Dockerfile Best Practices

Dockefile from stdin

Building an image on the fly, w/o using a static file

```
touch myfile.sh
chmod +x myfile.sh
docker build -t foo . -f-<<EOF
FROM ubuntu:18.04
RUN echo ”hello world”
COPY myfile.sh /opt/
EOF
```

Dockerfile with a remote context

```
docker build -t foo \
       https://github.com/thajeztah/pgadmin4-docker.git \
       -f-<<EOF
       FROM ubuntu:18.04
       WORKDIR /usr/local/lib/python2.7/site-packages
       COPY LICENSE pgadmin4/
       COPY config_distro.py pgadmin4/
       EOF
```

Dockerfile ignore files

Unwanted files can be excluded from the context, by convention a `.dockerignore` file is required and using regular expression is possible to exclude files.

Dockefile ignore files

Rule	Behavior
#	defines a comment
/temp	Exclude files and directories whose names start with temp in any immediate subdirectory of the root.For example, the plain file `/somedir/temporary.txt` is excluded, as is the directory `/somedir/temp`.
//temp*	Exclude files and directories starting with temp from any subdirectory that is two levels below the root. For example, `/somedir/subdir/temporary.txt` is excluded.
temp?	Exclude files and directories in the root directory whose names are a one-character extension of temp. For example, `/tempa` and `/tempb` are excluded.

Dockefile make it human readble

When possible sorting multi-line arguments is recommended

```
RUN apt-get update &&\
    apt-get install -y \
        bzr \
        csv \
        git \
        mercurial \
        subversion \
        texlive
```

Dockerfile quick tips

- Annotate the image with `LABEL`
- Use `ENV` for keeping track of versions
- `COPY` is more transparent than `ADD`
- Use `wget` or `curl` for downloading from the web
- The web does not guarantee URLs forever.
  - Consider to host a web/fileserver for *very imporant* data or software.
  - Licensing can be an issue, some software can not be distributed freely
- Use `WORKDIR` when possible
- Image as executable ? `ENTRYPOINT` is the way to go
  - `CMD` is used for default parameters `--help`
- A regular user with `root` privileges is worst than evil
  - This applies only if it is your infrastrucure :)
  - In most scientific infrastructures Docker is forbidden or masked by some wrapper