



Module Two

Intro to Docker Desktop



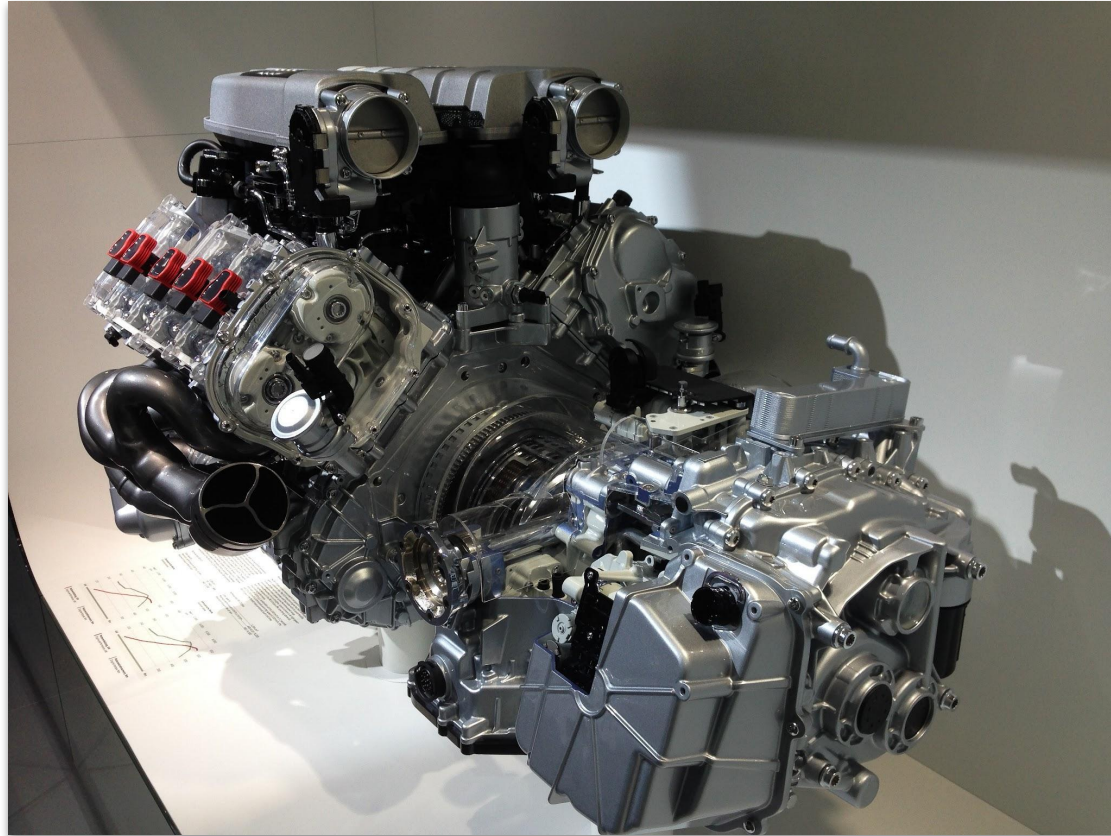
Docker Desktop Components

Built on Open Source

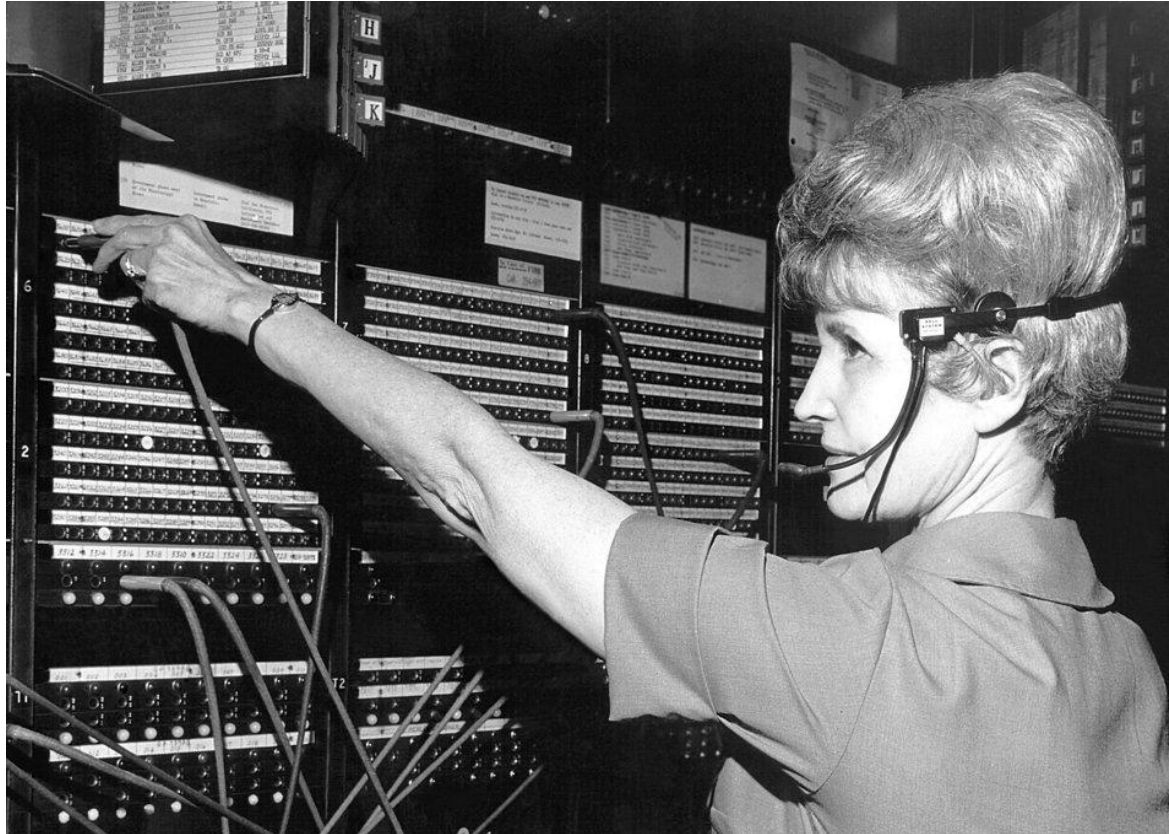
The core Docker experience is based on Open Source software.



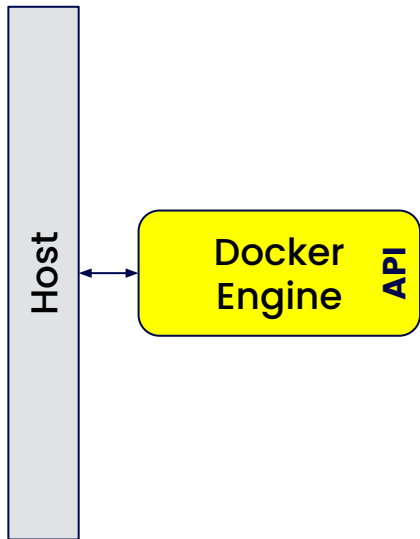
Docker Engine



Docker Engine API



Docker Engine

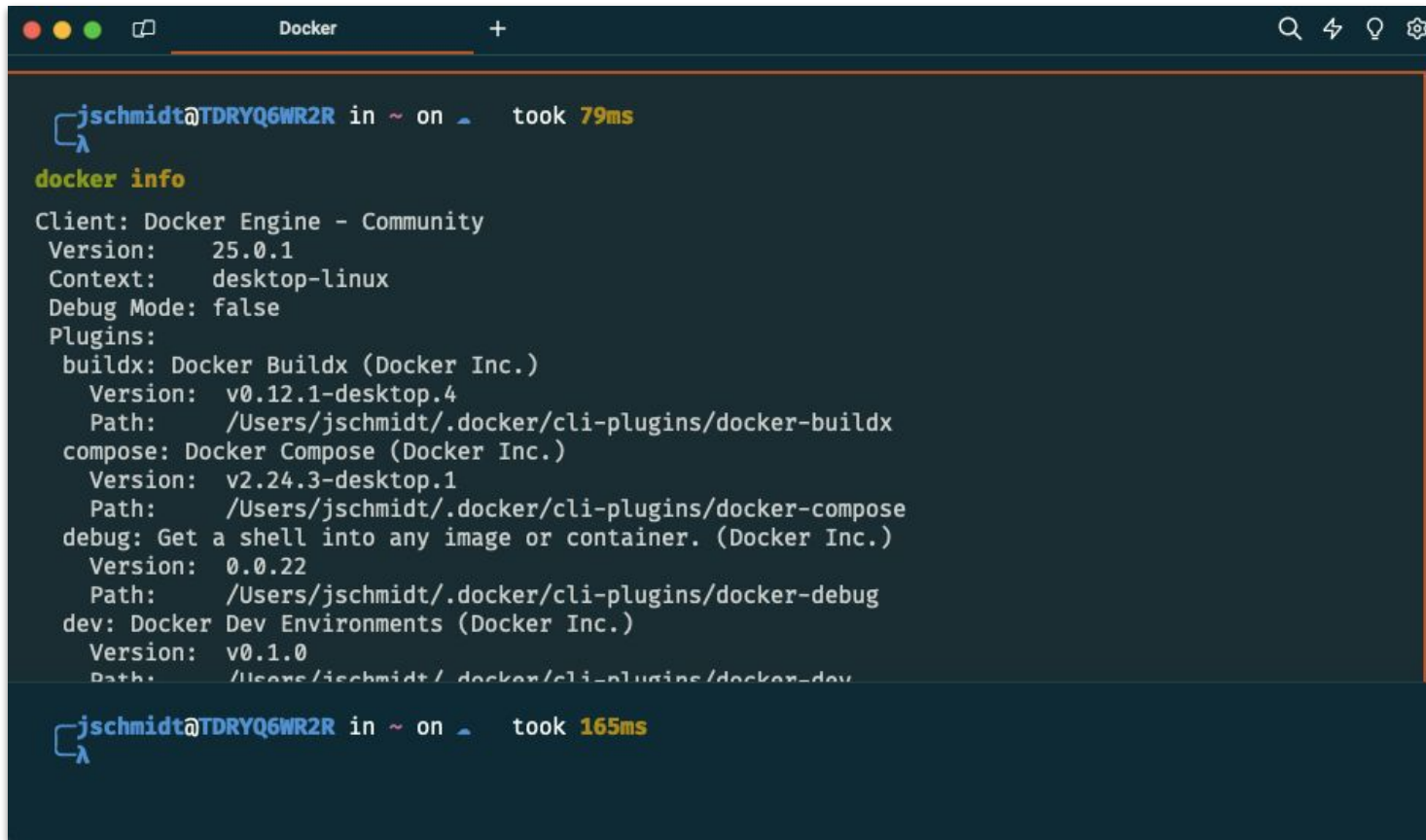


Background process that creates and manages images, containers, networks, and volumes.

Exposes an API used by other components.



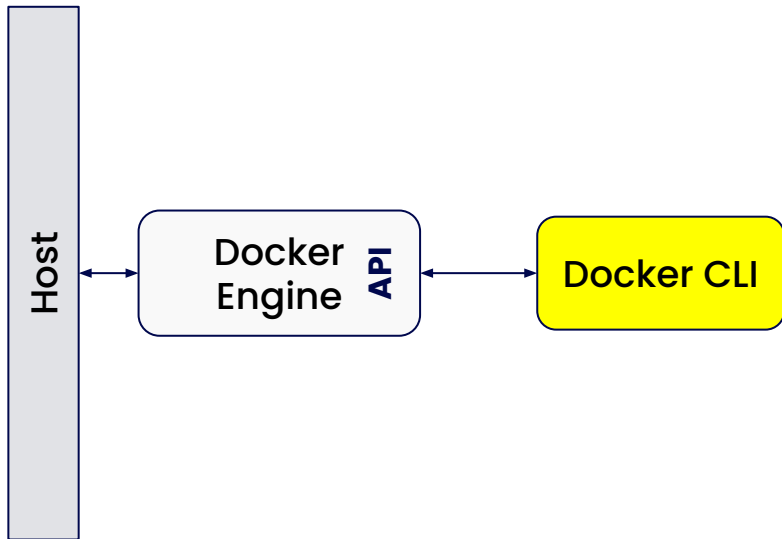
Docker CLI



```
jschmidt@TDRYQ6WR2R in ~ on  took 79ms
docker info
Client: Docker Engine - Community
Version: 25.0.1
Context: desktop-linux
Debug Mode: false
Plugins:
  buildx: Docker Buildx (Docker Inc.)
    Version: v0.12.1-desktop.4
    Path: /Users/jschmidt/.docker/cli-plugins/docker-buildx
  compose: Docker Compose (Docker Inc.)
    Version: v2.24.3-desktop.1
    Path: /Users/jschmidt/.docker/cli-plugins/docker-compose
  debug: Get a shell into any image or container. (Docker Inc.)
    Version: 0.0.22
    Path: /Users/jschmidt/.docker/cli-plugins/docker-debug
  dev: Docker Dev Environments (Docker Inc.)
    Version: v0.1.0
    Path: /Users/jschmidt/.docker/cli-plugins/docker-dev
jschmidt@TDRYQ6WR2R in ~ on  took 165ms
```



Docker CLI



A command line program that communicates with the Docker Engine via the API.

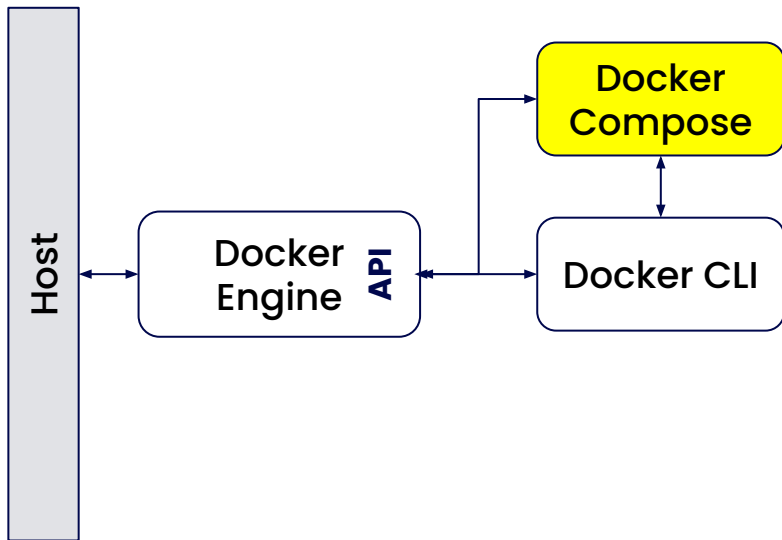
Allows interaction with the Docker Engine by commands or scripts.



Docker Compose



Docker Compose



A tool for defining and running multi-container Docker applications using a YAML file.

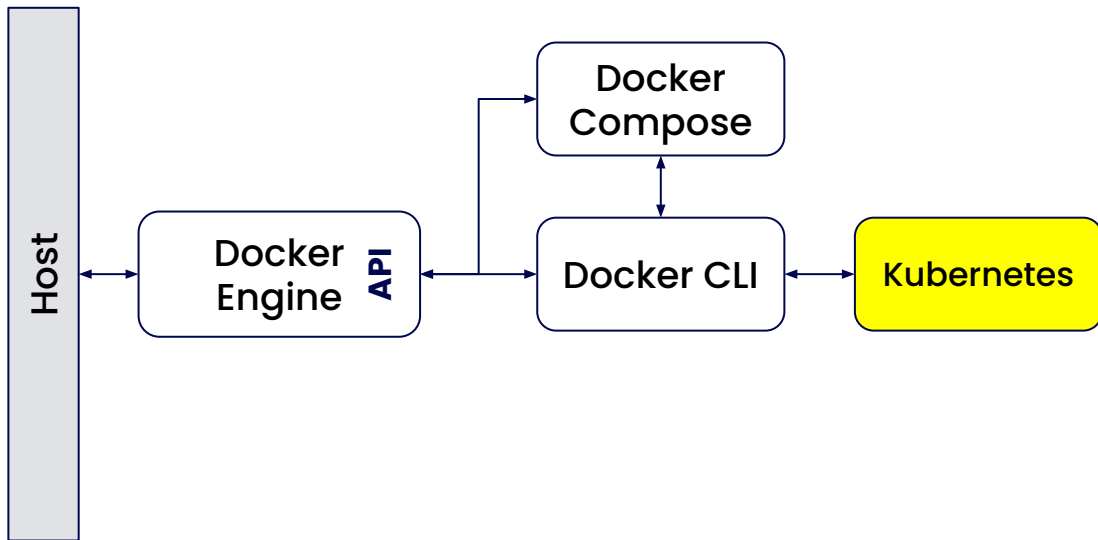
Communicates to the Docker Engine via the API and CLI.



Kubernetes



Kubernetes



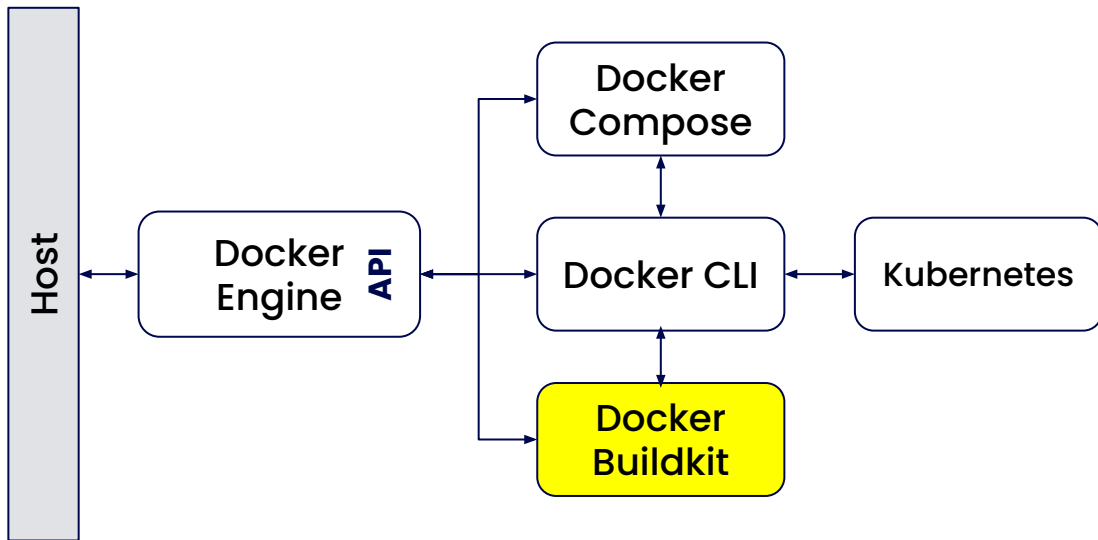
A standalone Kubernetes server and client with Docker CLI integration and integration with Docker for networking and volume management.



Docker Buildx / Buildkit



Docker Buildx / Buildkit



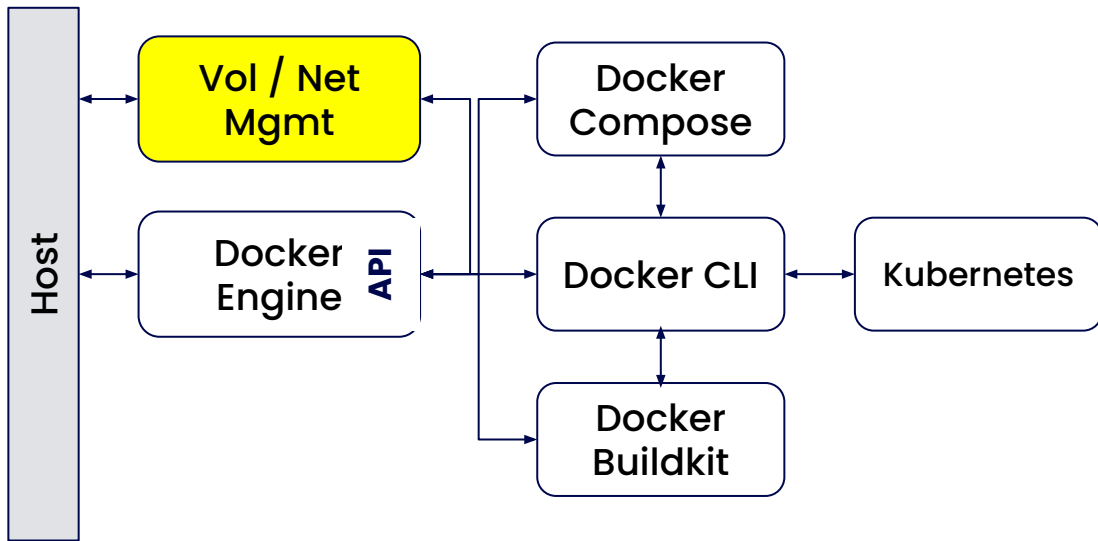
Creates Docker images from a Dockerfile and Context. Large ecosystem of tools that support both common and more complex and advanced scenarios.



Docker Volume and Network Mgmt



Docker Volume and Network Mgmt



Creates and manages Docker networks and volumes on the host system. Supports different drivers and configurations.

Implemented by the Docker Engine and configured via API or CLI.



Docker Desktop Advantage

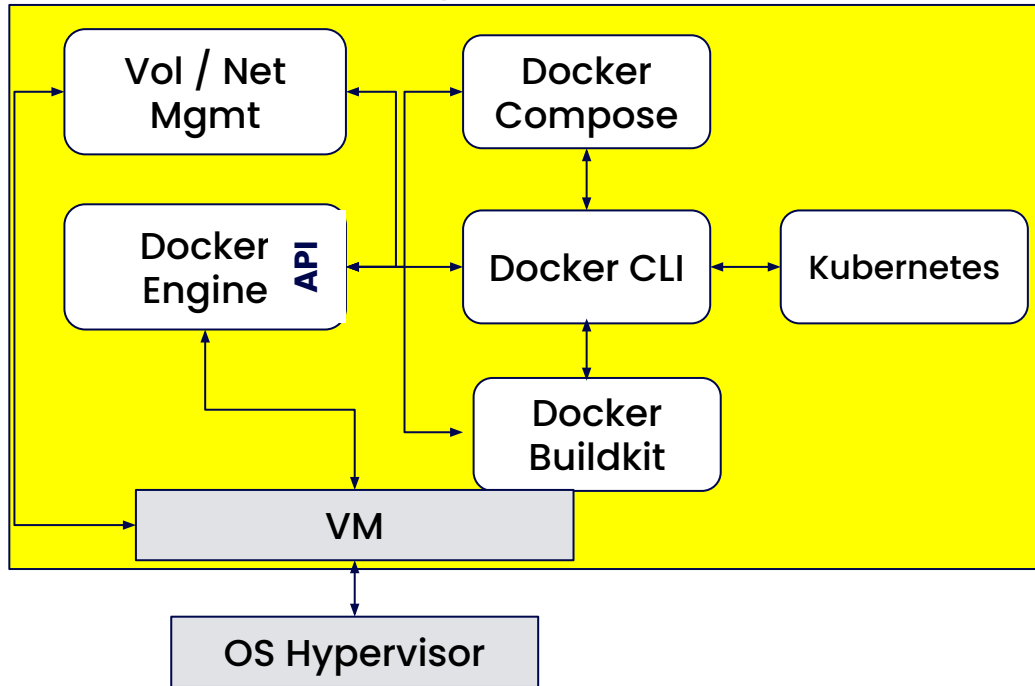
Docker extends, enhances, and manages the underlying OSS components.



Docker Component Isolation



Docker Component Isolation



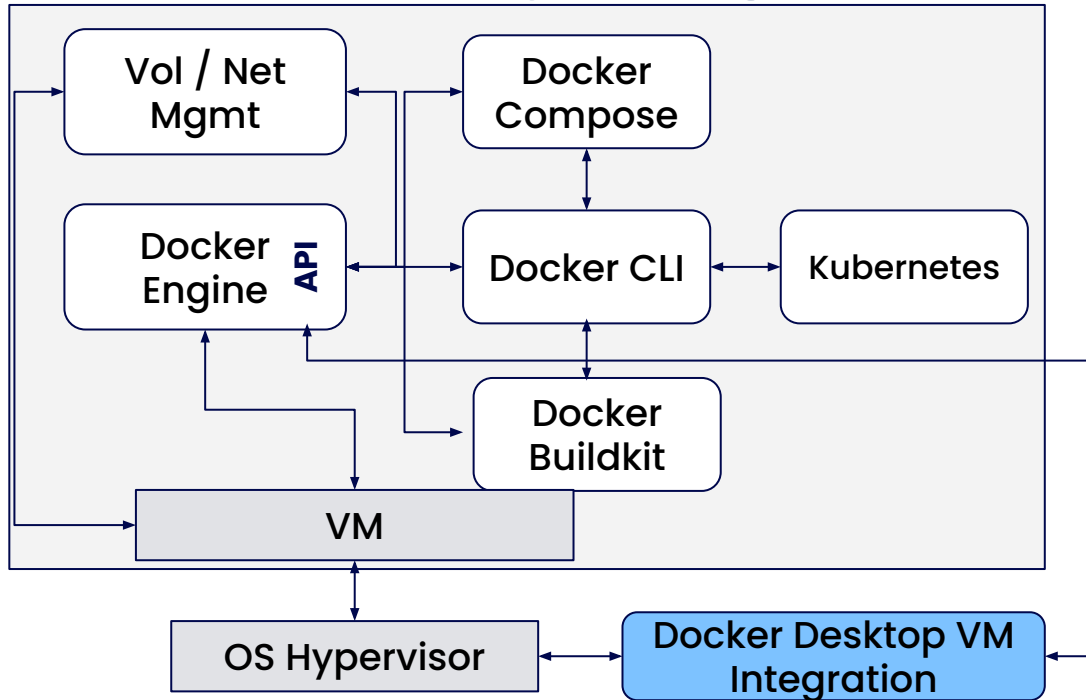
Docker Desktop uses a VM on Mac, Windows, and Linux for better management and control of the underlying components and to provide a consistent user experience across different operating systems.



Docker Desktop Integration



Docker Desktop Integration



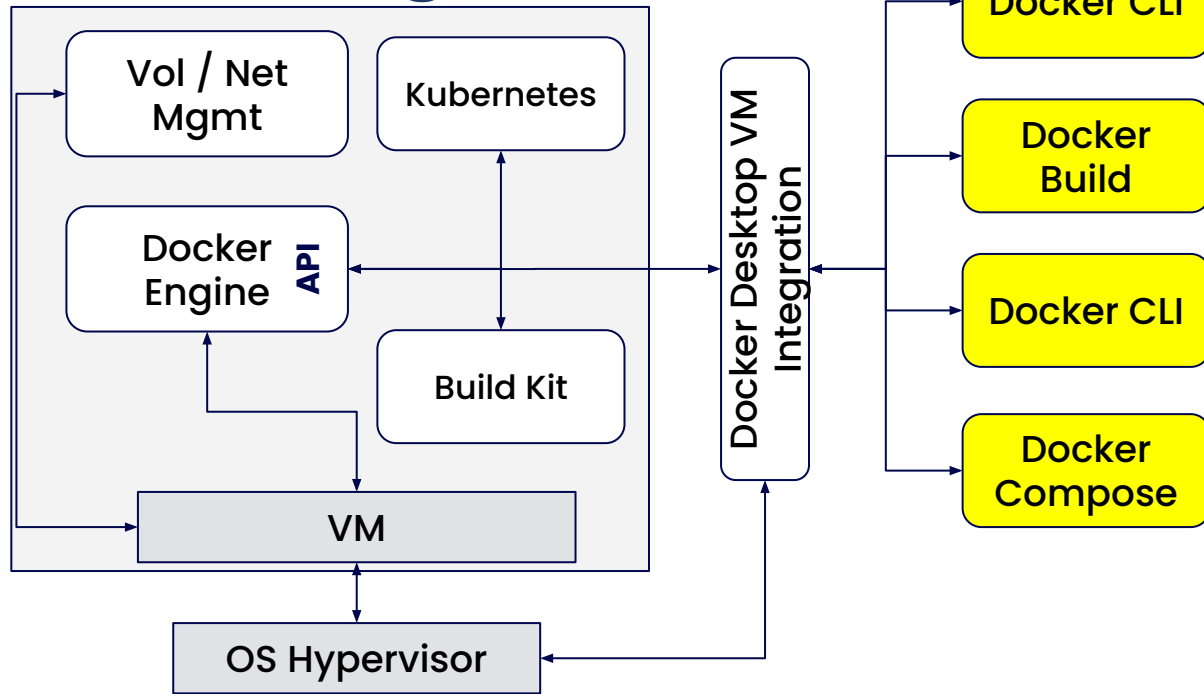
Docker Desktop manages all the communications between Desktop components and the VM based components. This includes mounts, networks, and Kubernetes related items.



Host Tooling



Host Tooling



With Docker Desktop's VM/Host integration, commands can be run on the host and communicated to the Docker Engine in the VM. (Note: Commands are still available in the VM as well).



Docker GUI

The screenshot displays the Docker Desktop interface. The left sidebar contains navigation options: Containers, Images, Volumes, Builds (NEW), Dev Environments (BETA), and Docker Scout. Below these are Extensions, Disk usage, Dive In, Docker Labs Debug Tools, Logs Explorer, Volumes Backup & Share, and Add Extensions. The main area is titled 'Containers' and shows system metrics: Container CPU usage at 0.00% / 1200% (12 CPUs available) and Container memory usage at 0B / 7.48GB. A 'Show charts' link is present. A search bar and a toggle for 'Only show running containers' are also visible. A table lists two running containers:

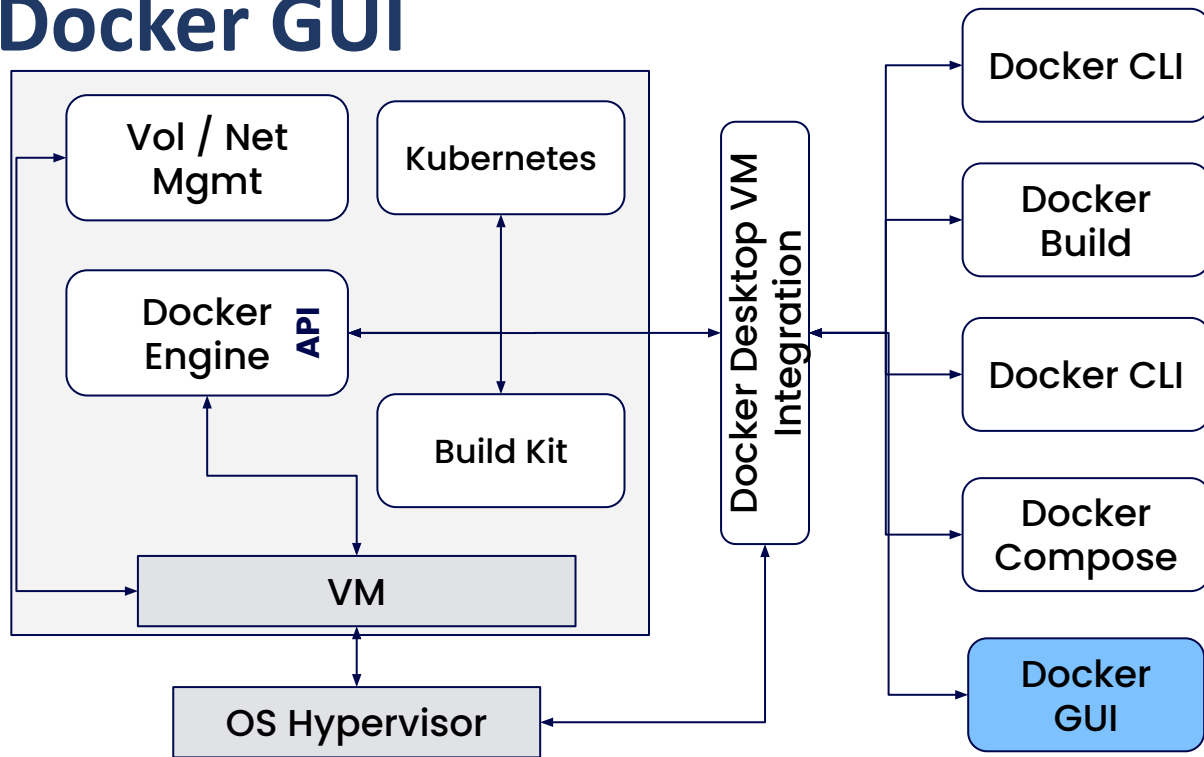
	Name	Image	Status	CPU (%)	Port(s)	Last started	Actions
<input type="checkbox"/>	buildx_buildkit_jaybuild0 58d53a5a4d0d	moby/buildkit-buildx-stable-1	Running	0%		1 day ago	■ ⋮ 🗑
<input type="checkbox"/>	musing_knuth ff435e0a4145	nginx	Running	0%	55002:80	1 day ago	■ ⋮ 🗑

Showing 2 items

The bottom status bar indicates 'Engine running', system resources (RAM 7.29 GB, CPU 0.25%, Disk 10.95 GB avail. of 62.67 GB), and a 'Signed in' user. A 'New version available' notification and a user profile icon are also shown.



Docker GUI



With Docker Desktop's VM/Host integration, commands can be run on the host and communicated to the Docker Engine in the VM. (Note: Commands are still available in the VM as well).



Docker Products

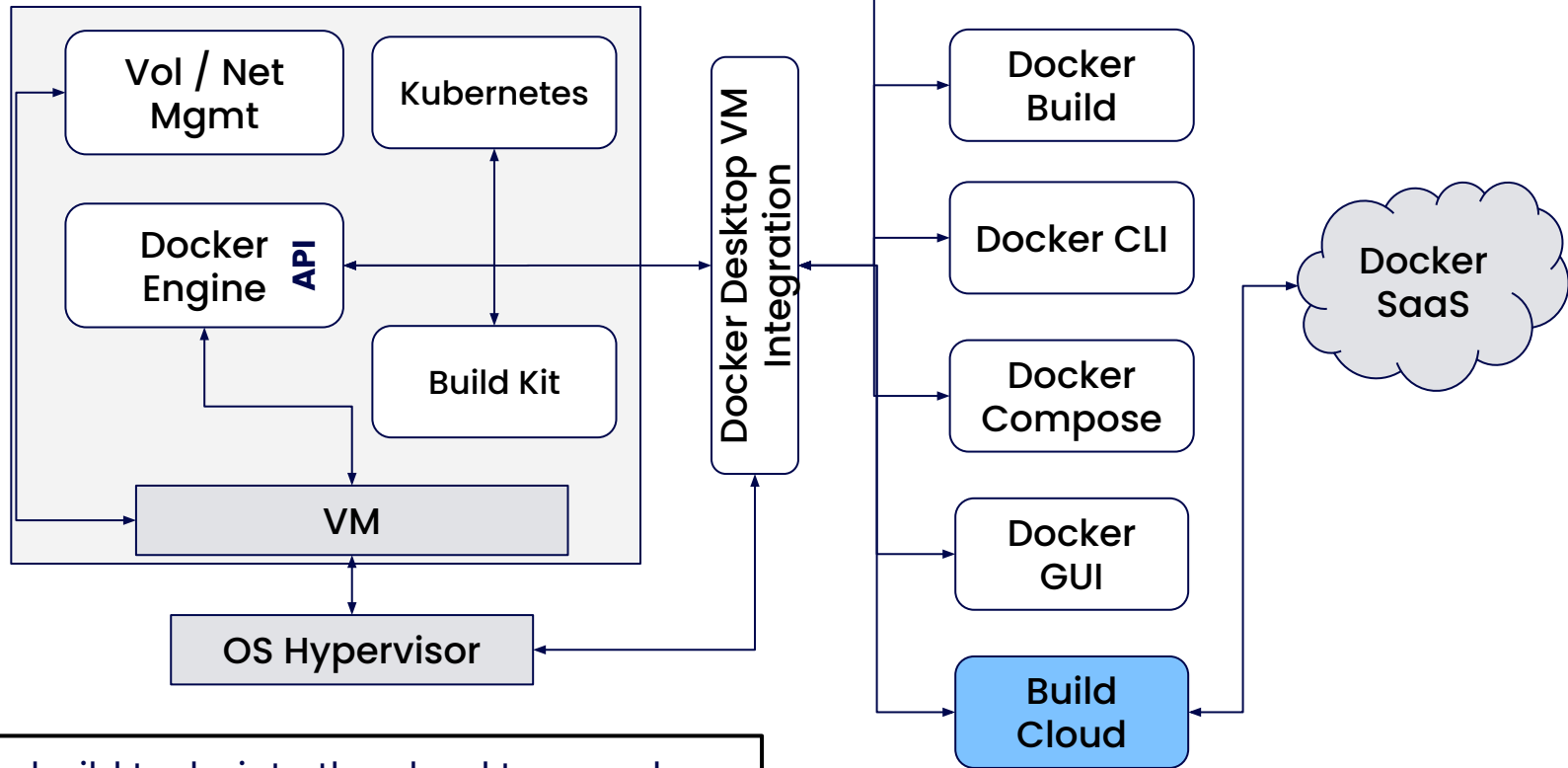
Docker Desktop provides easy access to additional Docker products.



Docker Build Cloud



Docker Build Cloud



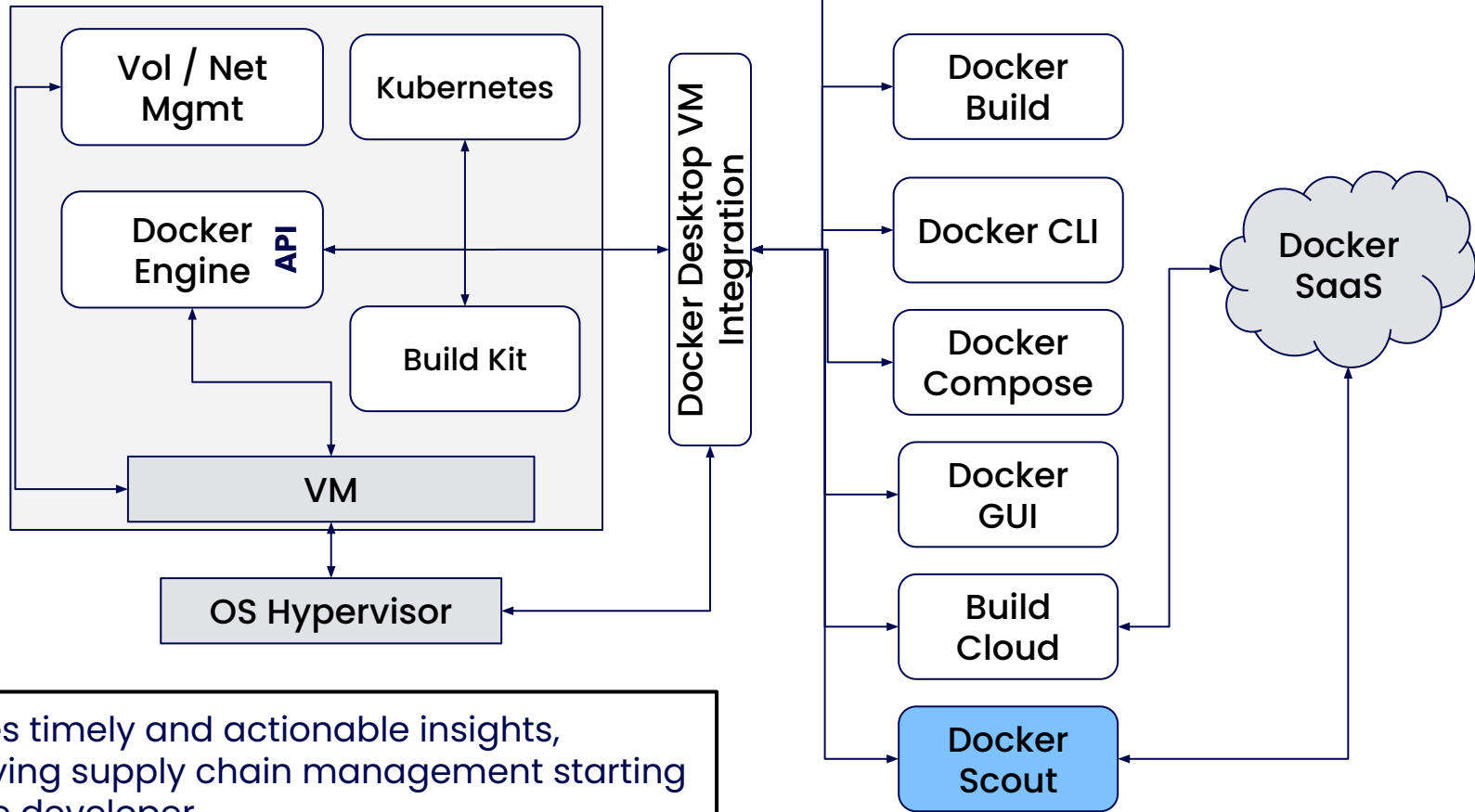
Offloads build tasks into the cloud to speed up builds with dedicated build systems and shared cache.



Docker Scout



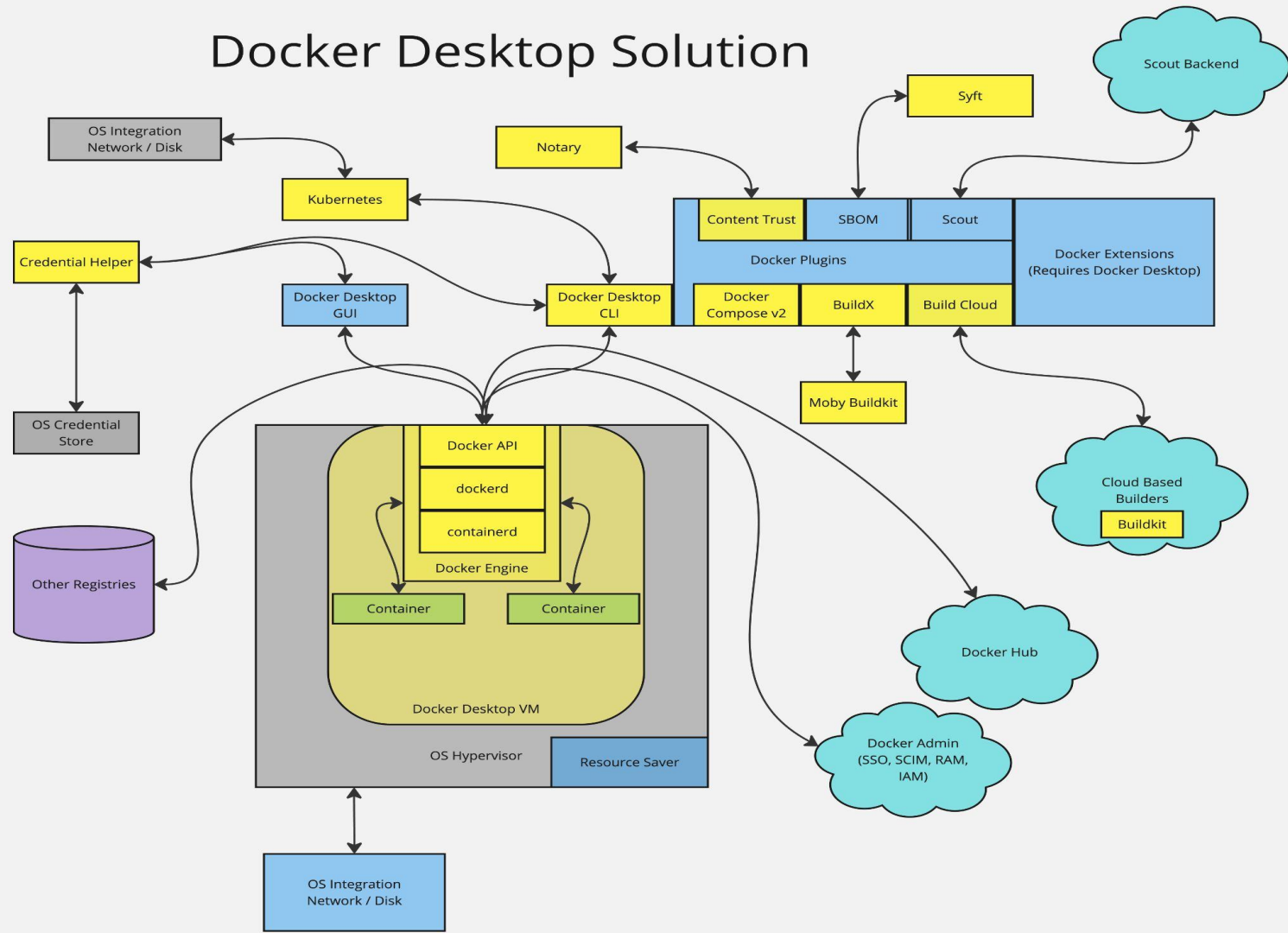
Docker Scout



The Big Picture



Docker Desktop Solution



Maybe More Like This...





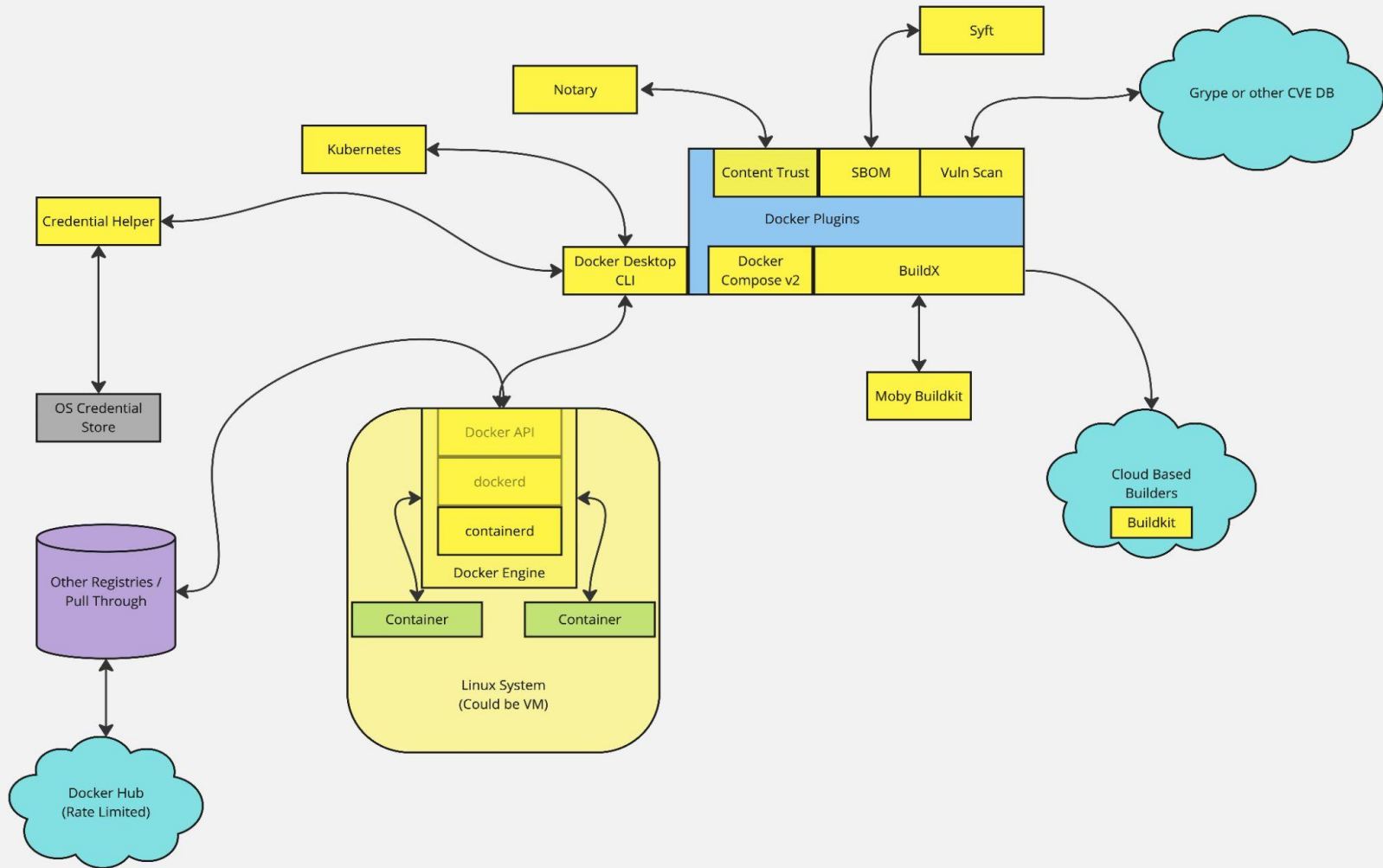
Can I DIY Docker?

Can I just DIY my Docker?

- Setup Environment
 - Use Linux or run a Linux VM on Macintosh or Windows platforms
 - Install Docker Community Edition
- Configuration
 - Configure networking and storage devices as needed
 - Configure clients
- Maintenance
 - Monitor and apply upgrades/patches regularly for all components
- Usage
 - Rely solely on the CLI provided by Docker Community Edition or write API calls
- Security and Governance
 - Manually manage security measures
 - Implement governance practices on your own
- Support
 - Handle all support issues internally



Roll Your Own Docker Solution



**Would your developers rather
manage a toolchain or write code?**



Docker Desktop provides an
integrated, supported, and
consistent developer experience





Questions and Answers