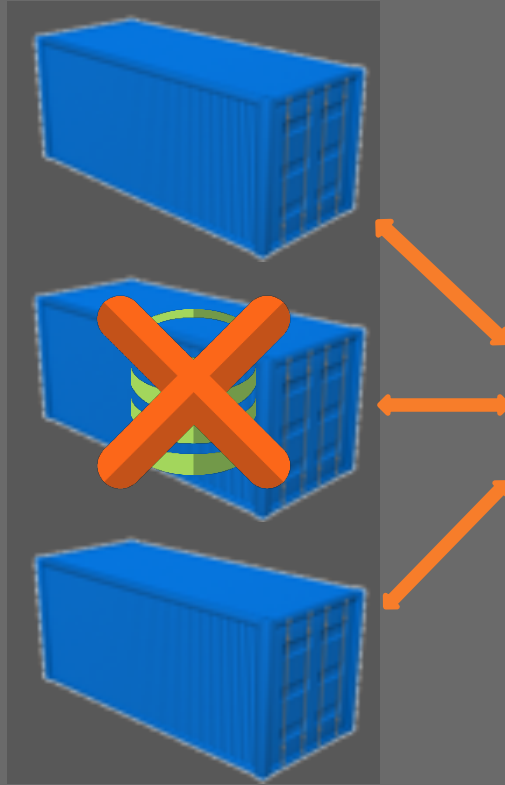No shell features –
No variable expansion
No special characters (`&&`, `||`, `>`….)

ENTRYPOINT

Can't be overridden at run-time with normal commands –
`docker run … <command>`

Any command at run-time is used as an argument to
ENTRYPOINT

Variable expansion etc…
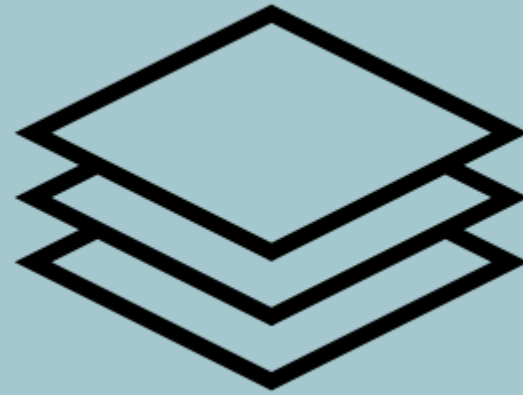
Module Recap

Build Cache

INSTRUCTION abc
Linked to Image 123

INSTRUCTION xyz
Linked to Image 789

Build Cache

RUN apt-get update
RUN apt-get install –y abc
RUN apt-get install –y def

RUN apt-get update \
&& apt-get install –y \
abc \
def

Dockerfile and Layers

Dockerfile

CMD /usr/sbin/apache2ctl

ENTRYPOINT
/usr/sbin/apache2ctl

ENV var=value

VOLUMES /data

Dockerfile Instructions