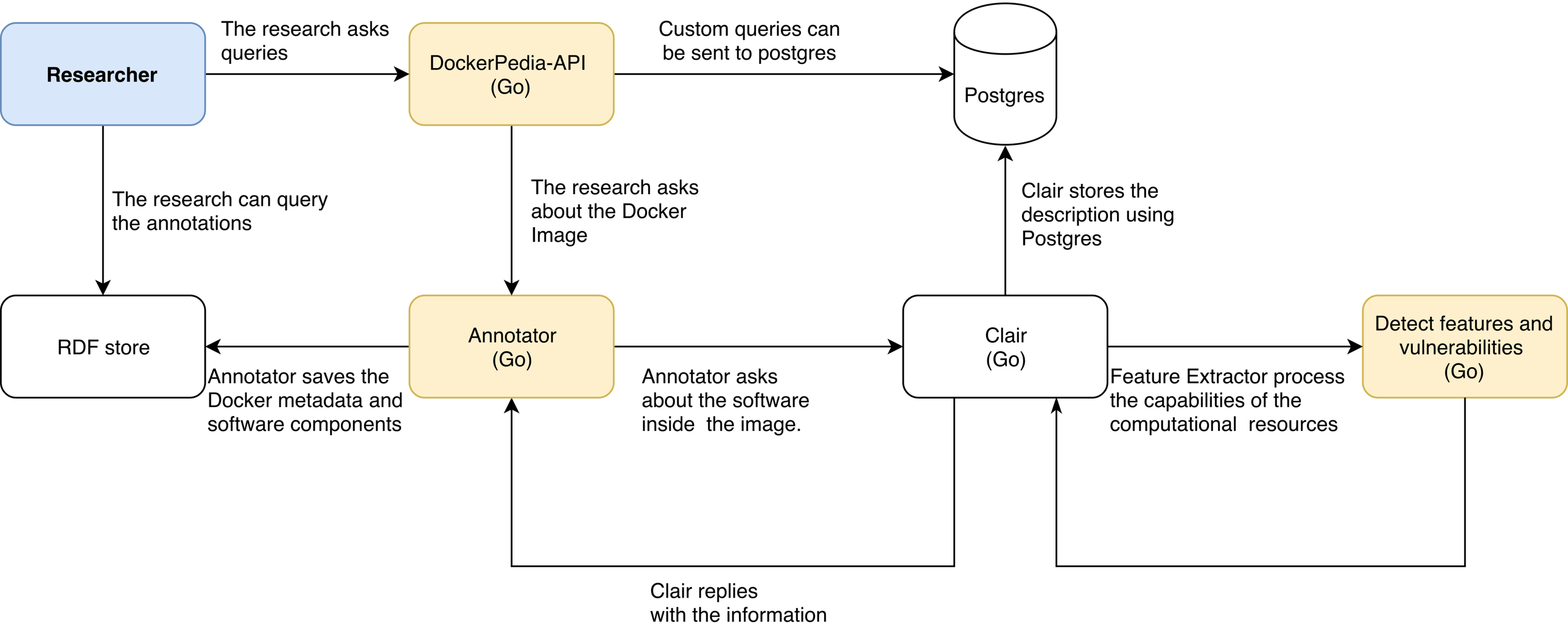
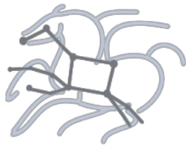
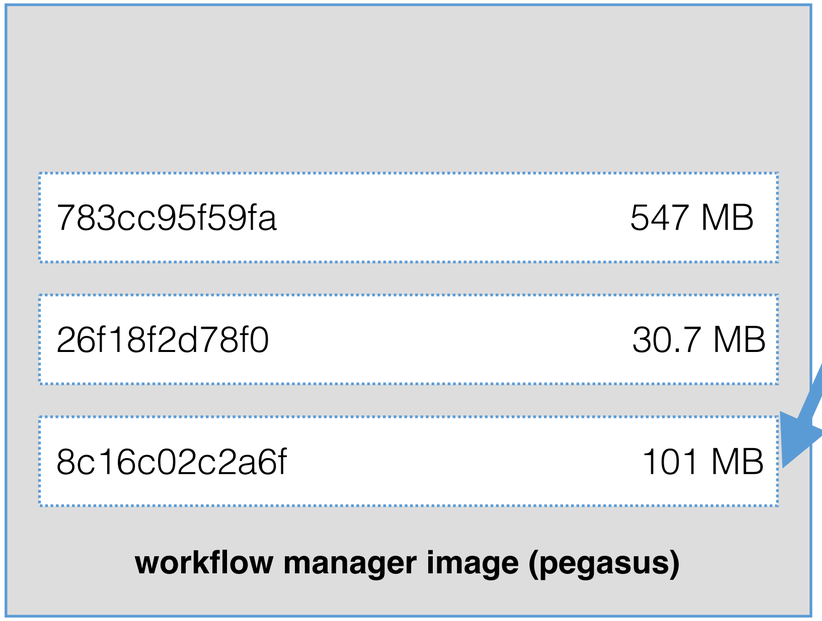
DOCKERPEDIA



LAYERS

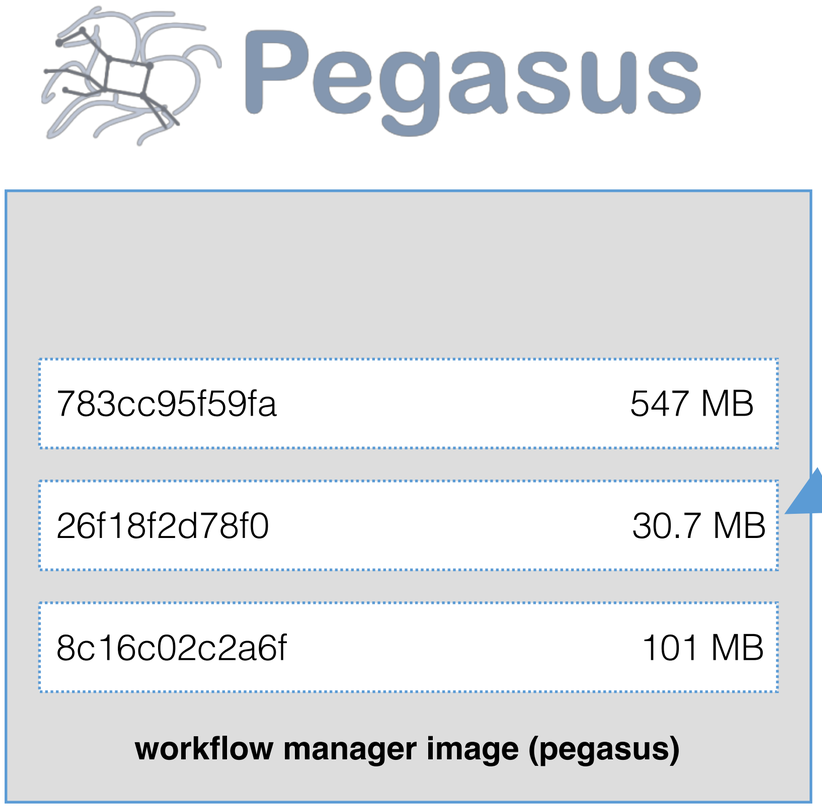


Pegasus



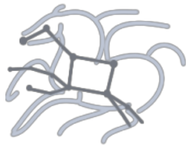

```
FROM ubuntu:16.04

# Pick up some TF dependencies
RUN apt-get update && apt-get install -y --
no-install-recommends \
        wget \
        gnupg
RUN DEBIAN_FRONTEND=noninteractive apt-get
install -y --no-install-recommends pegasus
condor
```

LAYERS

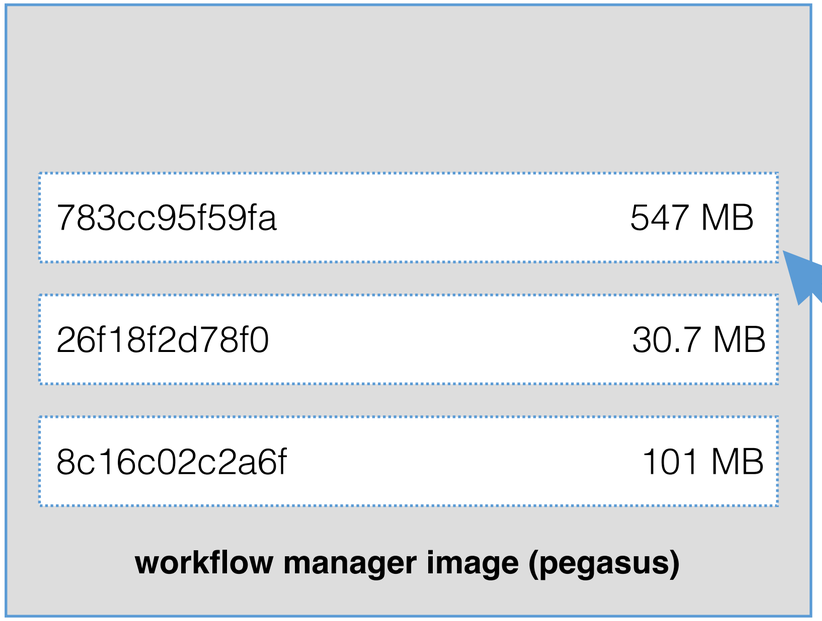



```
FROM ubuntu:16.04

# Pick up some TF dependencies
RUN apt-get update && apt-get install -y --
no-install-recommends \
        wget \
        gnupg
RUN DEBIAN_FRONTEND=noninteractive apt-get
install -y --no-install-recommends pegasus
condor
```

LAYERS



Pegasus




```
FROM ubuntu:16.04

# Pick up some TF dependencies
RUN apt-get update && apt-get install -y --
no-install-recommends \
        wget \
        gnupg
RUN DEBIAN_FRONTEND=noninteractive apt-get
install -y --no-install-recommends pegasus
condor
```

DETECT THE SOFTWARE

1. Get the manifest and find out the layers.

MANIFEST

```
        "Id":
"sha256:a8a9cd00e33a23810ba3766df4b238f3012003bd5c813176df0133781da05099",
        "RepoTags": [
            "dockerpedia/internal_extinction:latest"
        ],
```

Name and ID

MANIFEST

```
            "Env": [
                "PATH=/opt/conda/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/
usr/bin:/sbin:/bin",
                "LANG=C.UTF-8",
                "LC_ALL=C.UTF-8"
            ],
```

Environment variables

MANIFEST


```
"Labels": {
  "org.opencontainers.image.created": "2018-11-09T15:31:13Z",
  "org.opencontainers.image.description": "The int_ext workflow
(Filgueira et al., 2015) calculates the internal extinction factor of
galaxies. Using the galaxy catalog provided by AMIGA",
  "org.opencontainers.image.title": "Internal-Extinction",
  "org.opencontainers.image.url": "https://github.com/rosafilgueira/
dispel4py_workflows",
  "org.opencontainers.image.source": "https://github.com/dockerpedia/
internal_extinction",
  "org.opencontainers.image.revision": "1eb765a",
  "org.opencontainers.image.vendor": "DockerPedia",
}
```

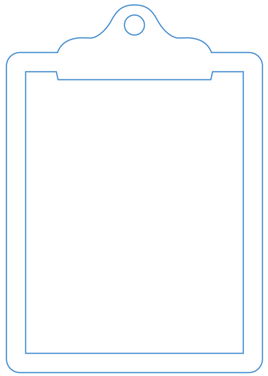

Labels: Open Containers Initiative

MANIFEST

```
        "RootFS": {
            "Type": "layers",
            "Layers": [

"sha256:b28ef0b6fef80faa25436bec0a1375214d9a23a91e9b75975bba3b2889f8504f",
"sha256:60b398413f86c0f8ac3d5d4a116c6b3bc364d4a2df404df5dca7cfe6609417c3",
"sha256:74171e7e24f5b1eaa4ef8f88f91c18074f96b65c825988dedc01ee36a67d5db3",
"sha256:0181f1fb679b1feb6d2ab9094b9da247fa6e3808fae46ea4c2e937699e64c623",
"sha256:e1a41f297fa063ecd3ac1c93475492c47ddda2547e2bbc446f51511b416521a8",
"sha256:487e45a84e7804ad811e706369f4f91c5cc1e1edb79199498c5d4cf2055294cf",
"sha256:6a1c105daa4890b7040b81e5c72ad4b17fd4dc05fdd43141edd84c4bb4bac2e5",
"sha256:3d0d864daecc292f3007cd4c451e14dd815a2331cbe1d57878e91d74f6641c9f"
            ]
        },
```

Layers

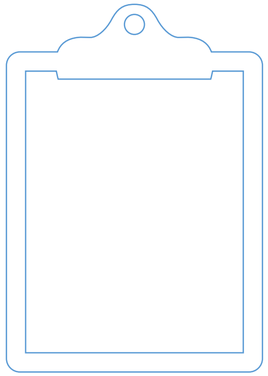
Debian Package Manager



/var/lib/dpkg/status

Package: bzip2
Status: install ok installed
Priority: standard
Section: utils
Installed-Size: 184
Maintainer: Anibal Monsalve Salazar <anibal@debian.org>
Architecture: amd64
Multi-Arch: foreign
Version: 1.0.6-8.1
Replaces: libbz2 (<< 0.9.5d-3)
Depends: libbz2-1.0 (= 1.0.6-8.1), libc6 (>= 2.14)
Suggests: bzip2-doc
Description: high-quality block-sorting file compressor - utilities …
Homepage: http://www.bzip.org/

CONDA



conda-meta/requests.json


```
{
  "arch": "x86_64",
  "build": "py27_0",
  "build_number": 0,
  "channel": "https://repo.anaconda.com/pkgs/main/linux-64",
  "constrains": [],
  "depends": [
    "certifi >=2017.4.17",
    "chardet >=3.0.2,<3.1.0",
  ],
  "extracted_package_dir": "/opt/conda/pkgs/requests-2.20.0-py27_0",
  "features": "",
  "files": [
     /python2.7/site-packages/requests-2.20.0.dist-info/INSTALLERâ€šÀÃ¹,
    . . .
  ],
  "fn": "requests-2.20.0-py27_0.tar.bz2",
  "license": "Apache 2.0",
  "link": {
    "source": "/opt/conda/pkgs/requests-2.20.0-py27_0",
    "type": 1
  },
  "md5": "41f9d86d8815f3447732302b1110fd83",
  "name": "requests",
  "package_tarball_full_path": "/opt/conda/pkgs/requests-2.20.0-py27_0.tar.bz2",
  "platform": "linux",
  "requested_spec": "requests",
  "size": 85512,
  "subdir": "linux-64",
  "timestamp": 1540229658467,
  "track_features": "",
  "url": "https://repo.anaconda.com/pkgs/main/linux-64/requests-2.20.0-py27_0.tar.bz2",
  "version": "2.20.0"
}
```

DETECT THE SOFTWARE

1. Get the manifest and find out the layers
2. Download the layers from Docker Hub or private registry
3. Extract the required files to detect the package manager and packages
4. Parse the files and get the software components

EXAMPLE

PUBLIC | AUTOMATED BUILD

dockerpedia/internal_extinction ☆

Last pushed: 5 days ago

Repo Info | Tags | Dockerfile | Build Details | Build Settings | Collaborators | Webhooks | Settings

Short Description

Astrophysics: Internal Extinction of Galaxies codes

Full Description

This repository is dedicated to store "real" workflows that we have implemented for different scientific communities (e.g., Seismologists, Astrophysics, etc) .
Simpler dispel4py workflows can be found here

How to run

First, you must run the container. In this case, the command bash will be executed.

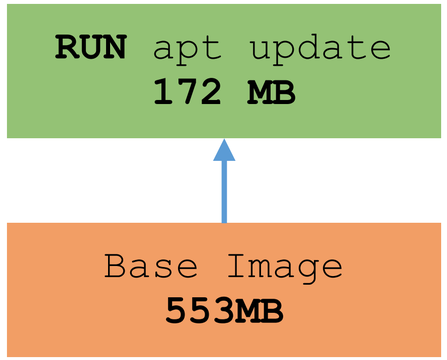
```
docker run --interactive \
       --tty \
       --name internal-extinction \
       dockerpedia/internal_extinction:latest bash
```

And run the workflow

```
root@86642e6f9e6d:/# cd dispel4py_workflows/internal_extinction
root@a0f861e6fbc4:~$ dispel4py multi int_ext_graph.py -d '{"read" : [ {"input" : '
```

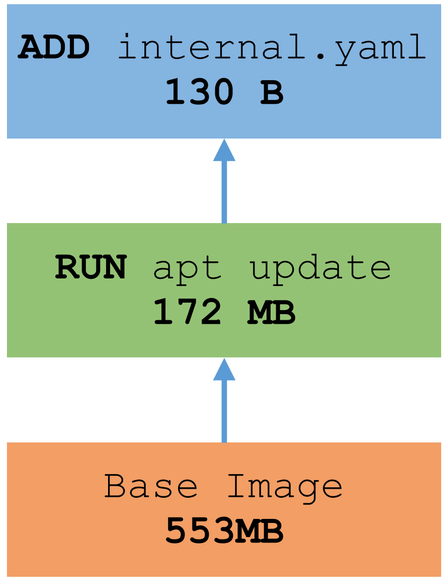
Base Image
553MB

```
FROM continuumio/miniconda
```



RUN apt-get update && apt-get install…

FROM continuumio/miniconda



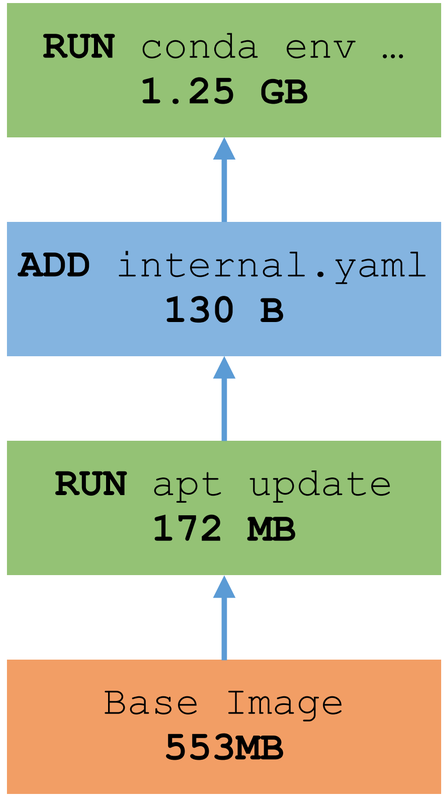

```
ADD internal.yaml /tmp/extinction.yaml
```

```
RUN apt-get update && apt-get install…
```

```
FROM continuumio/miniconda
```

```
name: base
channels:
dependencies:
    - requests=2.20.0=py27_0
    - astropy=2.0.9=py27hdd07704_0
    - pip:
      - "git+git://github.com/sirspock/dispel4py.git@devel"
```

Required python modules

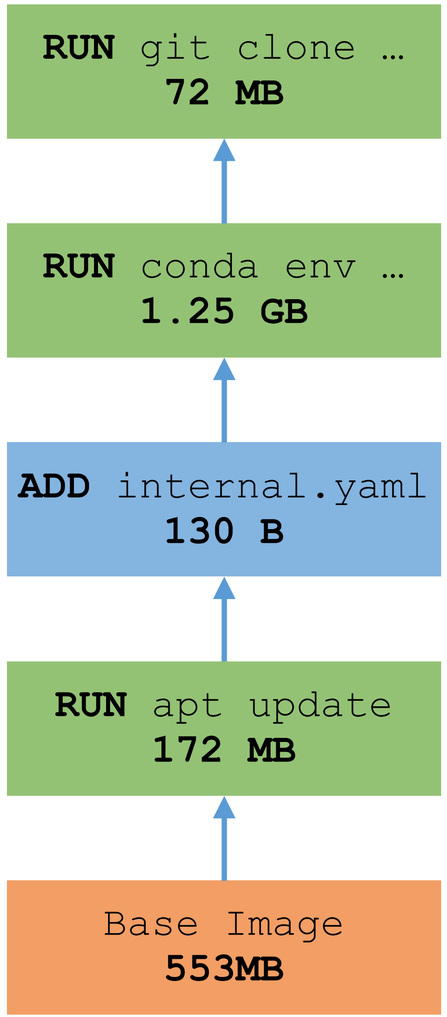


RUN conda **env** update -f /tmp/internal.yaml

ADD internal.yaml /tmp/extinction.yaml

RUN apt-get update && apt-get install…

FROM continuumio/miniconda



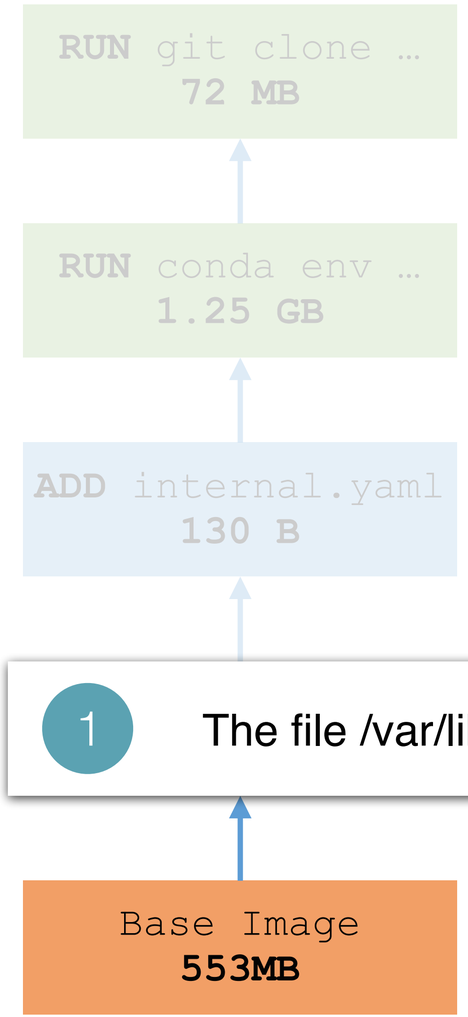
RUN git clone https://github.com/rosafilgueira/dispel4py_workflows.git

RUN conda **env** update -f /tmp/internal.yaml

ADD internal.yaml /tmp/extinction.yaml

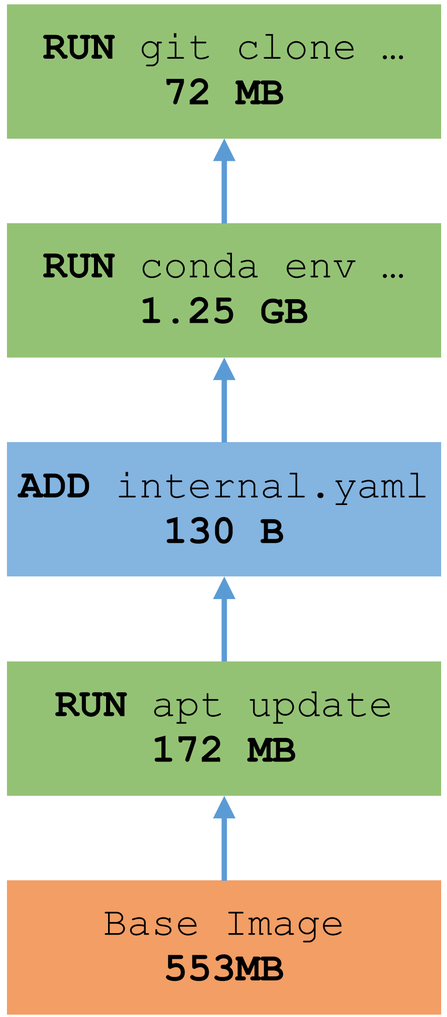
RUN apt-get update && apt-get install…

FROM continuumio/miniconda




```
RUN git clone https://
github.com/rosafilgueira/
dispel4py_workflows.git

RUN conda env update -f /
tmp/internal.yaml

ADD internal.yaml /tmp/
extinction.yaml

apt-get install…

FROM continuumio/miniconda
```

1 The file /var/lib/dpkg/status exists, so the layer is using dpkg.



RUN git clone https://github.com/rosafilgueira/dispel4py_workflows.git

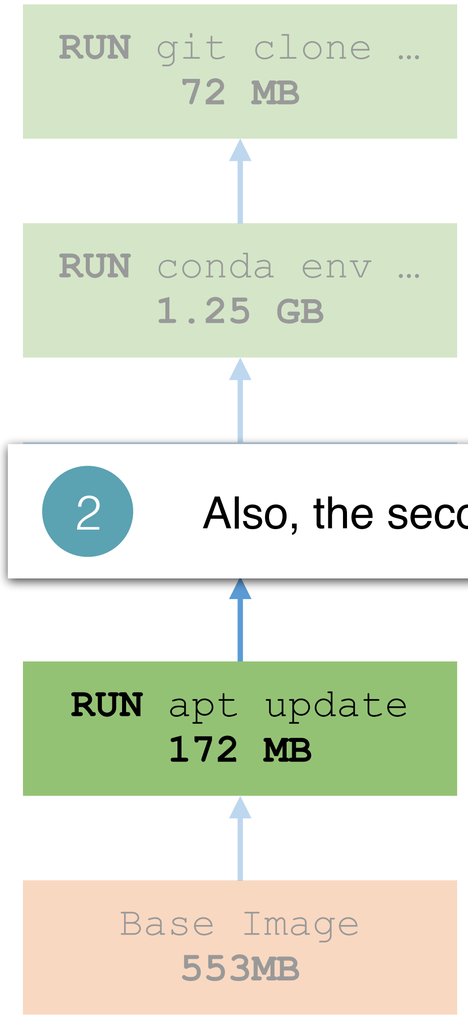
RUN conda **env** update -f /tmp/internal.yaml

ADD internal.yaml /tmp/extinction.yaml

RUN apt-get update && apt-get install…

FROM continuumio/miniconda

dpkg_status

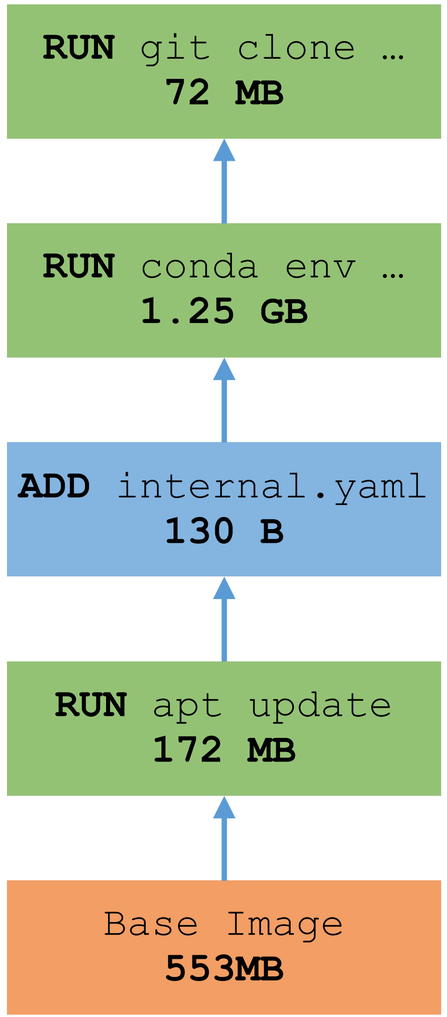



```
RUN git clone https://
github.com/rosafilgueira/
dispel4py_workflows.git

RUN conda env update -f /
tmp/internal.yaml

RUN apt-get update &&
apt-get install…

FROM continuumio/miniconda
```

2 Also, the second layer is related with dpkg

dpkg_status

dpkg_status




```
RUN git clone https://
github.com/rosafilgueira/
dispel4py_workflows.git
```

```
RUN conda env update -f /
tmp/internal.yaml
```

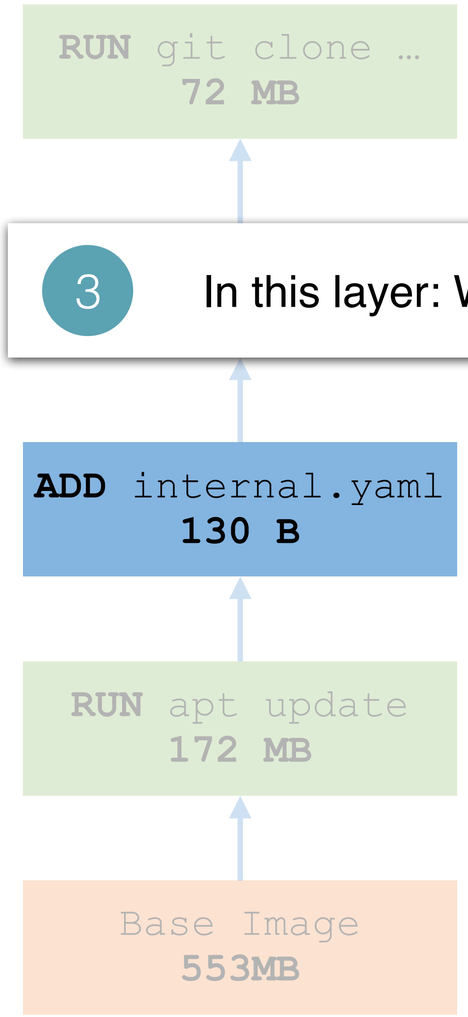
```
ADD internal.yaml /tmp/
extinction.yaml
```

```
RUN apt-get update &&
apt-get install…
```

```
FROM continuumio/miniconda
```

dpkg_status

dpkg_status




```
RUN git clone https://
github.com/rosafilgueira/
dispel4py_workflows.git
```

3 In this layer: We do not install any packages. So, the system does not detect any modification

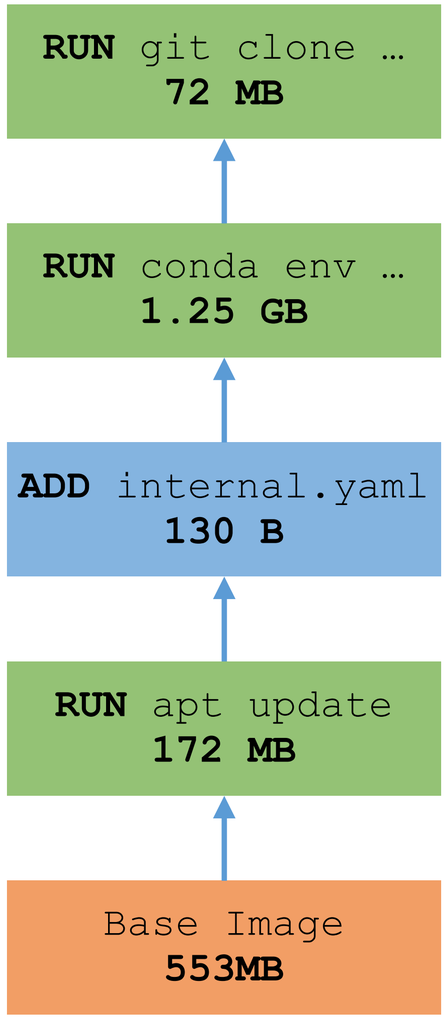
```
ADD internal.yaml /tmp/
extinction.yaml
```

```
RUN apt-get update &&
apt-get install…
```

```
FROM continuumio/miniconda
```

dpkg_status

dpkg_status




```
RUN git clone https://
github.com/rosafilgueira/
dispel4py_workflows.git
```

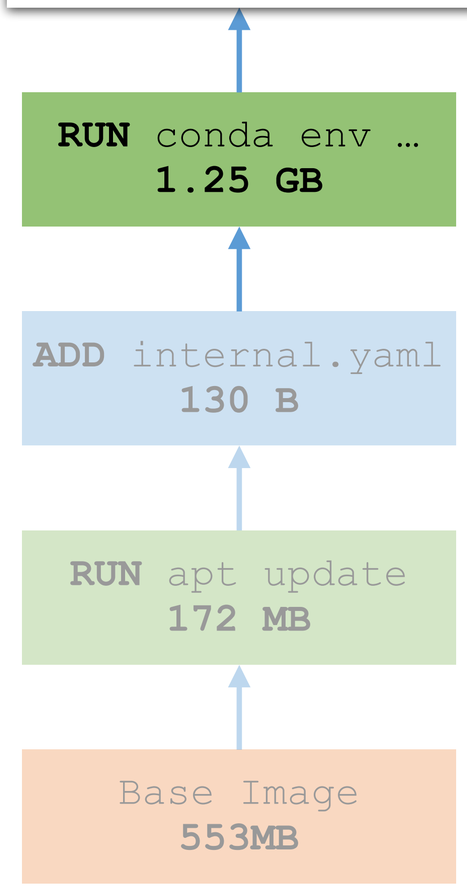
```
RUN conda env update -f /
tmp/internal.yaml
```

```
ADD internal.yaml /tmp/
extinction.yaml
```

```
RUN apt-get update &&
apt-get install…
```

```
FROM continuumio/miniconda
```

4 We detect the package manager conda

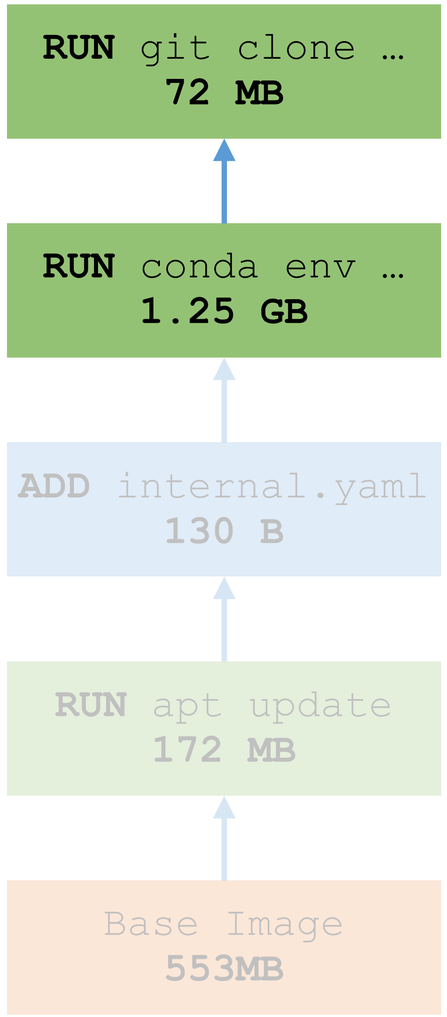



```
dispel4py_workflows.git

RUN conda env update -f /
tmp/internal.yaml

ADD internal.yaml /tmp/
extinction.yaml

RUN apt-get update &&
apt-get install…

FROM continuumio/miniconda
```

pkg 1 pkg 2 pkg 3

dpkg_status

dpkg_status




```
RUN git clone https://
github.com/rosafilgueira/
dispel4py_workflows.git
```

```
RUN conda env update -f /
tmp/internal.yaml
```

```
ADD internal.yaml /tmp/
extinction.yaml
```

```
RUN apt-get update &&
apt-get install…
```

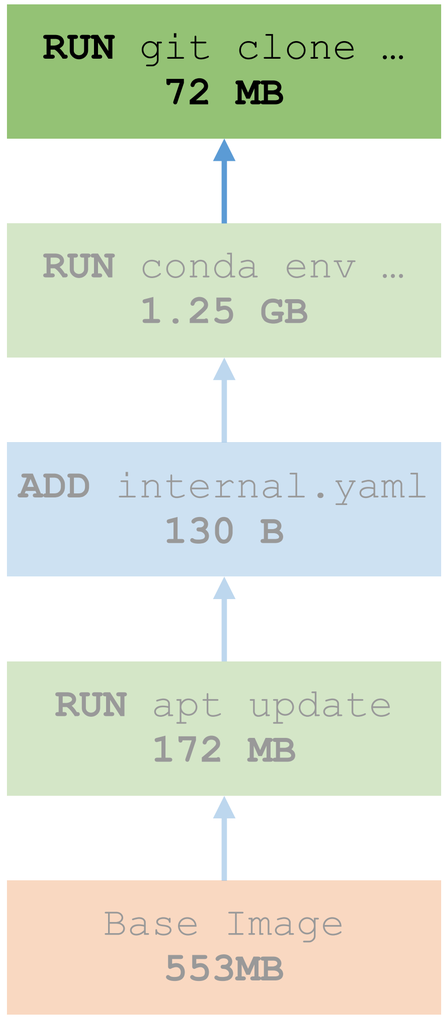
```
FROM continuumio/miniconda
```

pkg 1 | pkg 2 | pkg 3

dpkg_status

dpkg_status

5 In this layer: We do not install any packages. So, the system does not detect any modification




```
RUN git clone https://
github.com/rosafilgueira/
dispel4py_workflows.git

RUN conda env update -f /
tmp/internal.yaml

ADD internal.yaml /tmp/
extinction.yaml

RUN apt-get update &&
apt-get install…

FROM continuumio/miniconda
```

pkg 1 pkg 2 pkg 3

dpkg_status

dpkg_status