5 Docker Extensions to Improve Your Productivity

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docker

Speaker

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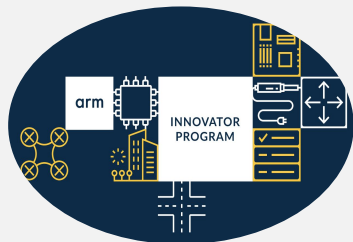
Docker Overview

SaaS	On Desktop	On Server, IoT Edge or in the Cloud	Developer Tools
Docker Hub	Docker Desktop for Mac	Docker Engine	Docker Compose
	Docker Desktop for Windows	Docker Engine support for IoT	Docker Buildkit
	Docker Desktop for Linux		Docker CLI
			Docker Content
			Kubernetes
			Docker Extension

Docker Extensions

Add New Functionality to Docker Desktop

Integrate your workflows and create automation
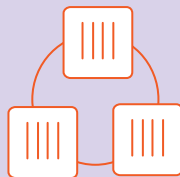
Discover 3rd party tools within Docker Desktop

Allow community & partners to contribute to Docker Desktop

Discover New Tools to solve existing problems

Provide Extensions SDK to create a new Extensions

Docker Extensions SDK

- Build extensions with **React** and **TypeScript** to customize and enhance Docker Desktop

- **Fast development** of your extension with **hot-reloading** - edit code and the changes will be immediately reflected in Docker Desktop

- Seamlessly style integration **with the Docker Material UI Theme** npm package - easily replicate Docker Desktop's look & feel

- **Extensions CLI** - create, manage and validate extensions from your terminal

- Documentation with **tutorials** to help you get started

- Develop extensions on **all platforms**!
  Windows, WSL2, Mac (Intel and Apple Silicon) and Linux

Docker Extensions SDK

- Extensions are packaged as specially formatted Docker images, which our CLI tool helps to build.

- At the root of the image filesystem is a `metadata.json` file which describes the content of the extension. It is a fundamental element of a Docker extension.

- An extension can contain a UI part and backend parts that run either on the host or in the Desktop virtual machine. For further details, see Extension metadata.

- Extensions are distributed through the Docker Hub. Development of extensions can be done locally without the need to push the extension to Docker Hub. See Extensions distribution for further details.

Docker Extensions

Extensions can be installed from our Extensions Marketplace.

Extensions are available now on Docker Hub.

Currently in beta. Not intended for Prod environments

Supported Platforms

- Docker Extensions is available as part of Docker Desktop 4.8.0 or a later release.
- **You don't need to install Extension CLI separately**

```
ajeetraina@Ajeets-MacBook-Pro ~ % docker extension

Usage:  docker extension [OPTIONS] COMMAND

Manages Docker extensions

Options:
      --socket string   The Desktop extension manager socket

Management Commands:
  dev             Extension development helpers

Commands:
  disable         Disable extensions in Docker Desktop
  enable          Enable extensions in Docker Desktop
  init            Create a new desktop extension
  install         Install a Docker extension with the specified image
  ls              List installed Docker extensions
  rm              Removes a Docker extension
  update          removes and re-install a Docker extension
  validate        Validate extension extension image or metadata file
  version         Print the client and server versions

Run 'docker extension COMMAND --help' for more information on a command.
```
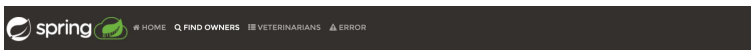
A Curated List of Docker Extensions

India has an estimated pet population of 28–29 million, according to industry estimates.
Spike in ownership boosts pet care retail biz

A Need of Pet Clinic App

Running PetClinic App

Petclinic is a Spring Boot application built using Maven.
You can build a jar file and run it from the command line


```
$ git clone
https://github.com/spring-projects/spring-p
etclinic.git
$ cd spring-petclinic
$ ./mvnw package
$ java -jar target/*.jar
```

9 Tips for Containerizing a Spring Boot App

Automate all the manual tasks
Try building up the JAR during the build process within your Dockerfile itself. Avoid copying the JAR file manually

Use a specific base image tag
The "latest" Docker image tag is unpredictable, hence try to use specific image tags whenever possible

Use Eclipse Temurin instead of JDK
Instead of using the OpenJDK latest Docker image, try to use Ecliplse Temurin, if possible

Use Multi-Stage Build
Multi-Stage build makes the final image more secure and smaller in size

Use .dockerignore
To increase build performance, it is recommended to use .dockerignore file in the same directory as your Dockerfile

Favor Multi-arch Docker image
Always build the Docker image with Multi-Architecture Platform Support

Run Container as non-root user
Running app with user privileges is safe since it helps mitigate risks

Fix security vulnerabilities
Always run security scans on the images to detect any known vulnerabilities like Log4Shell

Measure Java Performance
Use the OpenTelemetry API to ensure that apps are faster and more performant

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https://www.docker.com/blog/9-tips-for-containerizing-your-spring-boot-code/
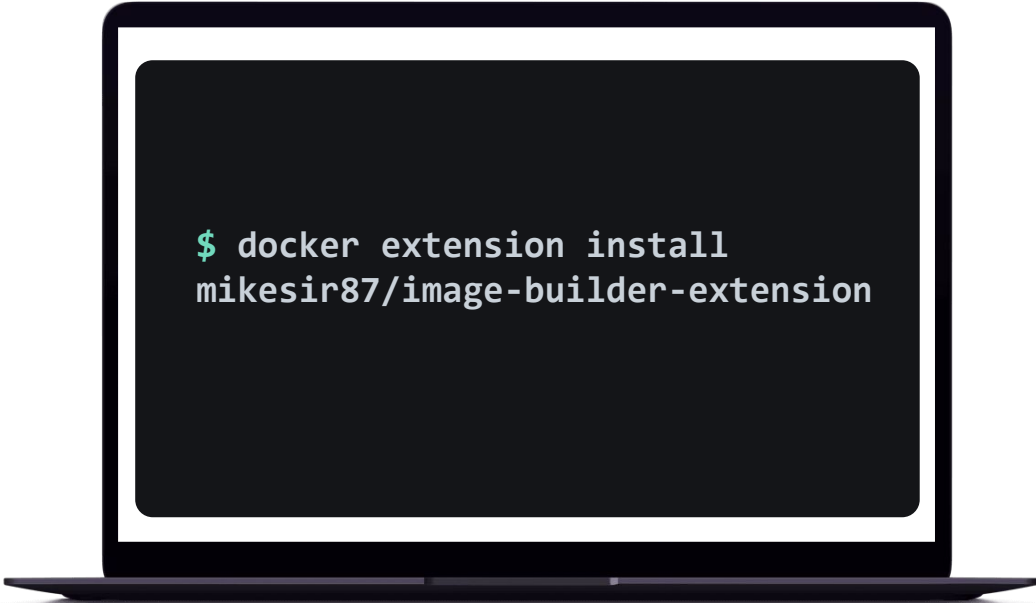
#1. Image Builder Extension

Build your Dockerfile using Extension

```
$ docker extension install
mikesir87/image-builder-extension
```
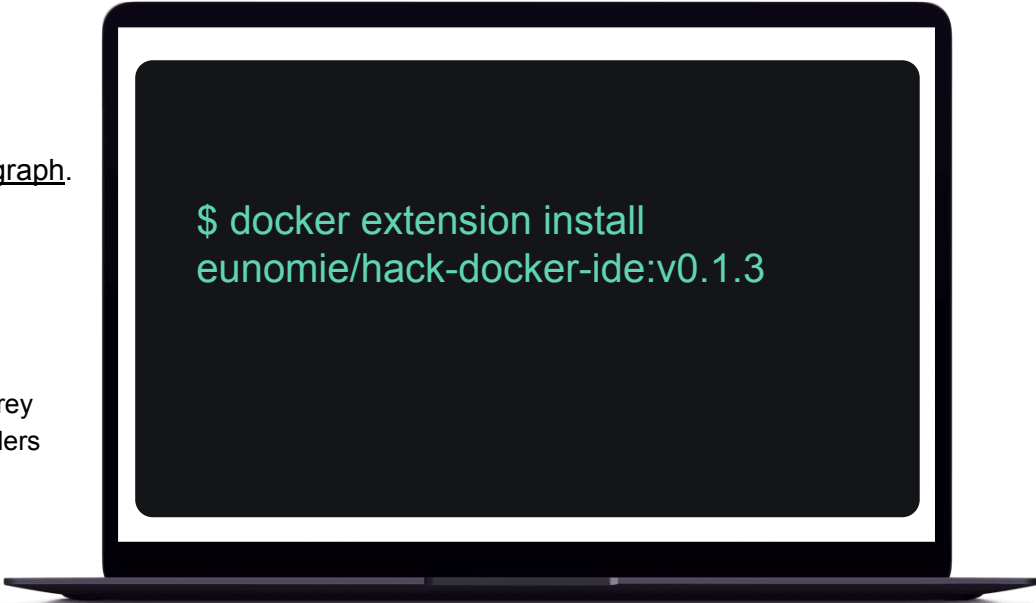
#2. Dockerfile Inspector Extension

Visualizes your MultiStage builds.

- It is based on
  https://github.com/patrickhoefler/dockerfilegraph.

The graph contains the following nodes:
- All build stages
- The default build target highlighted in grey
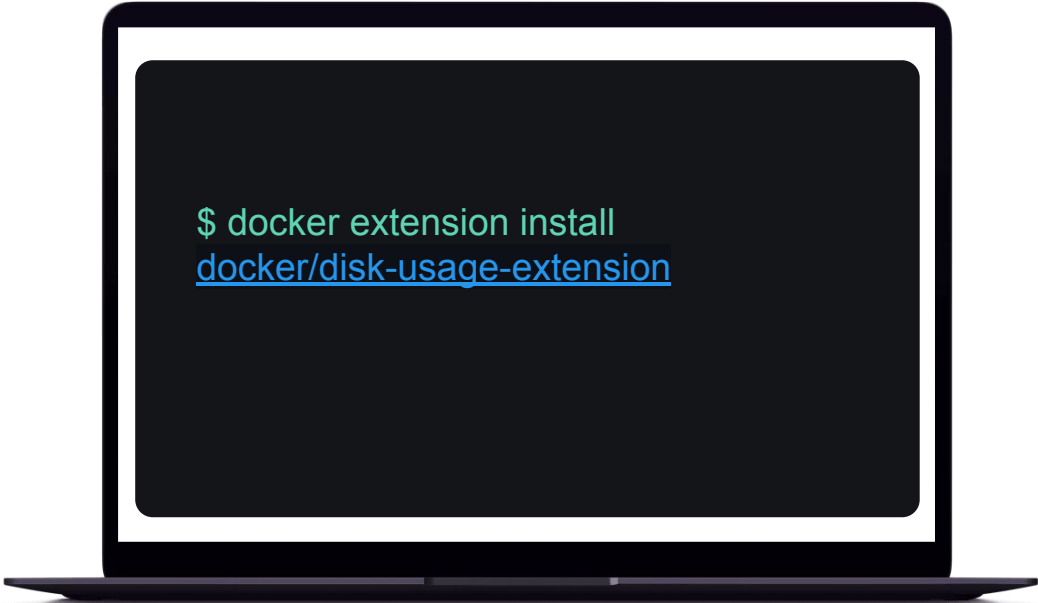- External base images with dashed borders

$ docker extension install
eunomie/hack-docker-ide:v0.1.3

#3 Disk Usage Extension

Optimize your disk space by removing unused objects from Docker Desktop
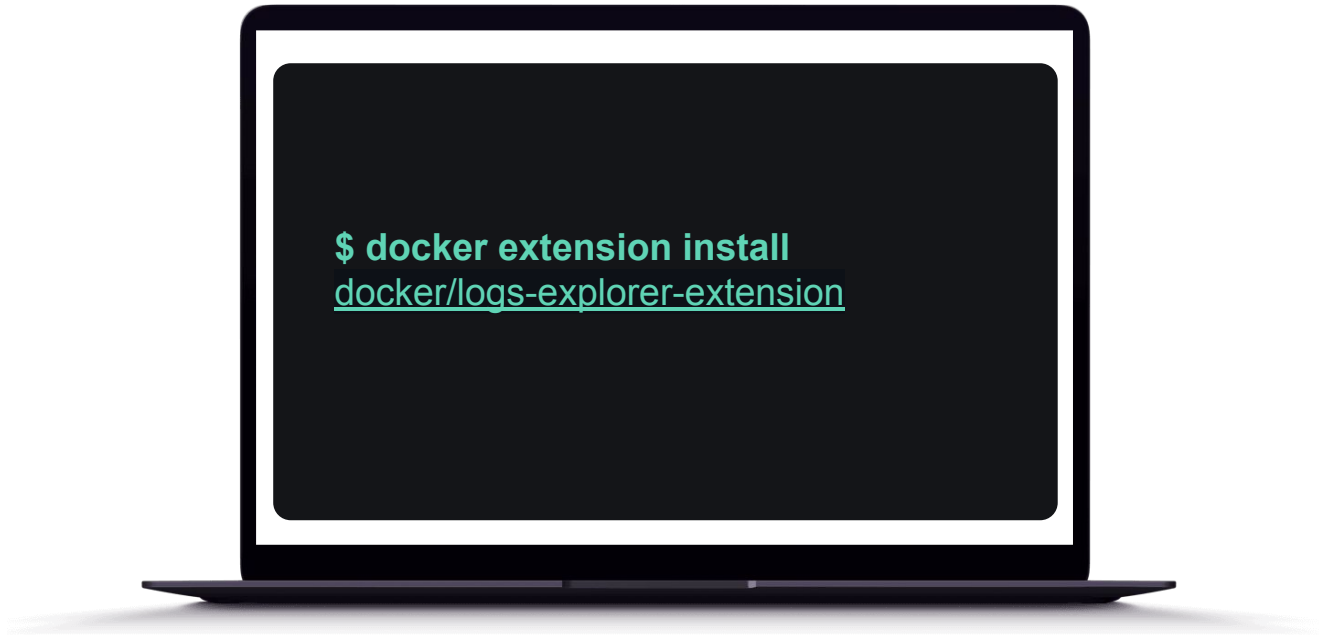
```
$ docker extension install
docker/disk-usage-extension
```
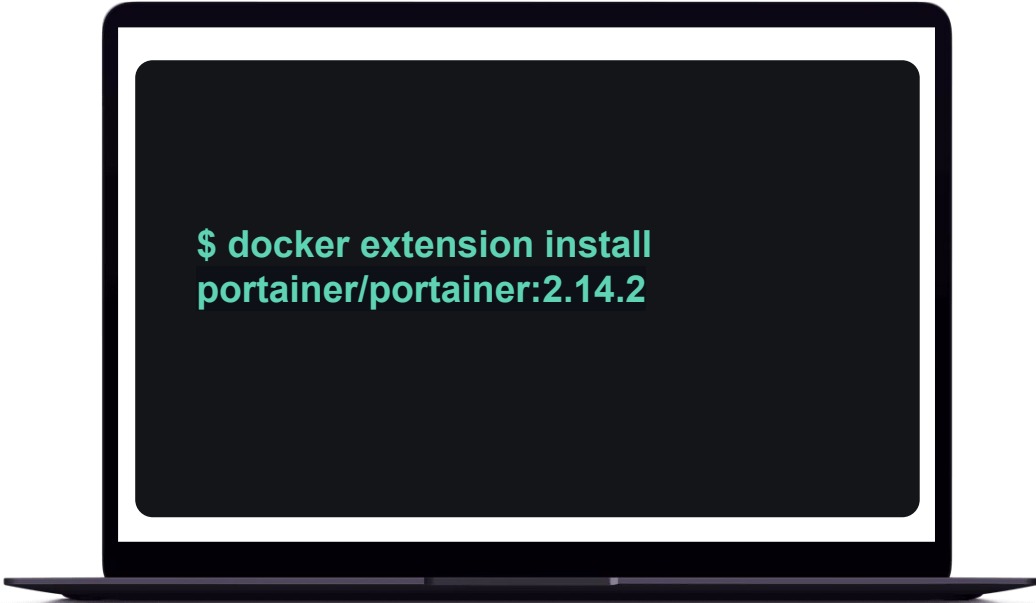
#4. Logs Explorer Extension

View all your container logs in one place so you can debug and troubleshoot faster

```
$ docker extension install
docker/logs-explorer-extension
```

#5. Portainer Extension

View all your container logs in one place so you can debug and troubleshoot faster

```
$ docker extension install
portainer/portainer:2.14.2
```

Reference Slide

- Docker Desktop Current Releases - https://www.docker.com/products/docker-desktop/

- Docker Extensions Docs - http://docs.docker.com/desktop/extensions/

- Docker Extensions SDK Docs - https://docs.docker.com/desktop/extensions-sdk/

- Extensions Slack Channel - #extensions

- Extensions SDK Feedback - https://github.com/docker/extensions-sdk/issues

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