

# We reduced our Docker images by 60% with `--no-install-recommends`



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Here at Canonical, we use Dockerfiles on a daily basis for [all our web projects](#). Something that caught our attention recently was the amount of space that we were using for each Docker image, and we realized that we were installing more dependencies than we needed.

In this article, I'll explain how we improved our image build time and reduced the image size by using the flag `--no-install-recommends` in our Dockerfiles.

## Using APT

As you may know, Advanced Package Tool, or APT, is the interface to handle the installation and removal of software on Debian based distributions. It simplifies the process of managing software by automating the retrieval, configuration and installation of software packages.

Every package has different types of dependencies:

- Required packages
- Recommended packages
- Suggested packages

The required packages are mandatory since they are necessary for the correct operation of the package. Still, the recommended and suggested packages are not essential, and they are there to offer some extra functionality that we might not need to use. By default APT will install required and recommended packages.

## Disabling recommended packages

To avoid the installation of recommended packages, we included the flag `--no-install-recommends` when using APT in our Dockerfile.

```
RUN apt-get update && apt-get install --no-install-recommends --yes python3
```

By doing this, we achieve a decrease of around **60%** in our Docker images size.

jp.ubuntu.com	feature	b5896a1364ee	2 weeks ago	185MB
jp.ubuntu.com	master	f57b679d1394	2 weeks ago	550MB
cn.ubuntu.com	feature	7f00d3306fcc	2 weeks ago	270MB
cn.ubuntu.com	master	4845c1aa4663	2 weeks ago	638MB

This obviously will vary according to the dependencies you are using. In our case, we did it for all our Python websites which reduced the size of all our Docker containers significantly. Also, the build time sped up about **15%**.

```
Successfully built 00908df3b515
Successfully tagged cn.ubuntu.com:previous
docker build --build-arg COMMIT_ID=previous -t cn.ubuntu.com:previous . 0.21s user 0.13s system 1% cpu 26.713 total
Successfully built a36d6965c88f
Successfully tagged cn.ubuntu.com:new
docker build --build-arg COMMIT_ID=test -t cn.ubuntu.com:new . 0.26s user 0.06s system 1% cpu 23.725 total
```

I recommend doing this whenever you run `apt install` in your Dockerfiles, and I hope you find it useful if you are trying to reduce the size of your containers.

It is important to keep in mind that doing this could result in some missing libraries in your projects which you may have to add back explicitly, but this will ultimately give you more control in the dependencies in your project.

Happy dockering!



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