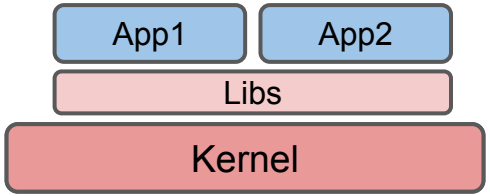
What you should know about (docker) containers

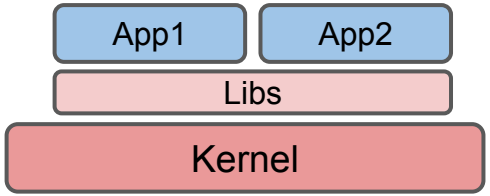
https://github.com/paulopez78/docker-containers/

Bare Metal



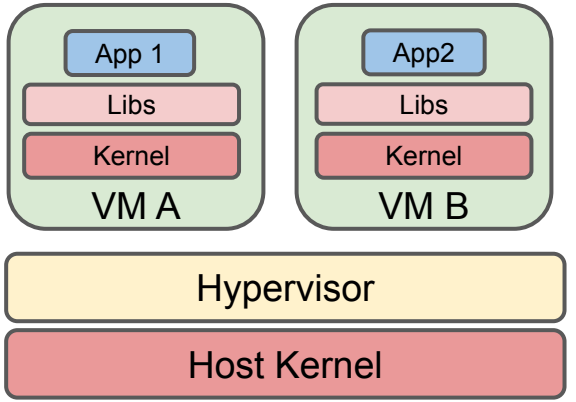
Size: ***KB***
Start up: ***ms***
Density: ***+1000***

Bare Metal

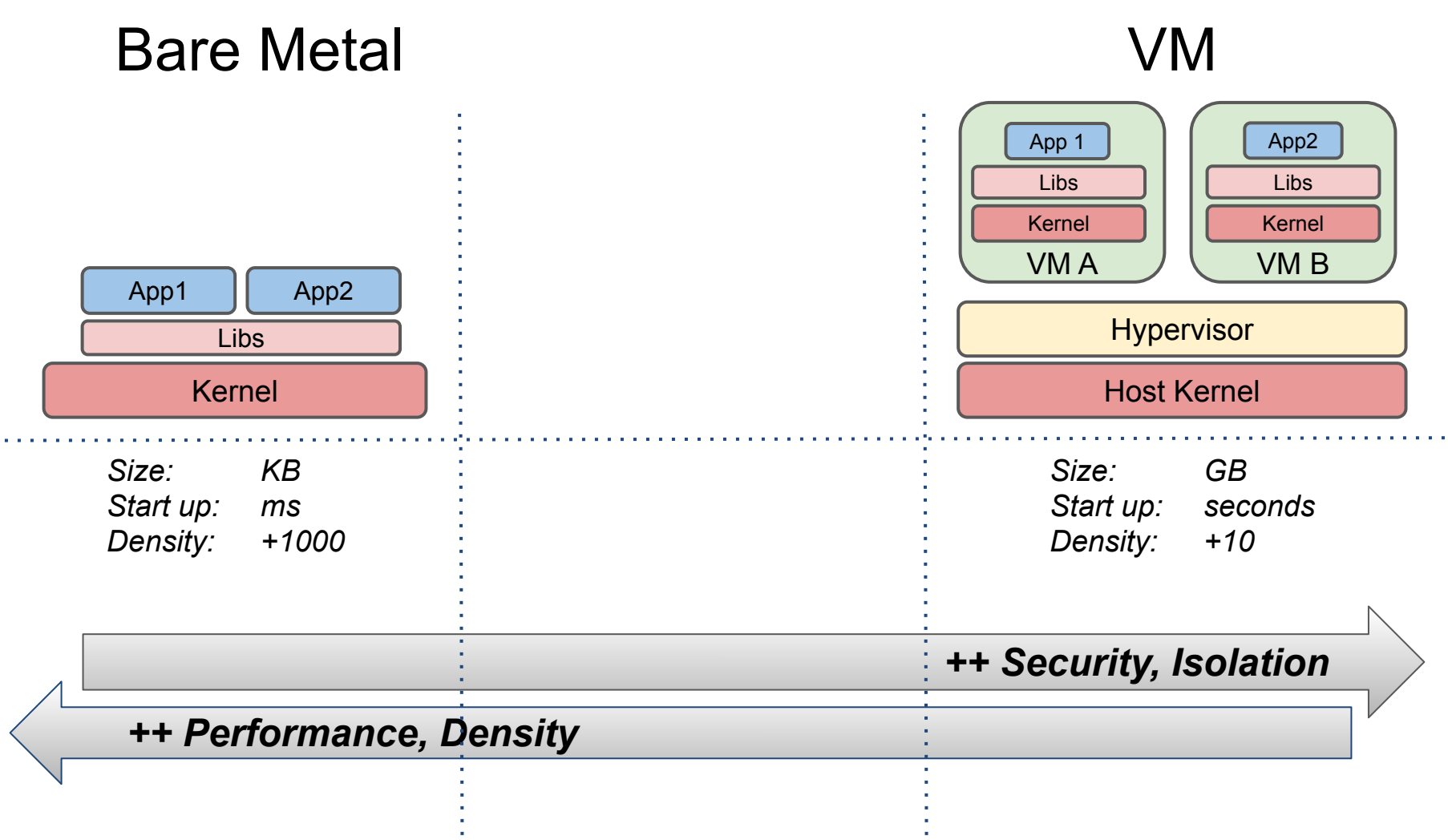


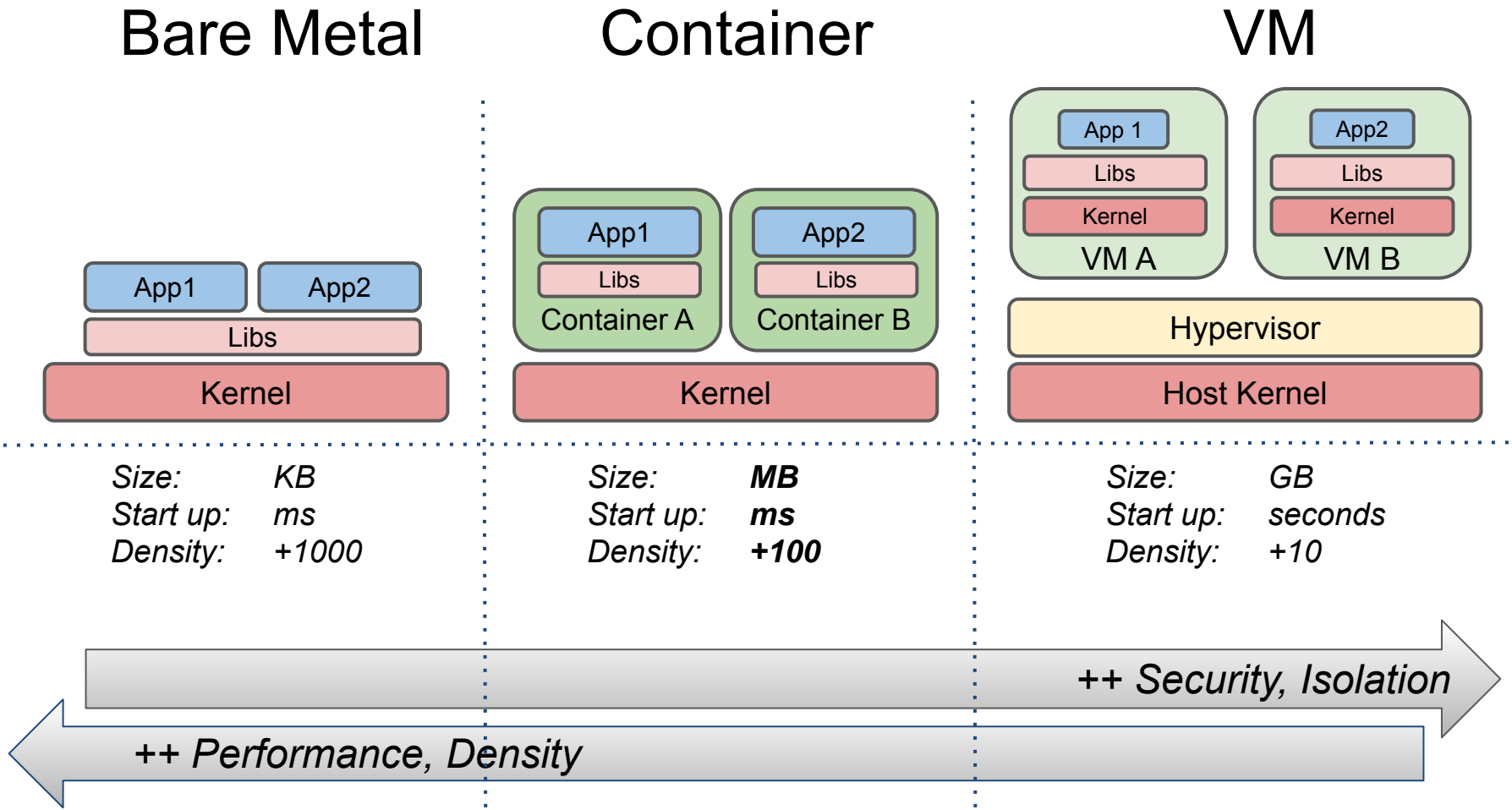
Size: *KB*
Start up: *ms*
Density: *+1000*

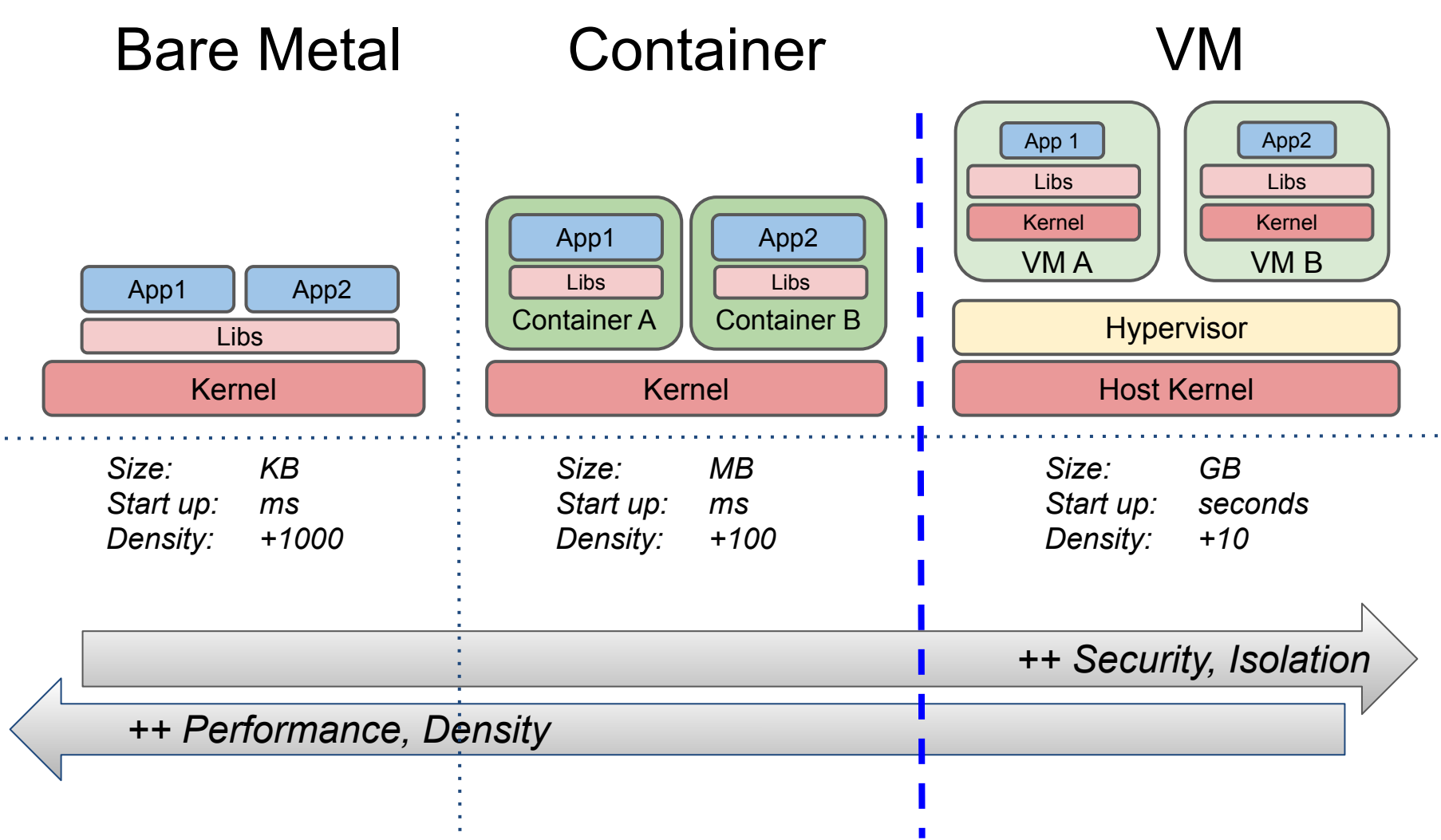
VM

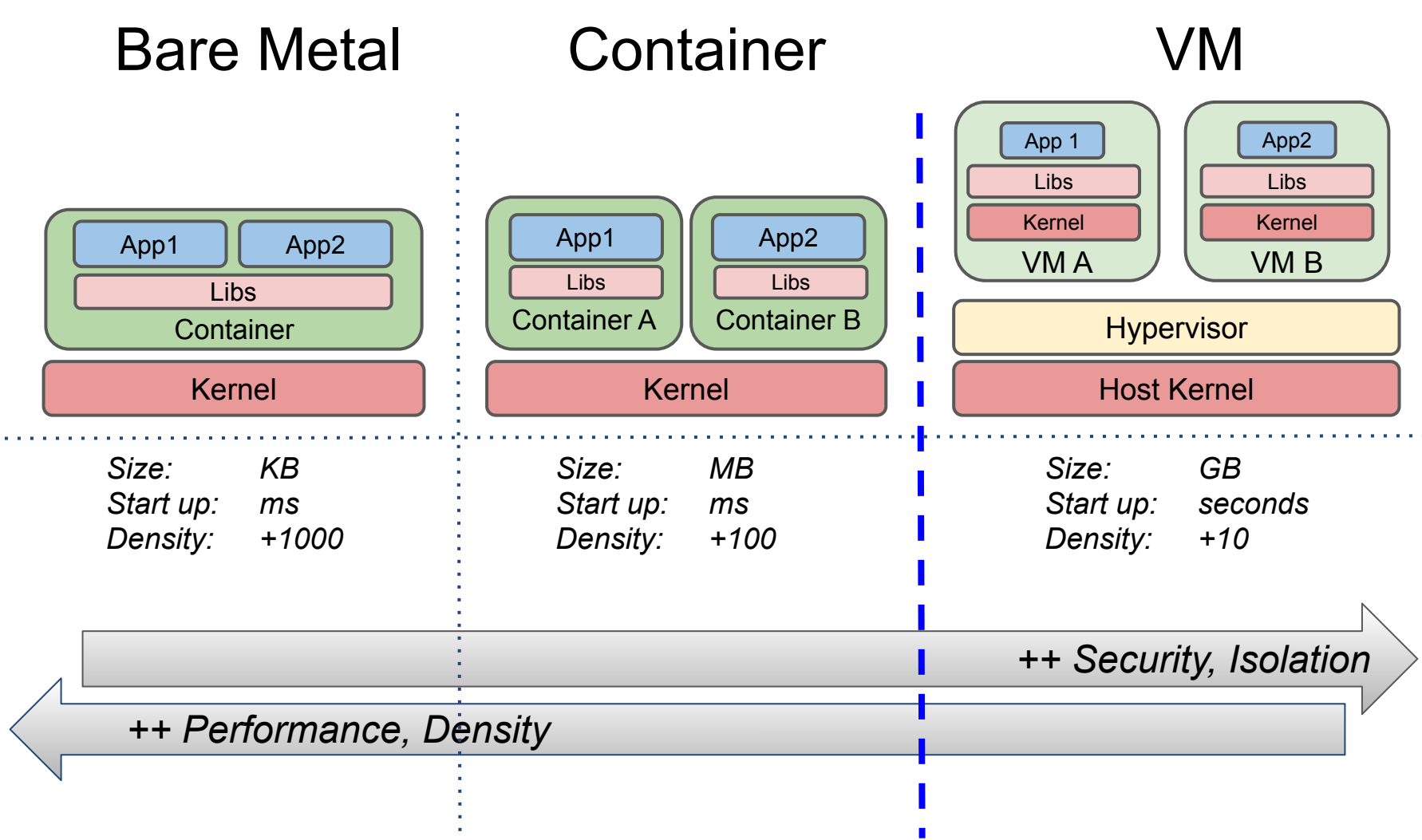


Size: ***GB***
Start up: ***seconds***
Density: ***+10***

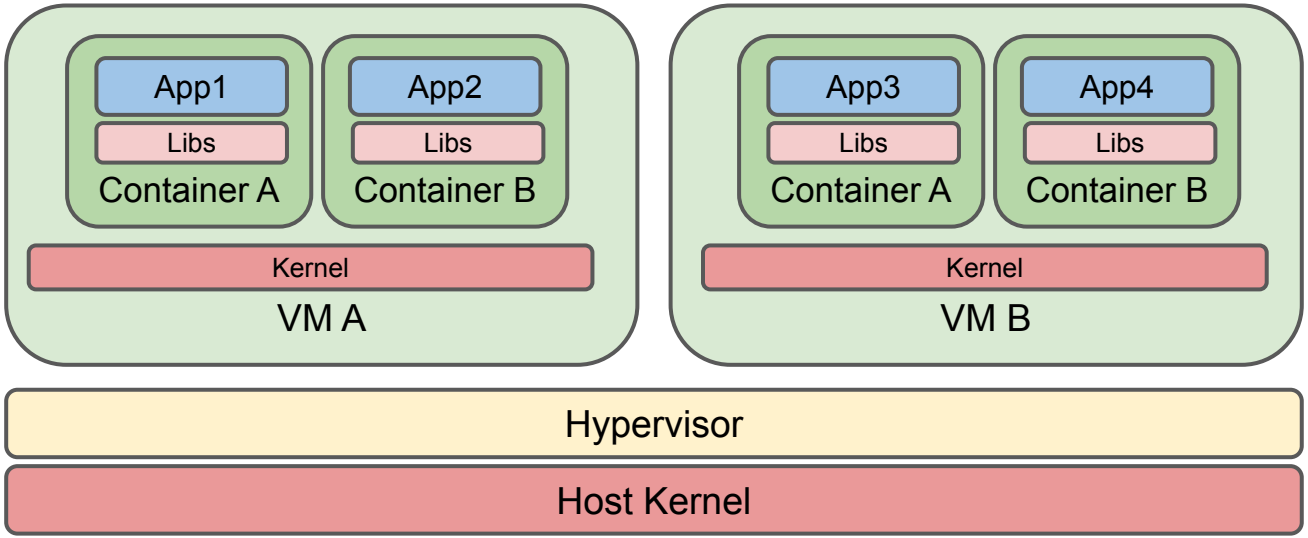

Bare Metal
VM
App 1
Libs
Kernel
VM A
App2
Libs
Kernel
VM B
App1
App2
Libs
Kernel
Hypervisor
Host Kernel
Size: KB
Start up: ms
Density: +1000
Size: GB
Start up: seconds
Density: +10
++ Security, Isolation
++ Performance, Density


Bare Metal
Container
VM
App1
App2
Libs
Kernel
App1
Libs
Container A
App2
Libs
Container B
Kernel
App 1
Libs
Kernel
VM A
App2
Libs
Kernel
VM B
Hypervisor
Host Kernel
Size: KB
Start up: ms
Density: +1000
Size: MB
Start up: ms
Density: +100
Size: GB
Start up: seconds
Density: +10
++ Security, Isolation
++ Performance, Density


Bare Metal
Container
VM
App1
App2
Libs
Kernel
App1
Libs
Container A
App2
Libs
Container B
Kernel
App 1
Libs
Kernel
VM A
App2
Libs
Kernel
VM B
Hypervisor
Host Kernel
Size: KB
Start up: ms
Density: +1000
Size: MB
Start up: ms
Density: +100
Size: GB
Start up: seconds
Density: +10
++ Security, Isolation
++ Performance, Density

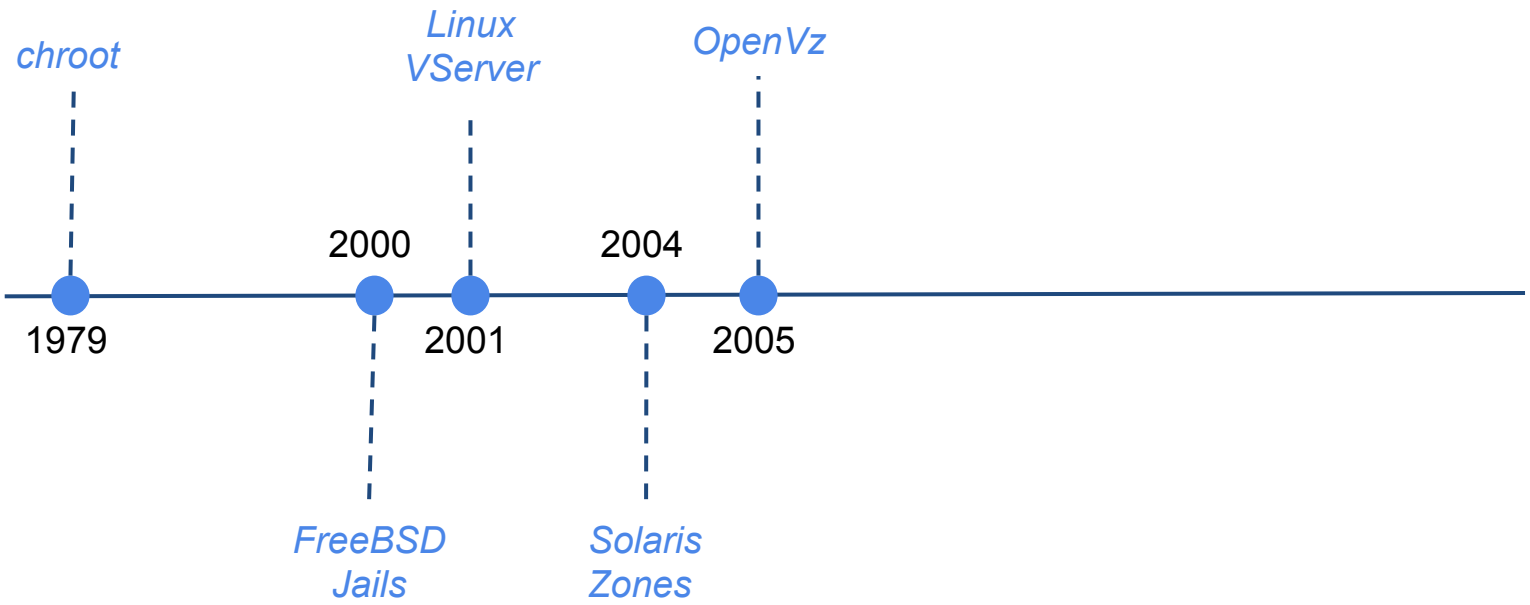

Bare Metal
Container
VM
App1
App2
Libs
Container
Kernel
App1
Libs
Container A
App2
Libs
Container B
Kernel
App 1
Libs
Kernel
VM A
App2
Libs
Kernel
VM B
Hypervisor
Host Kernel
Size: KB
Start up: ms
Density: +1000
Size: MB
Start up: ms
Density: +100
Size: GB
Start up: seconds
Density: +10
++ Security, Isolation
++ Performance, Density

VMs with Containers

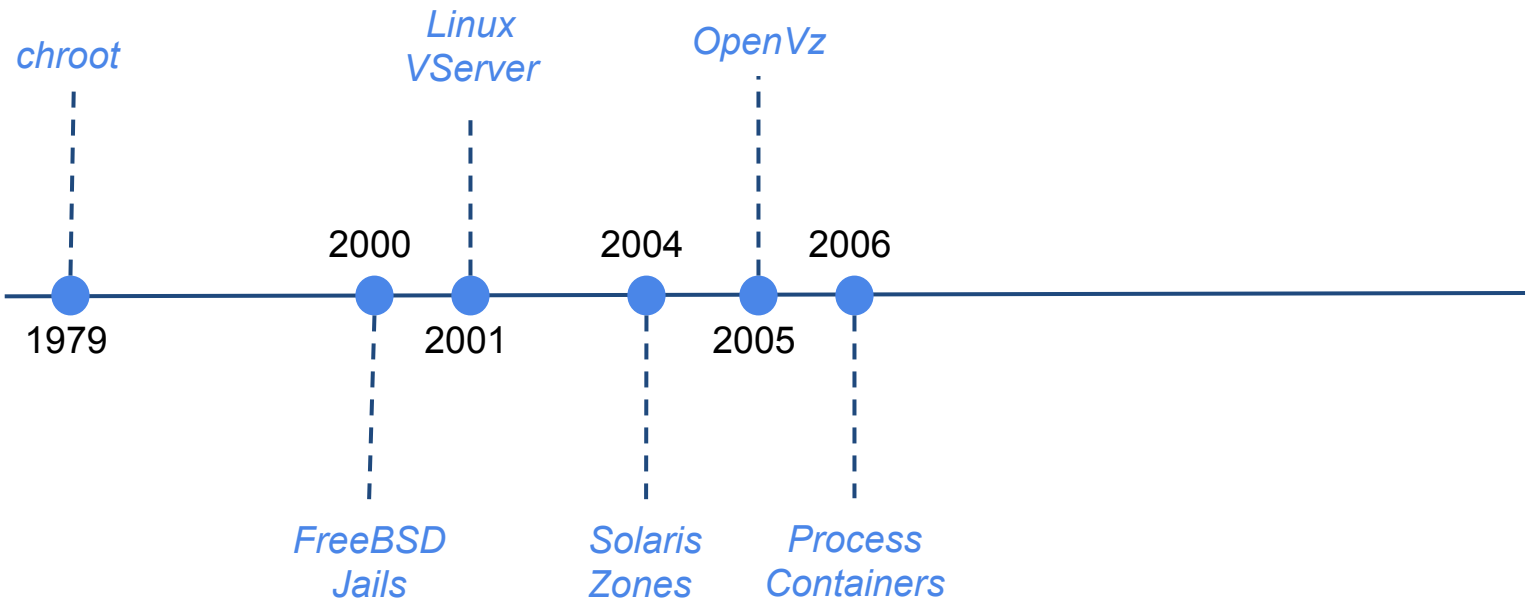


Containers History

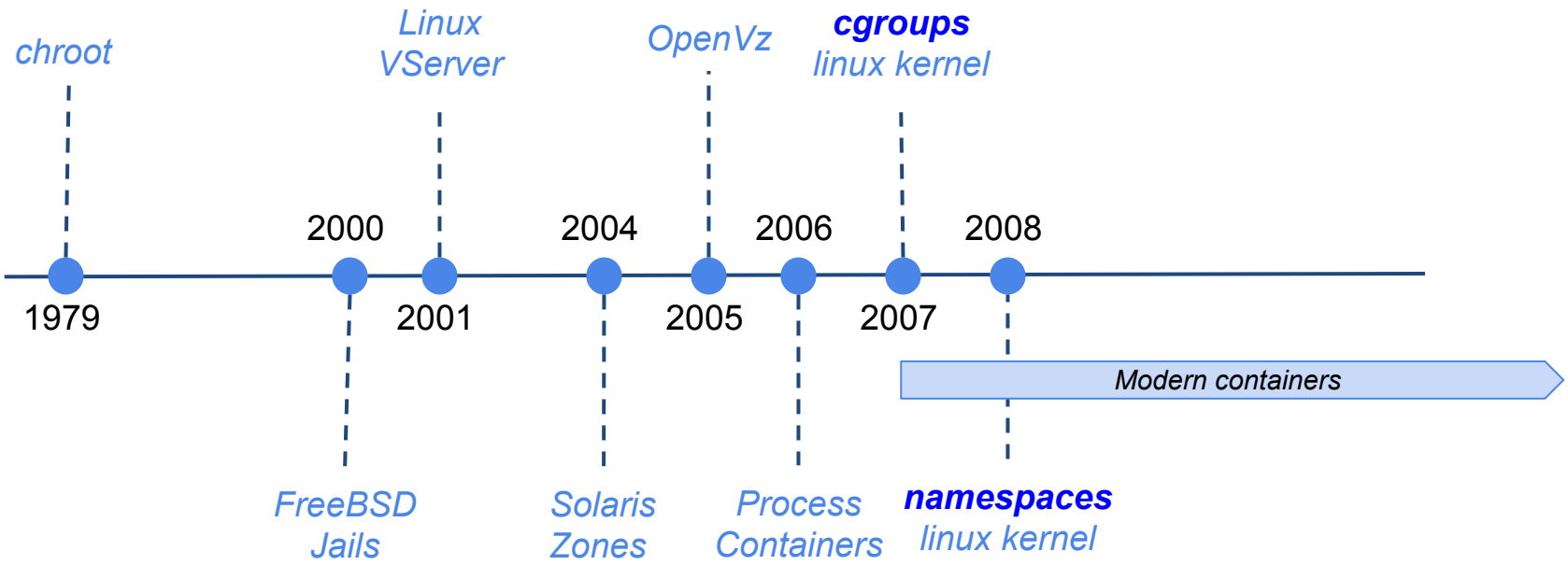
Containers History



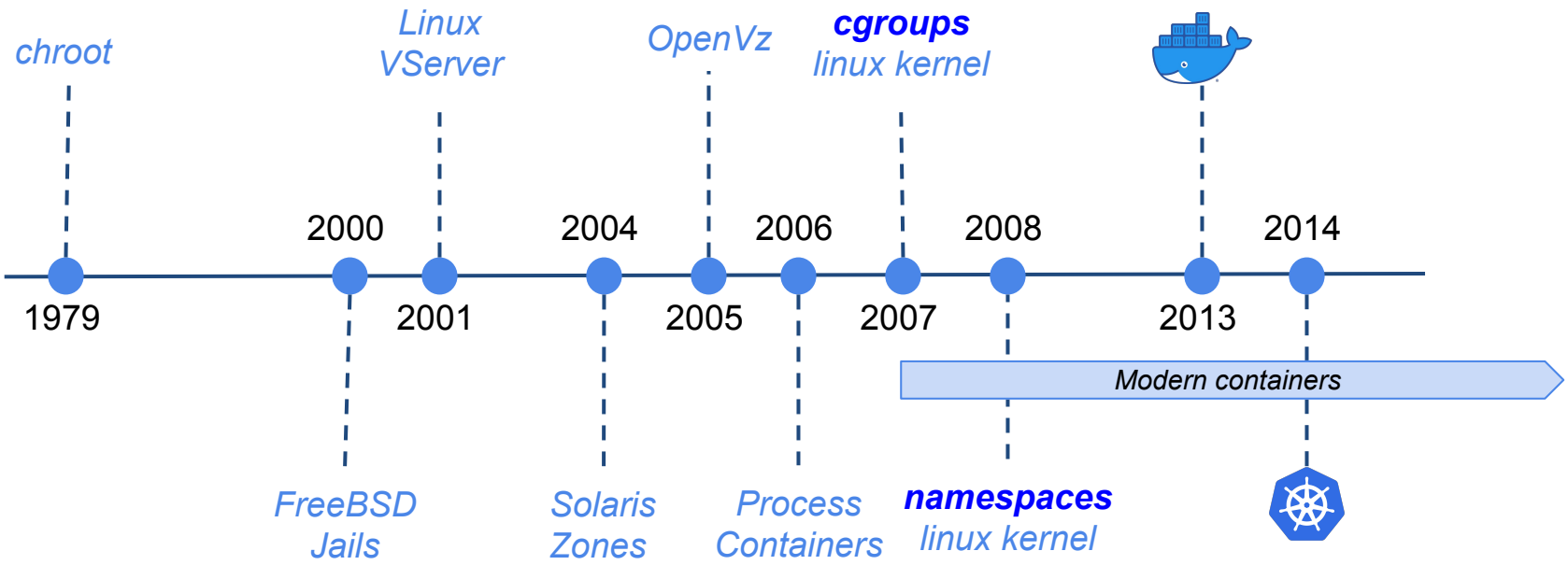
Containers History



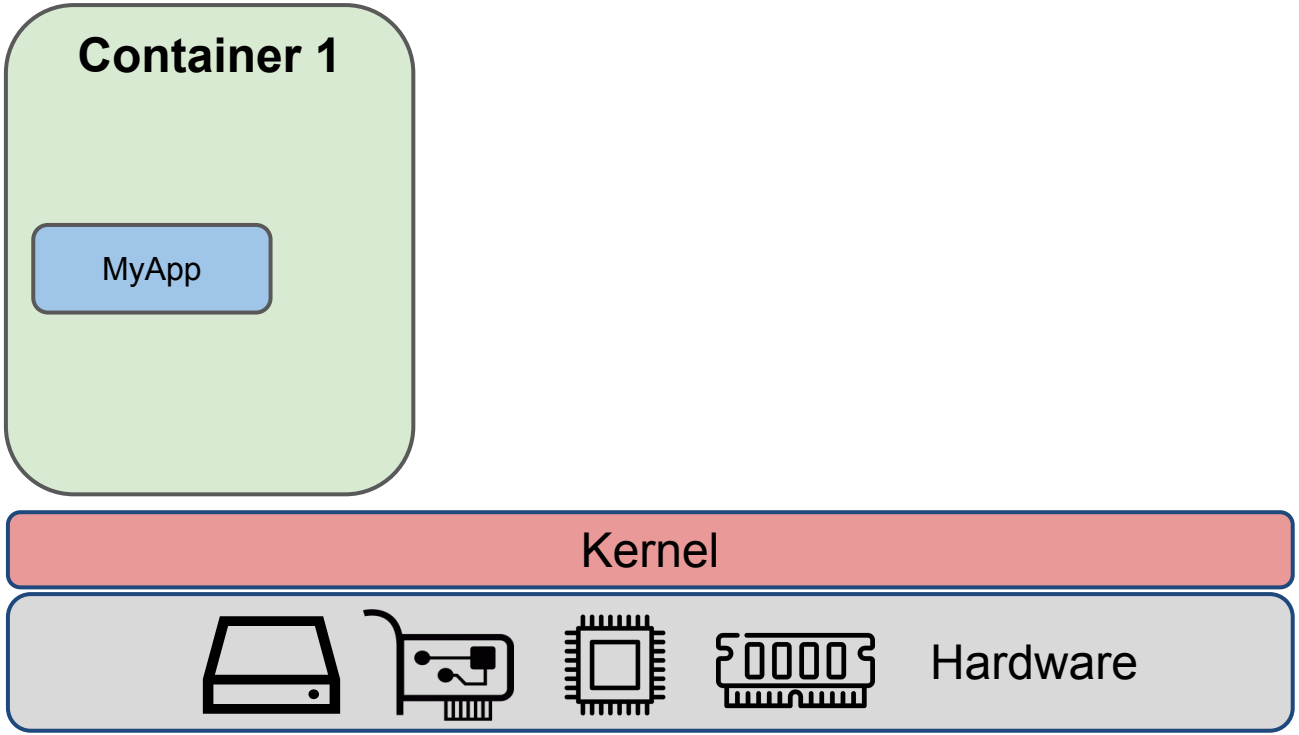
Containers History



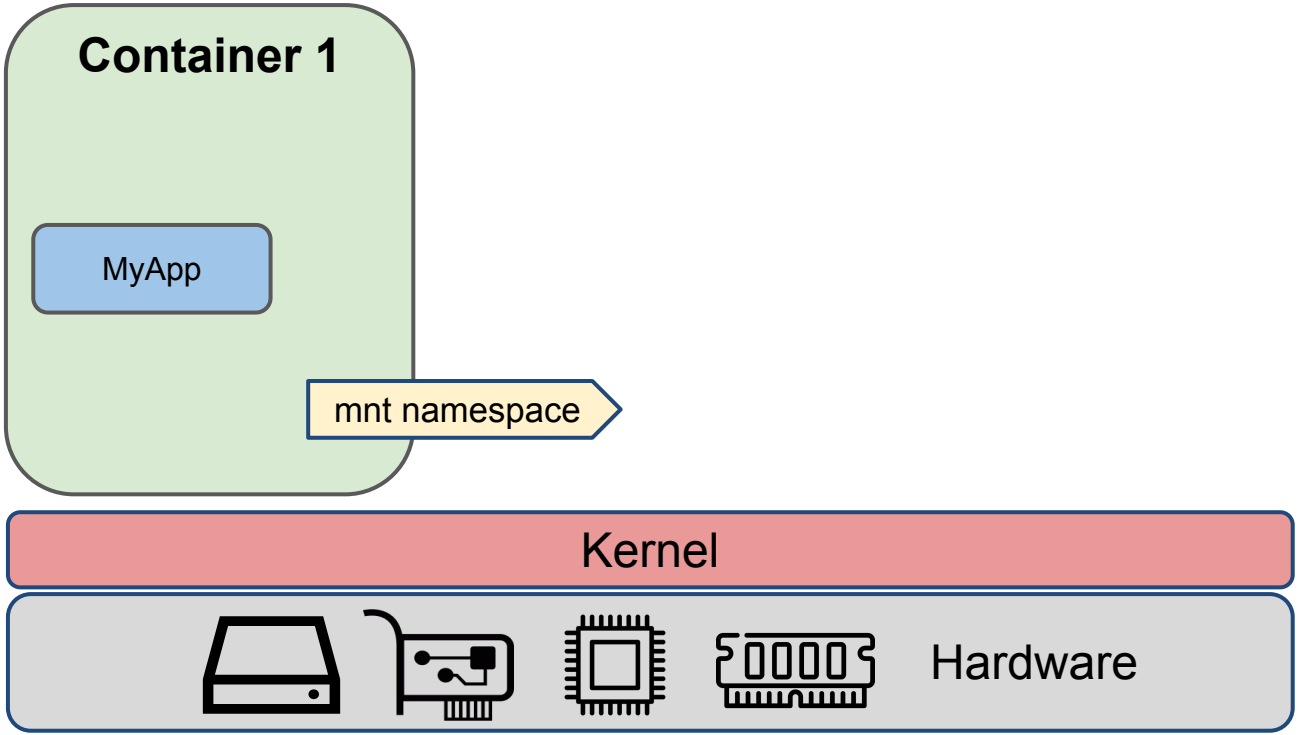
Containers History



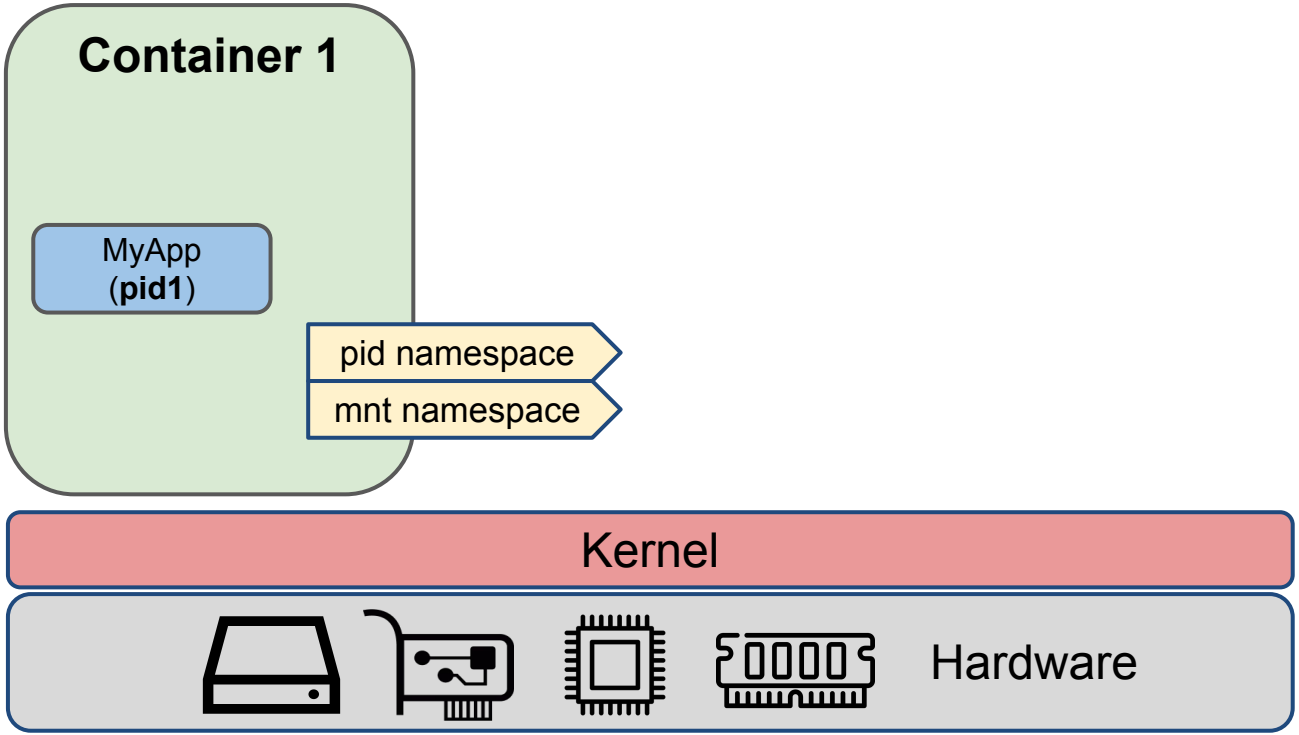
cgroups and namespaces



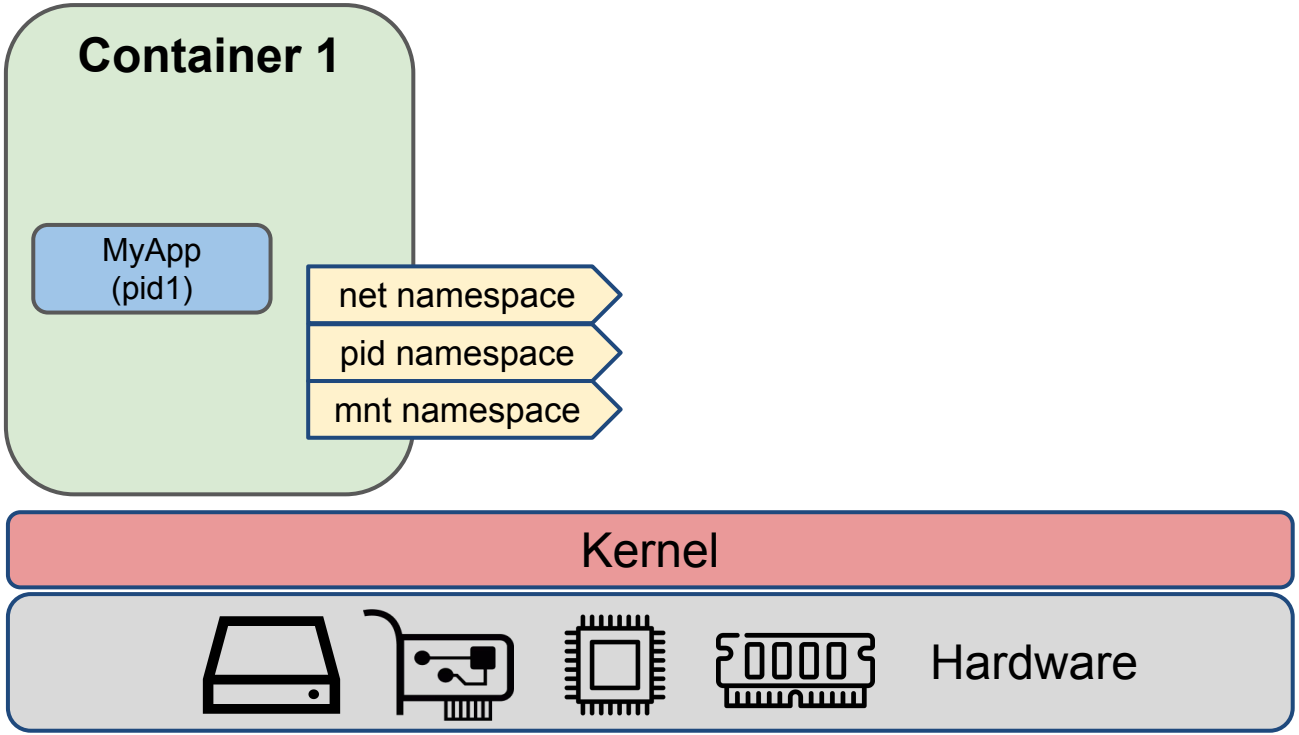
cgroups and namespaces



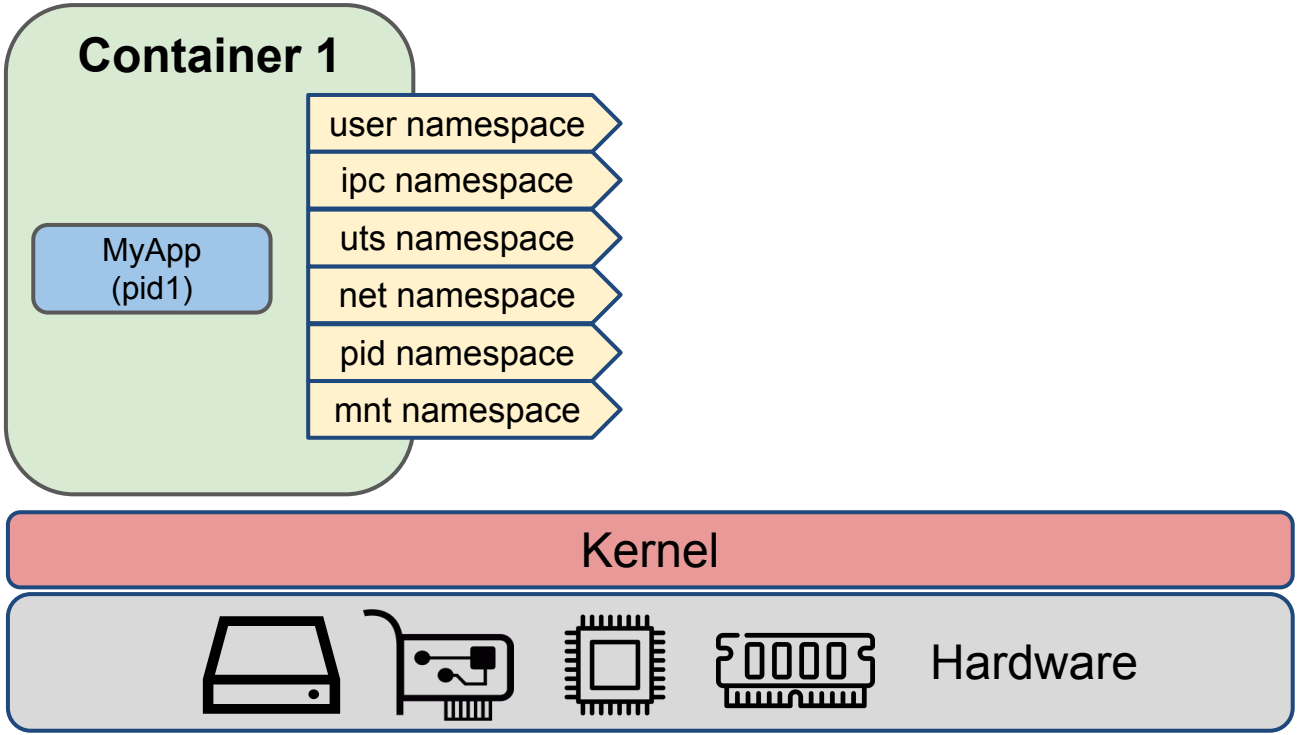
cgroups and namespaces



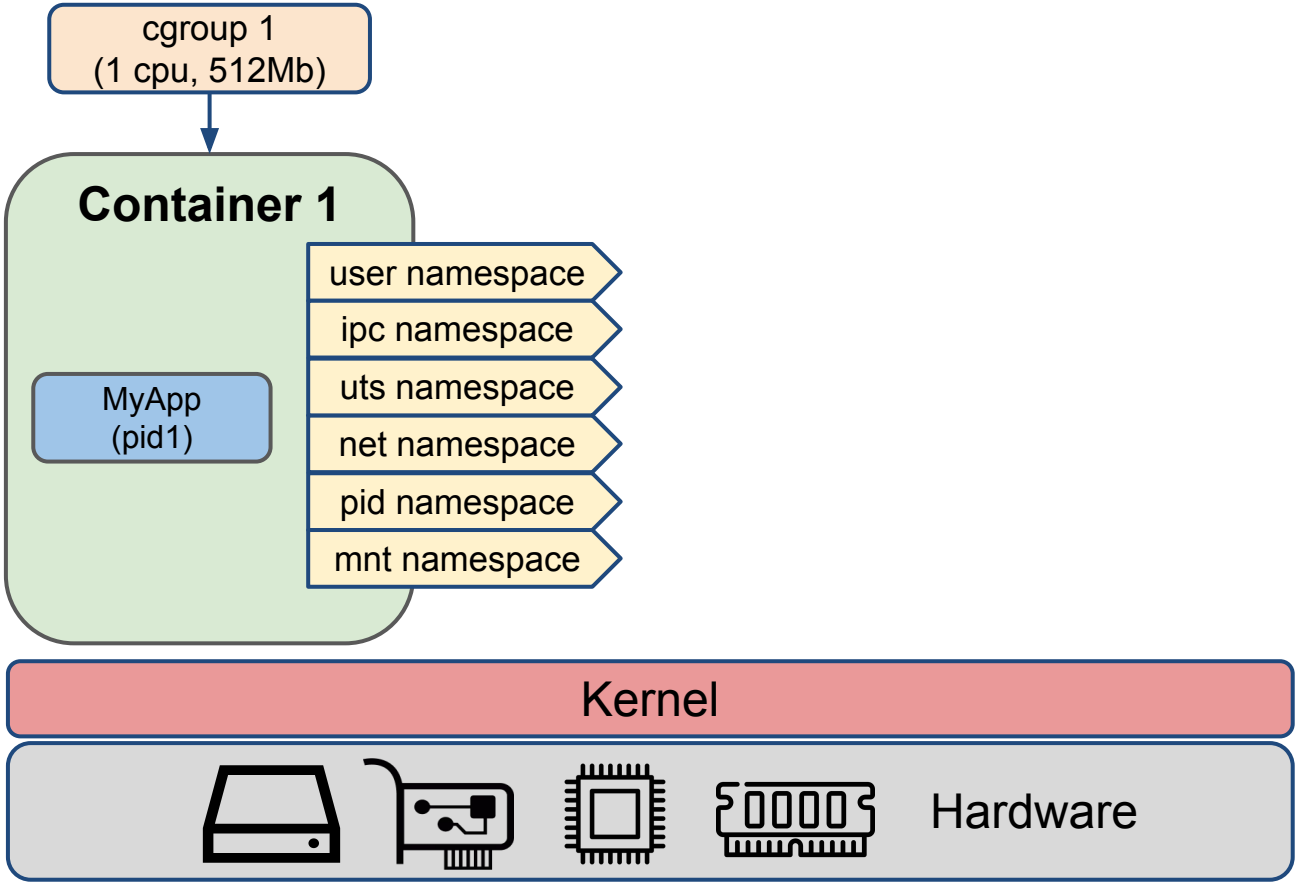
cgroups and namespaces



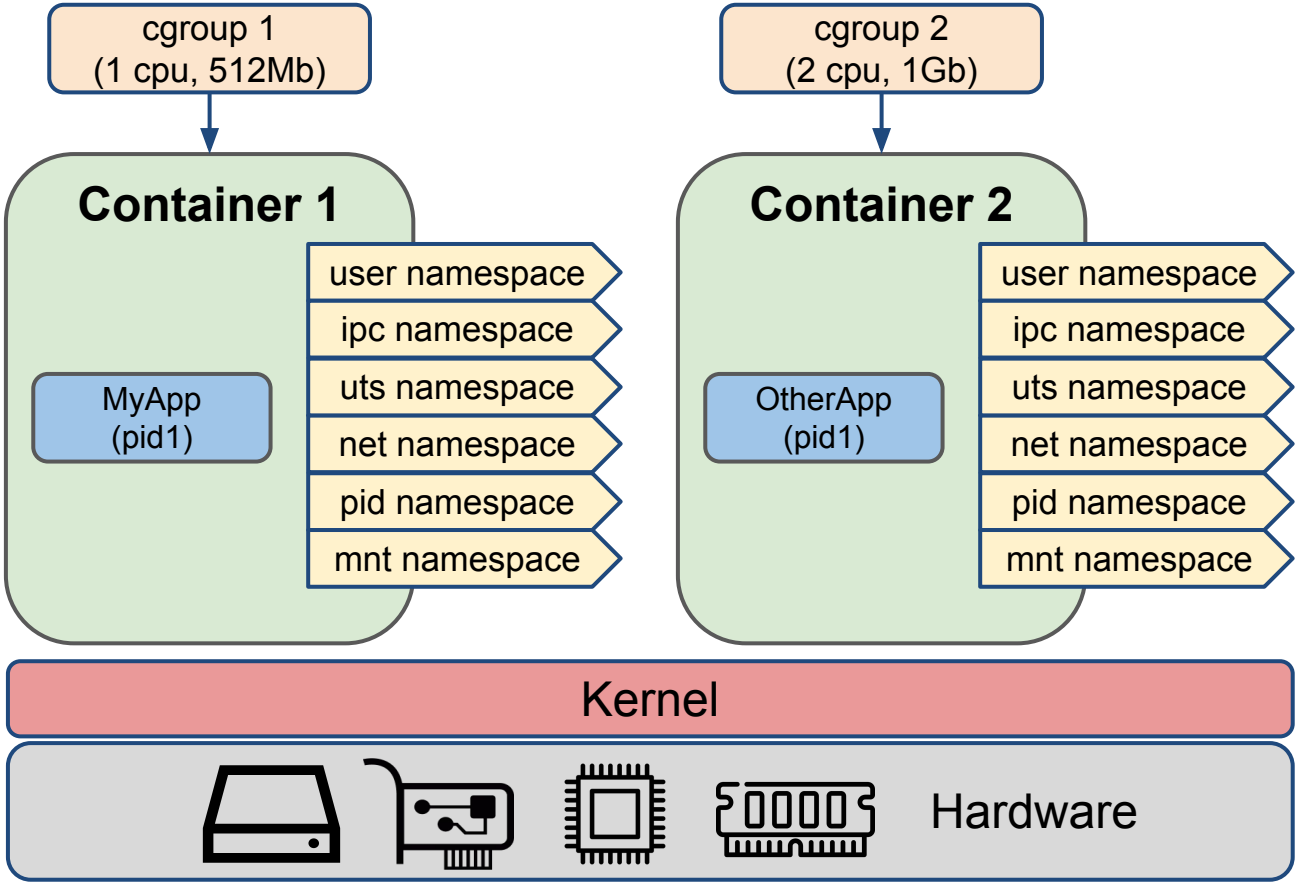
cgroups and namespaces



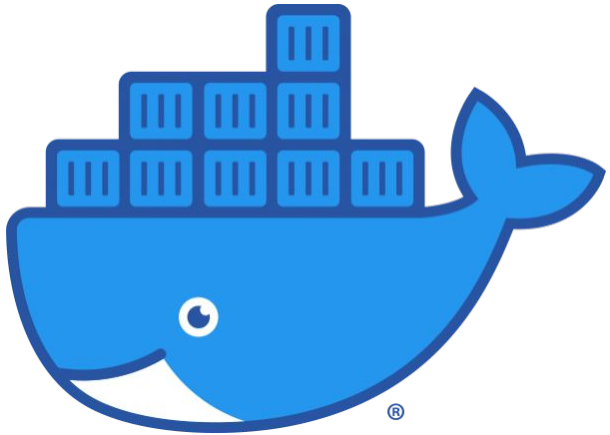
cgroups and namespaces



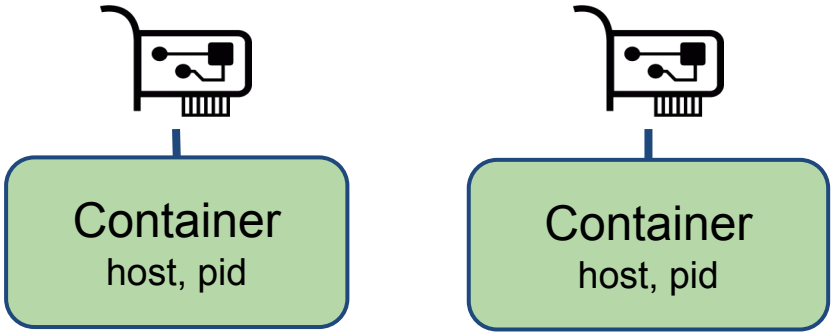
cgroups and namespaces



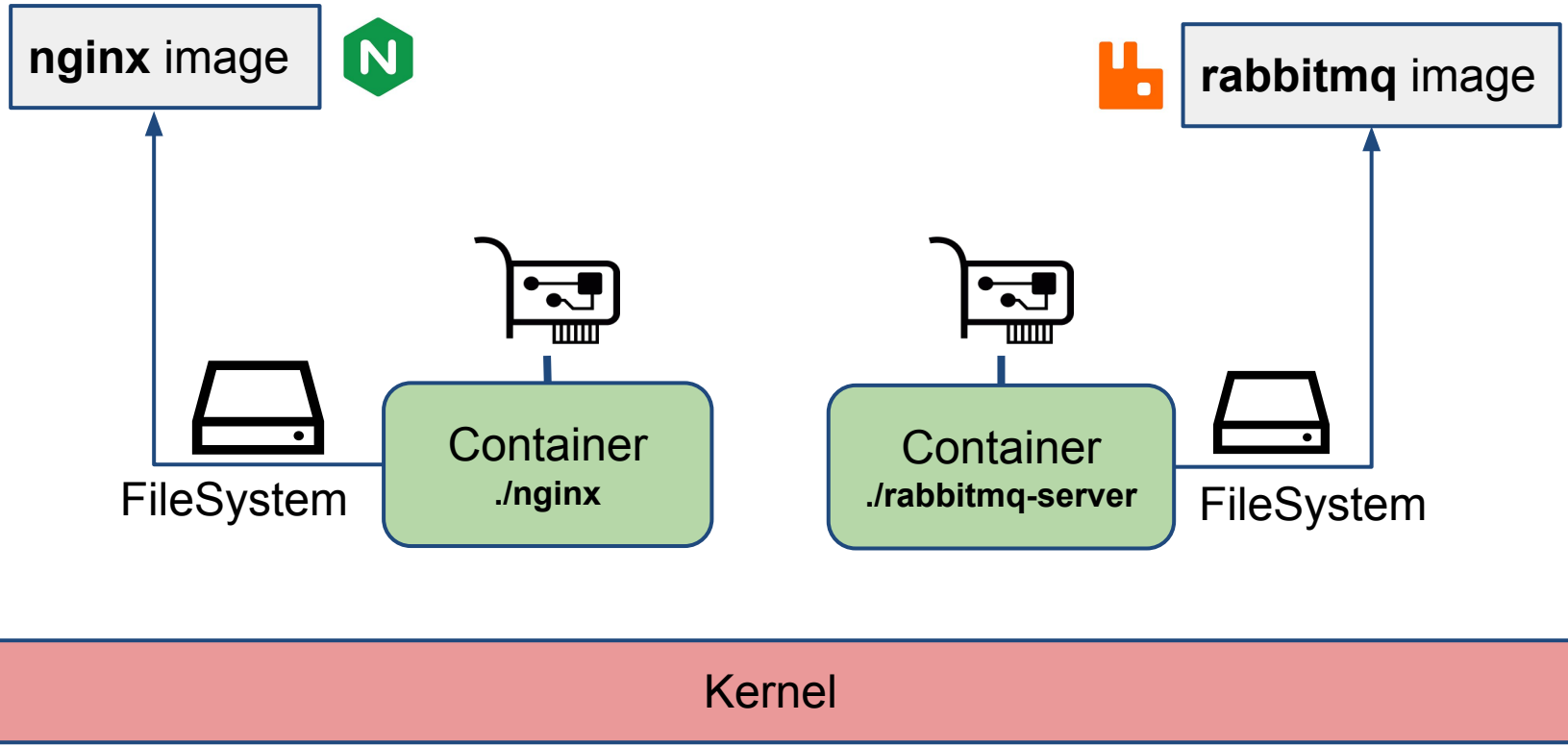
Docker



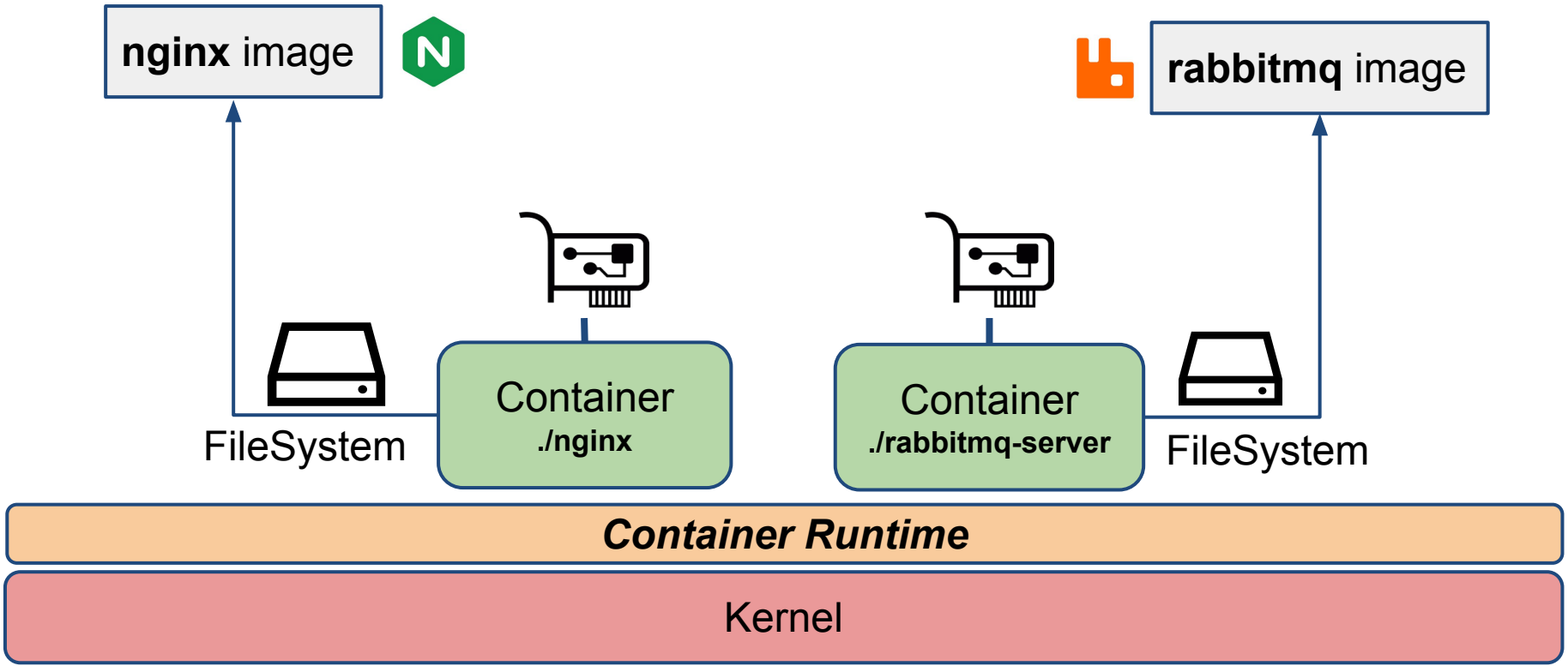
Containers = namespaces + cgroups



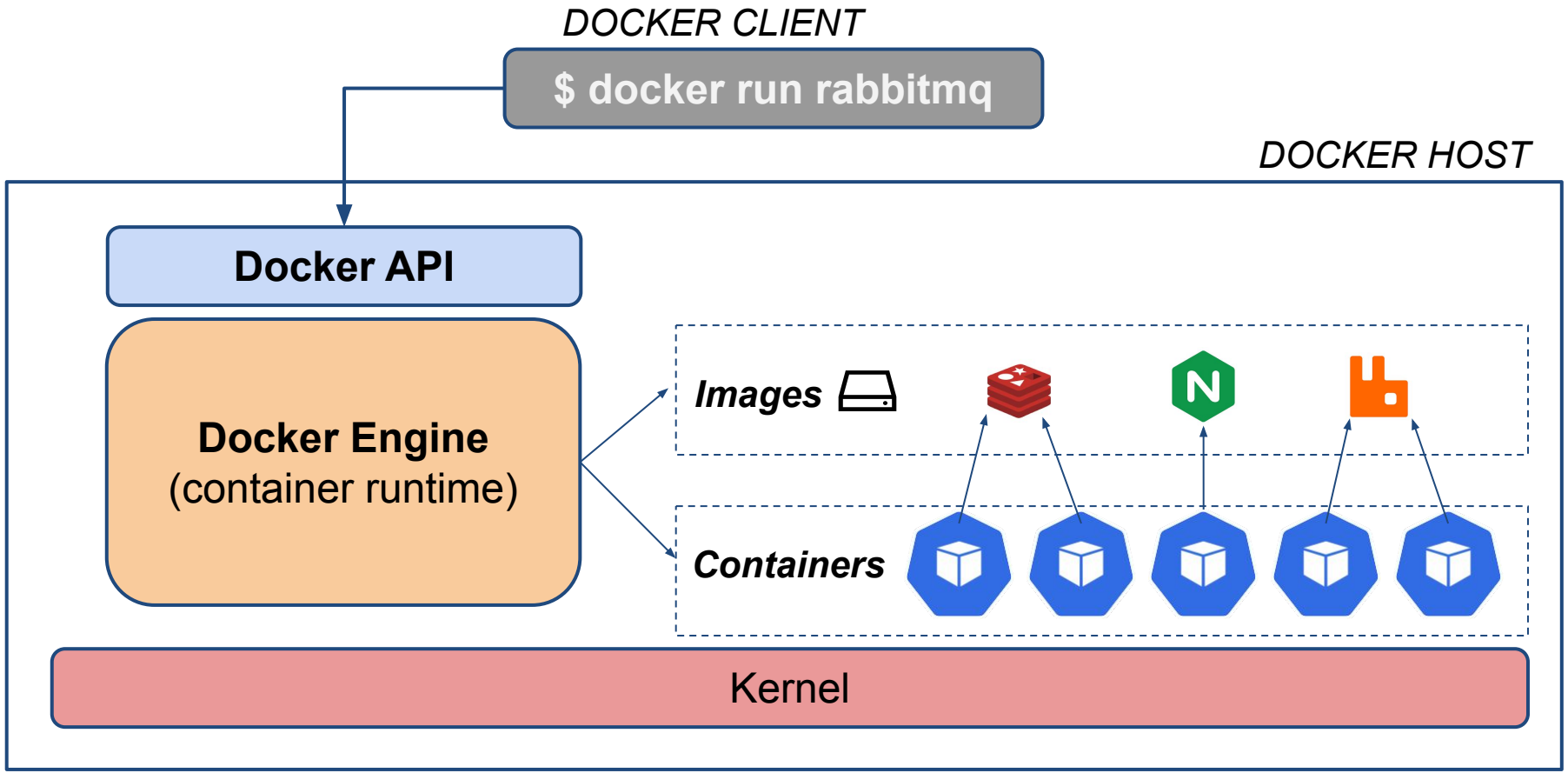
Containers = namespaces + cgroups + docker image



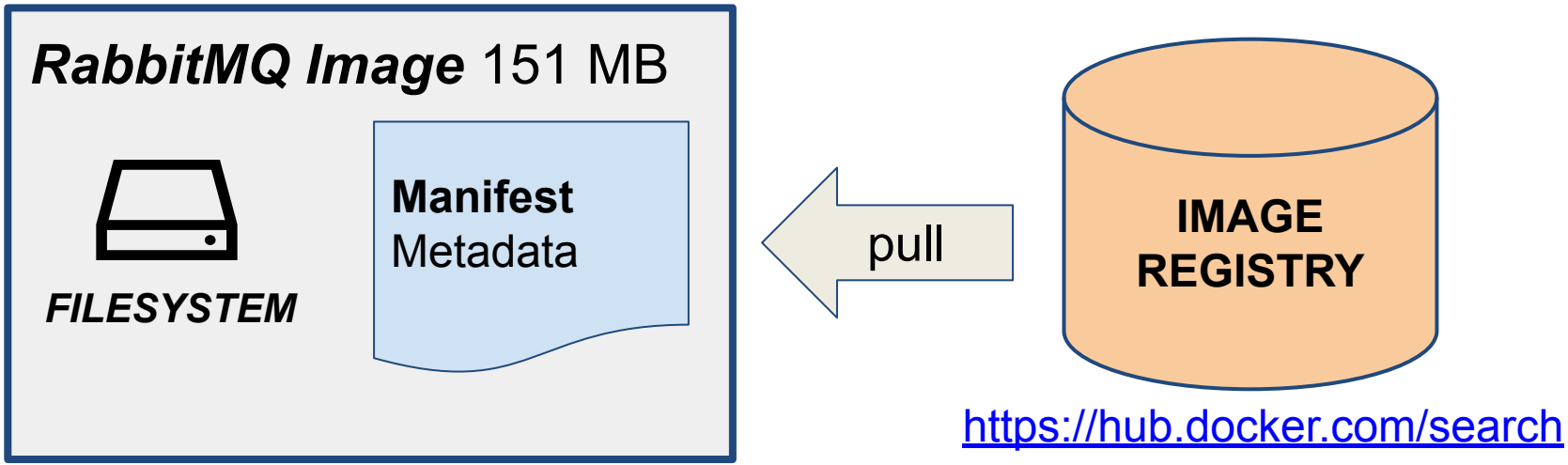
Containers = namespaces + cgroups + docker image



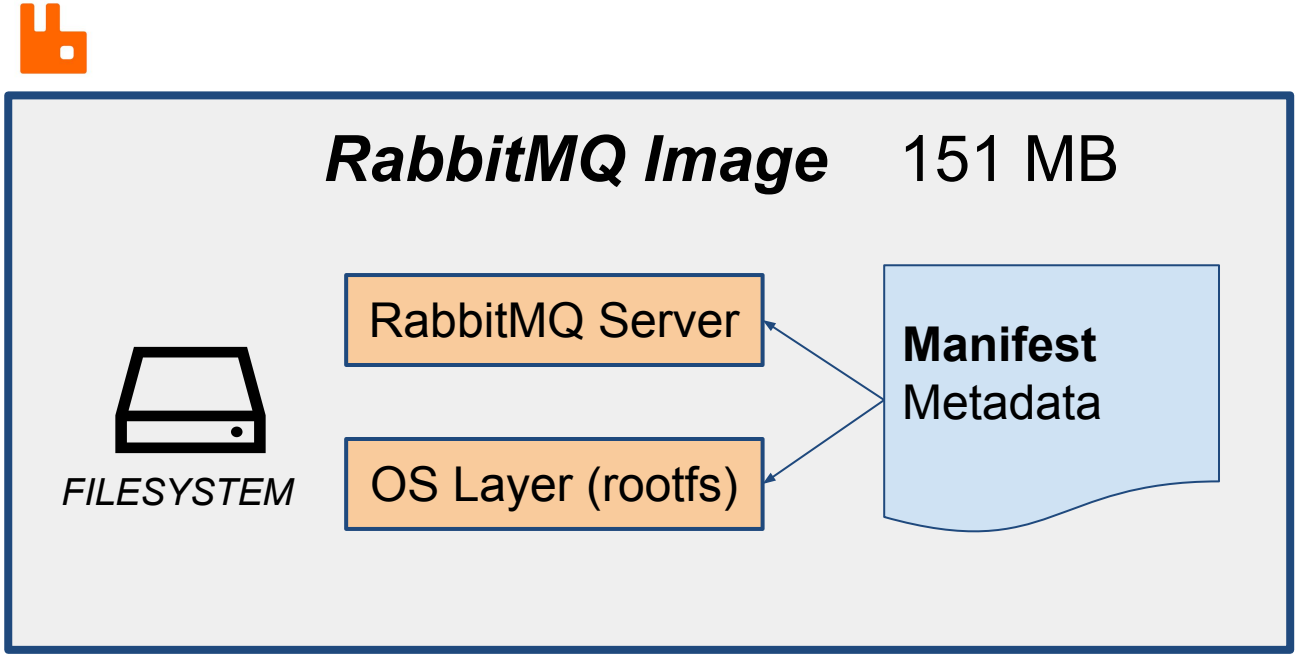
Docker architecture overview



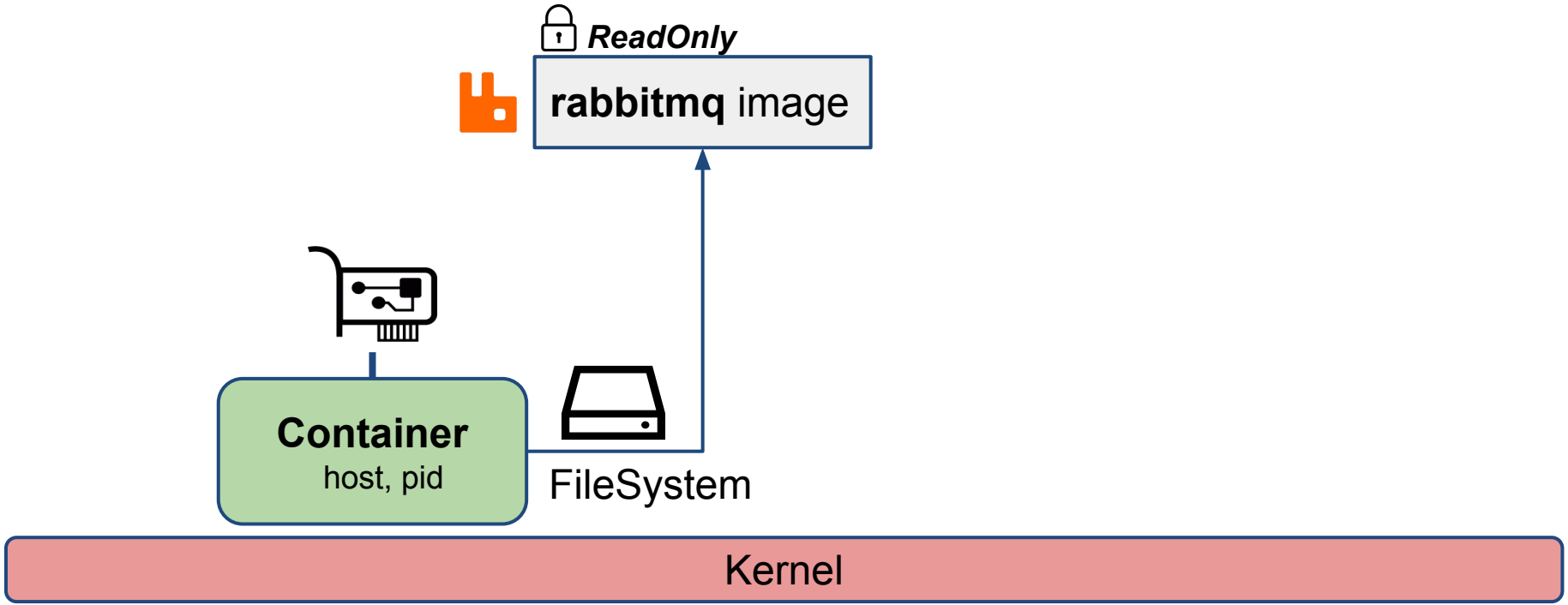
What is a Docker Image?



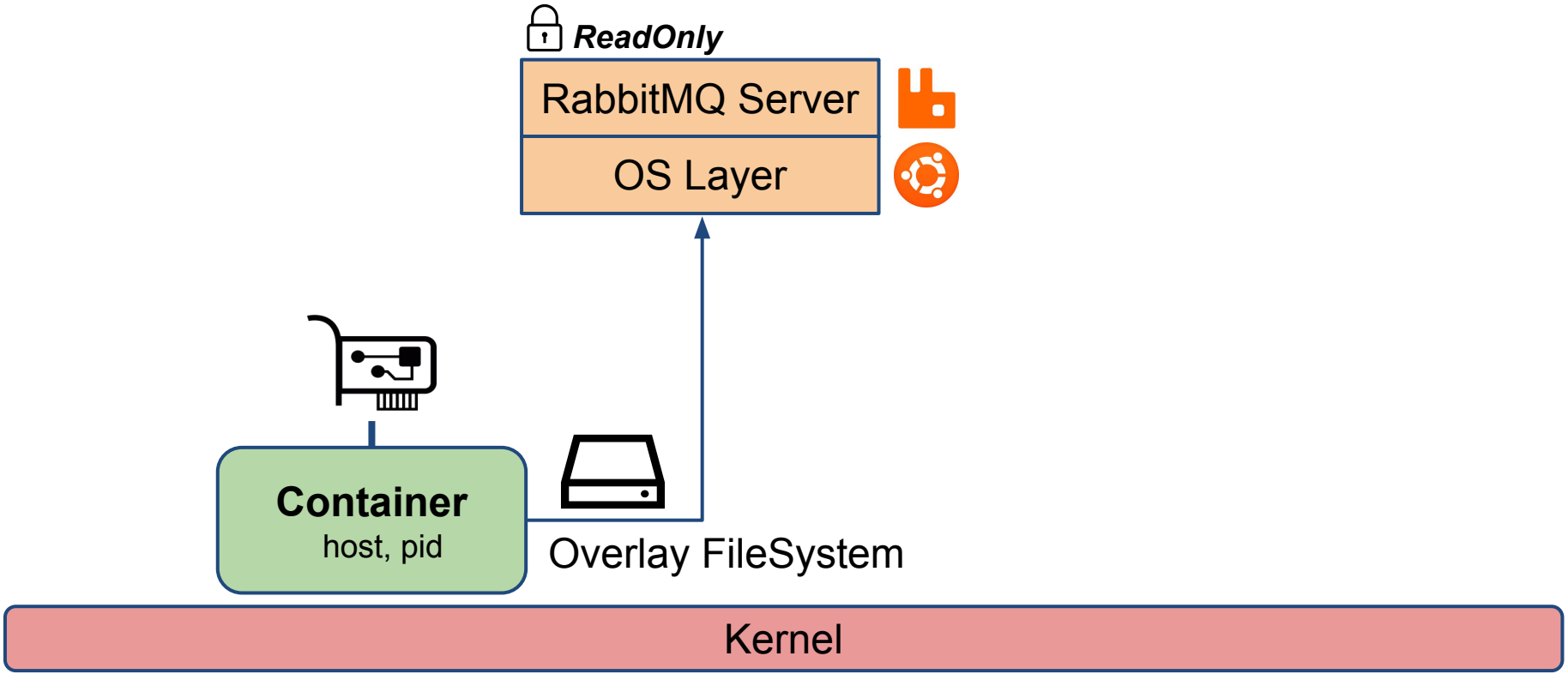
What is a Docker Image?



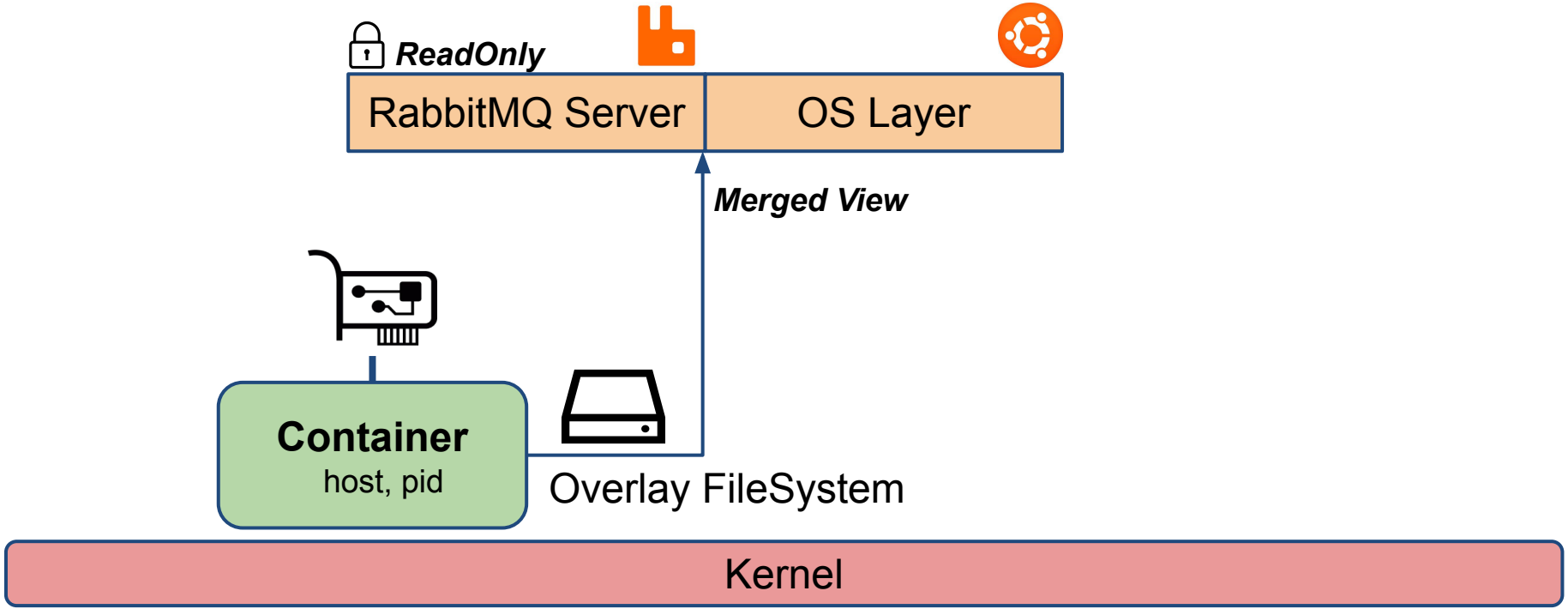
Overlay FileSystem



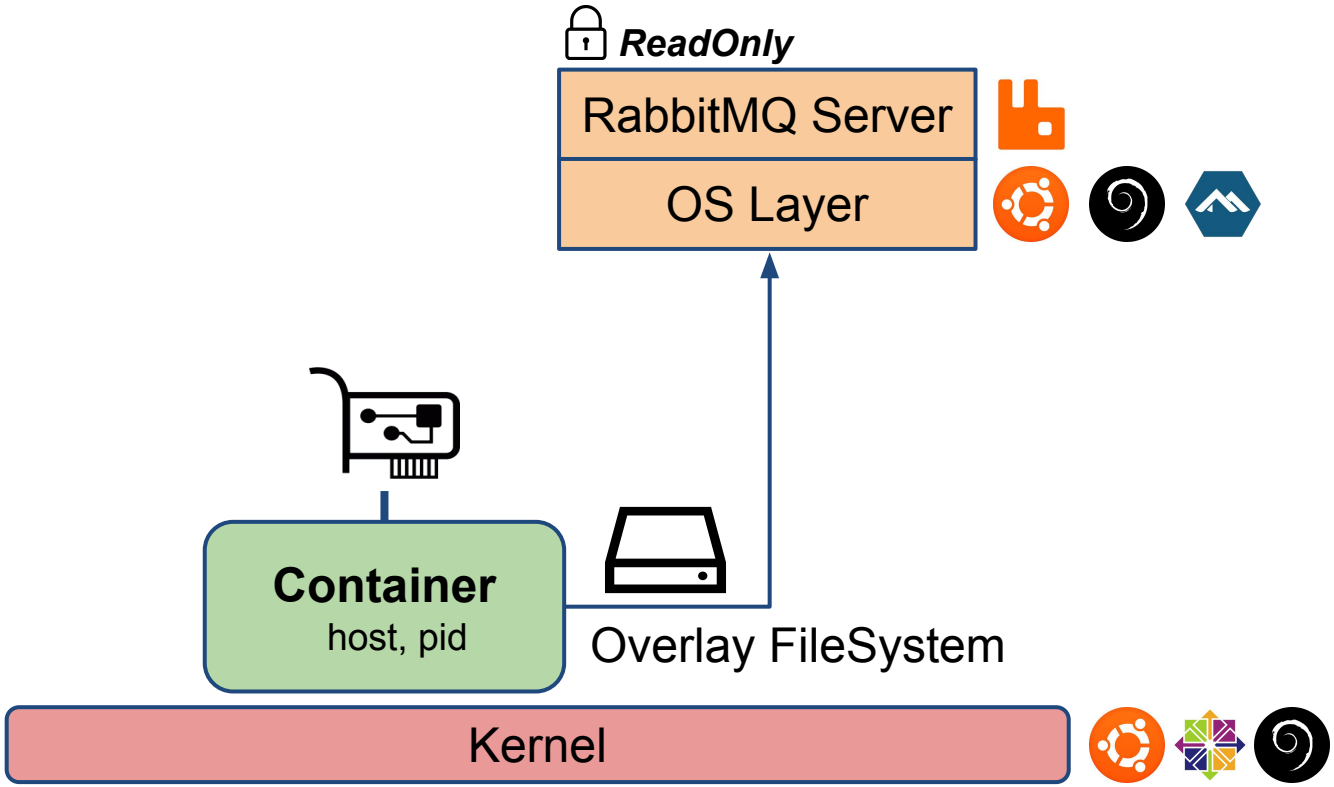
Overlay FileSystem



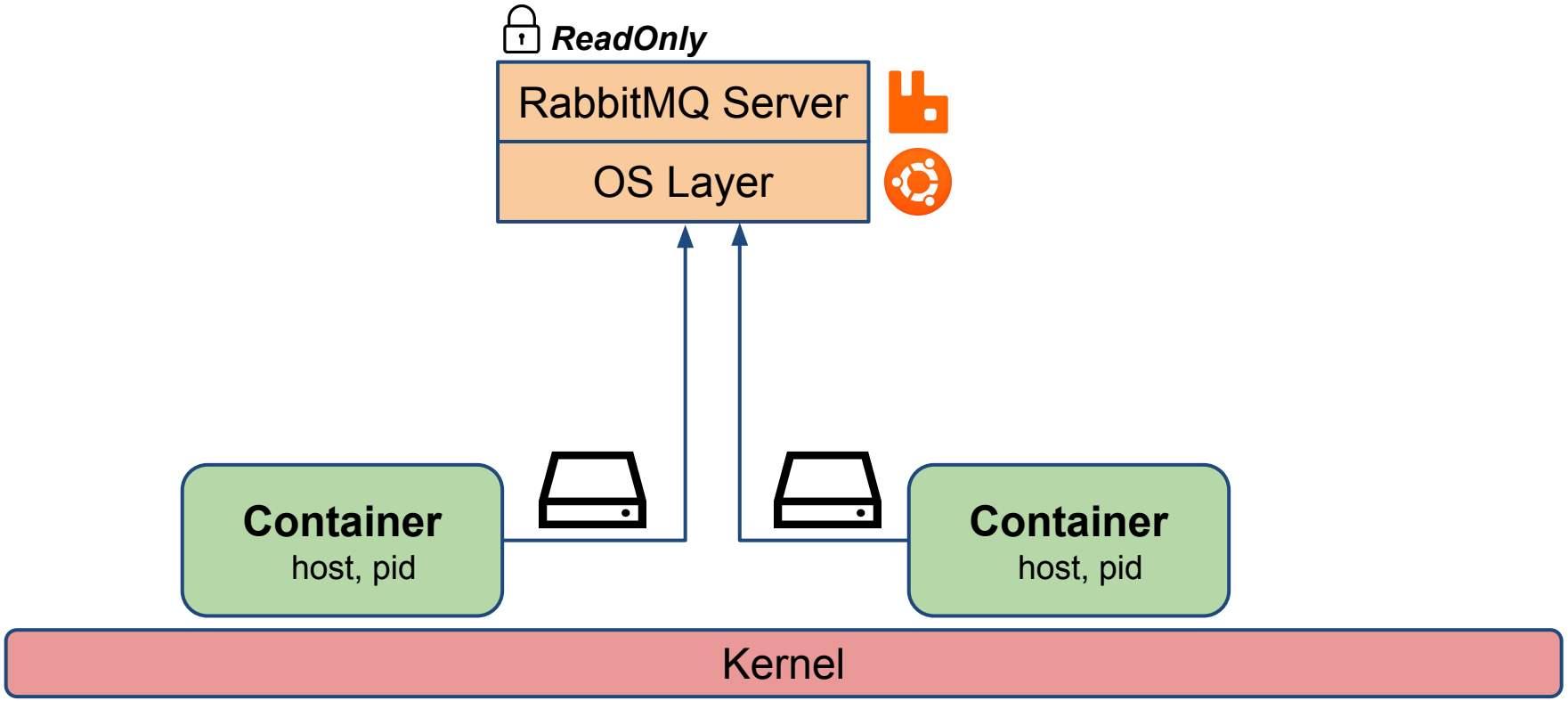
Overlay FileSystem



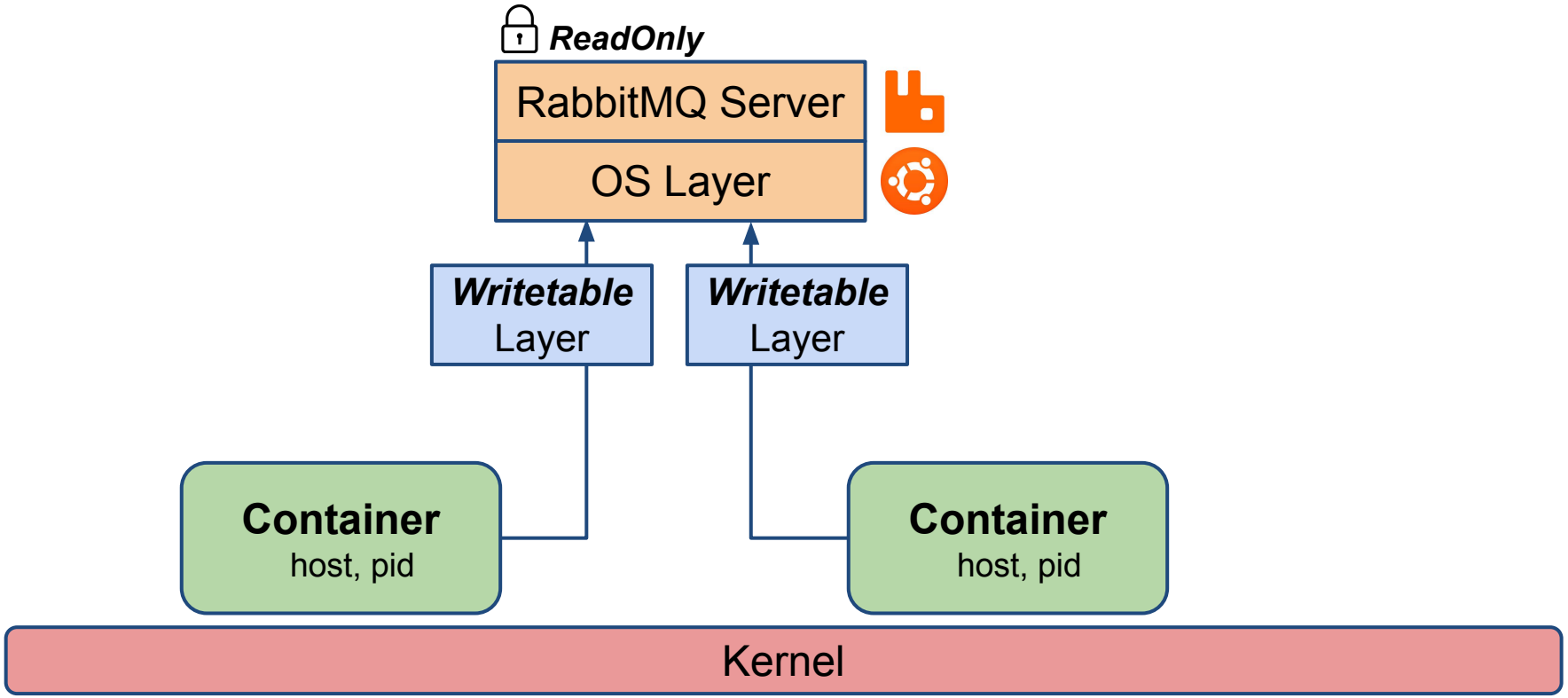
Overlay FileSystem



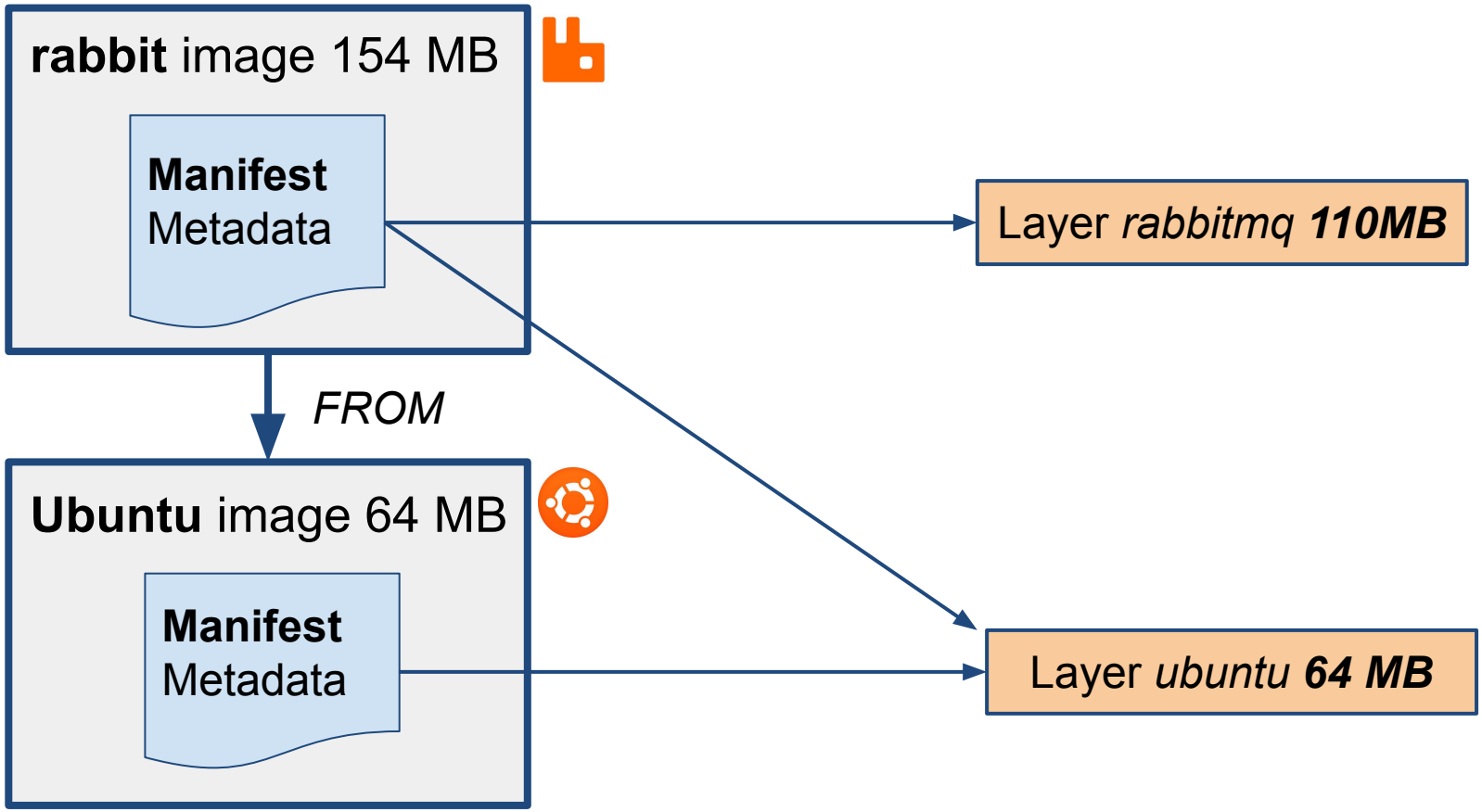
Overlay FileSystem



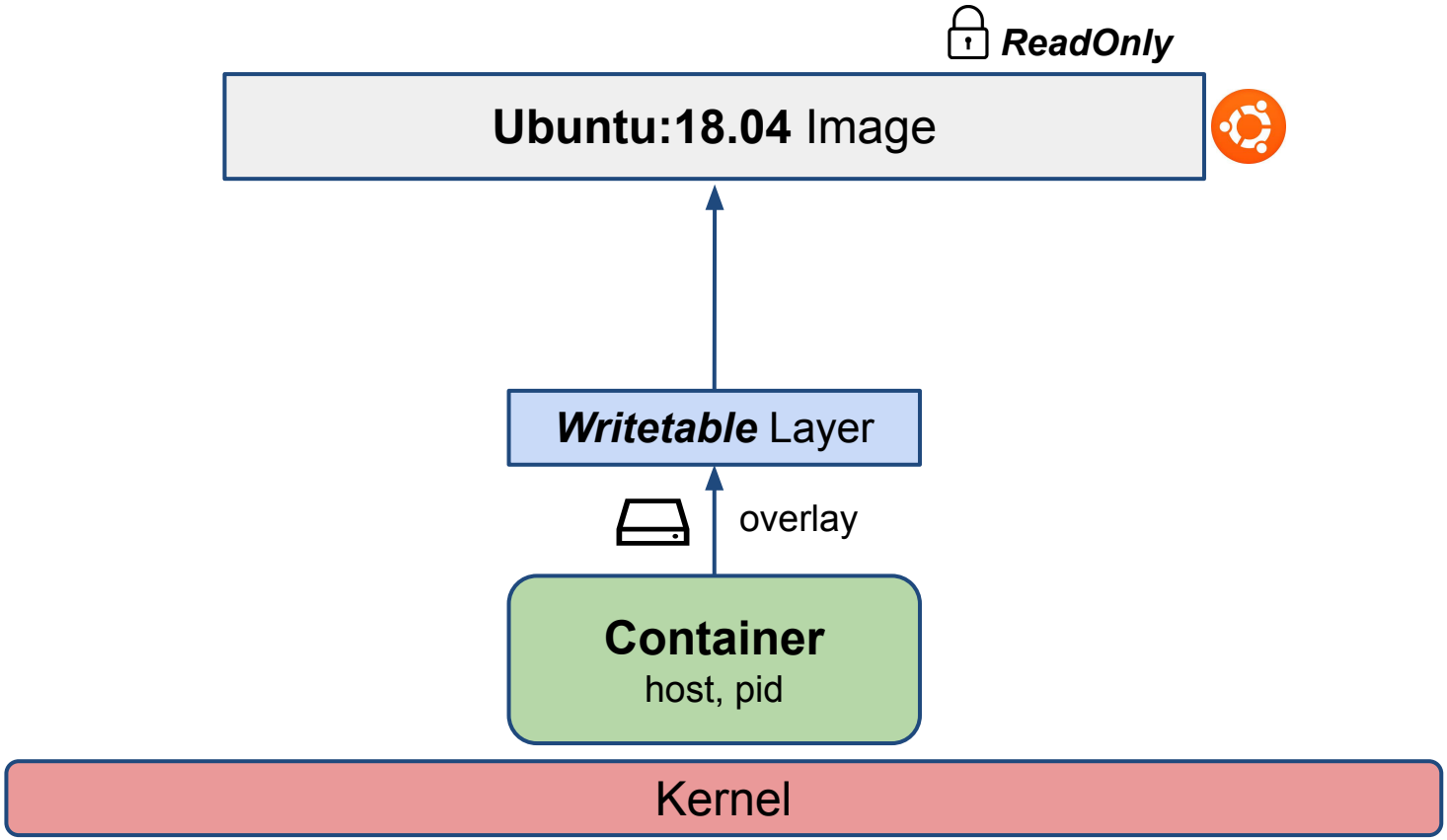
Overlay FileSystem



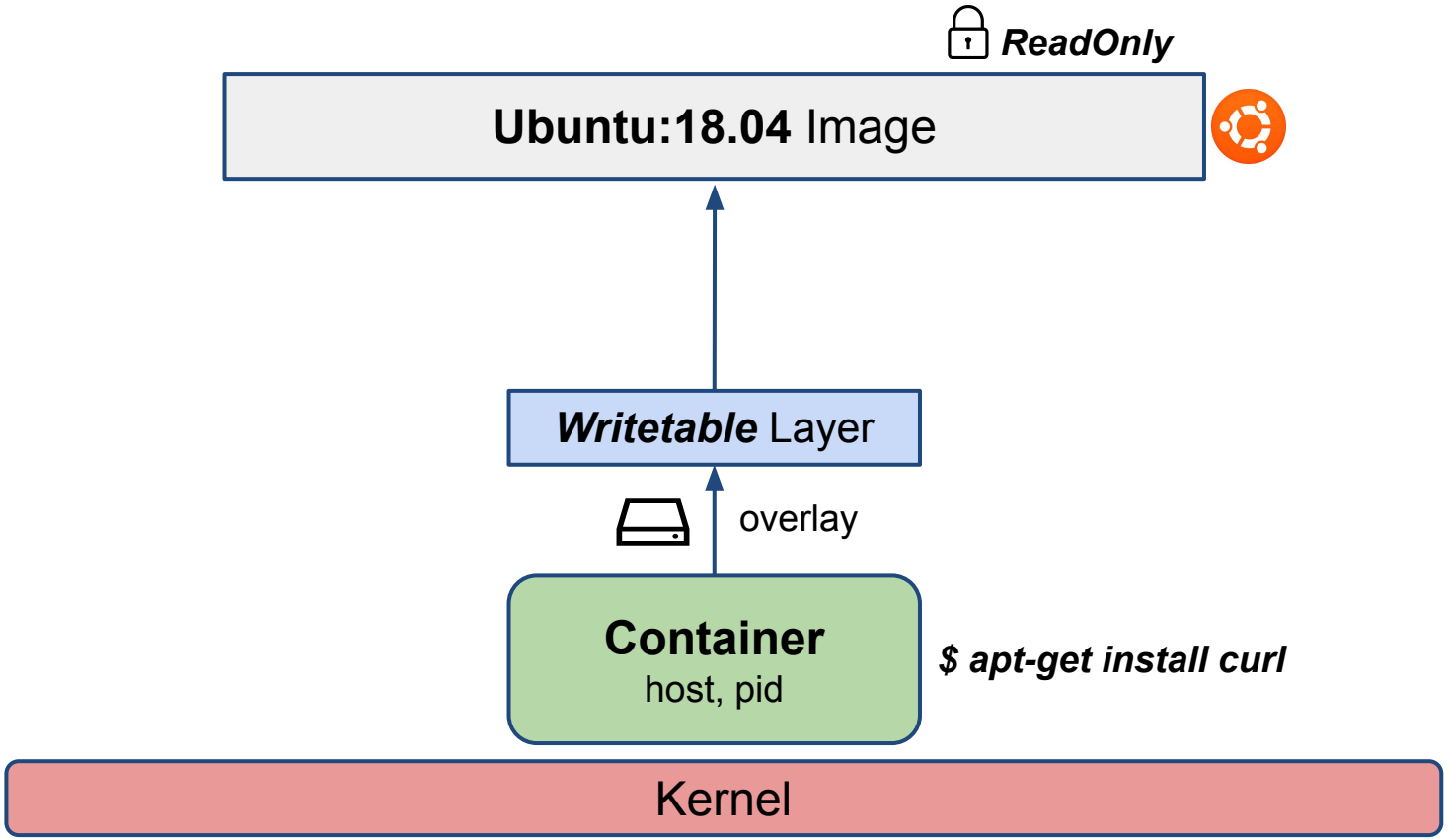
Overlay FileSystem



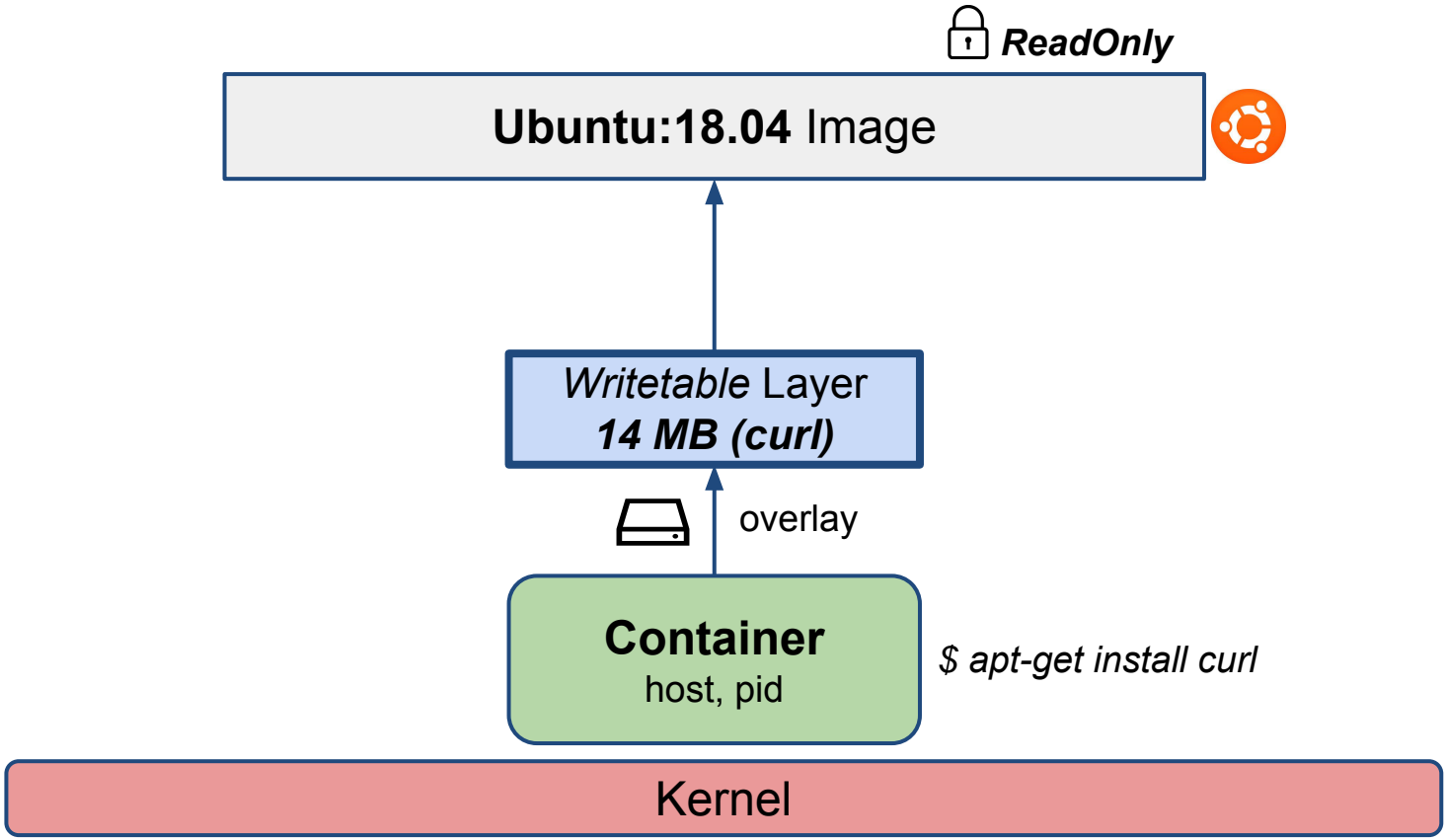
Creating layers and images



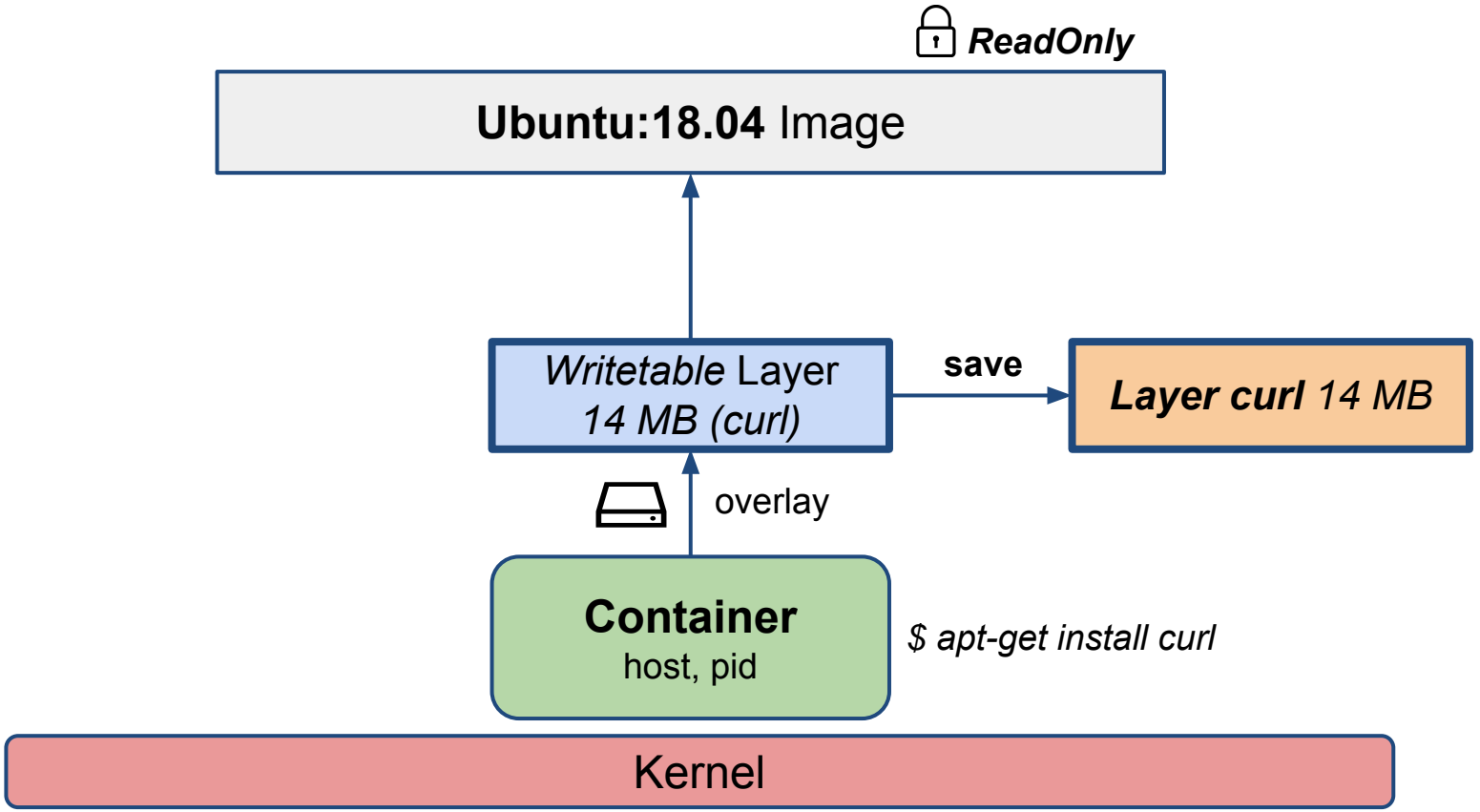
Creating layers and images



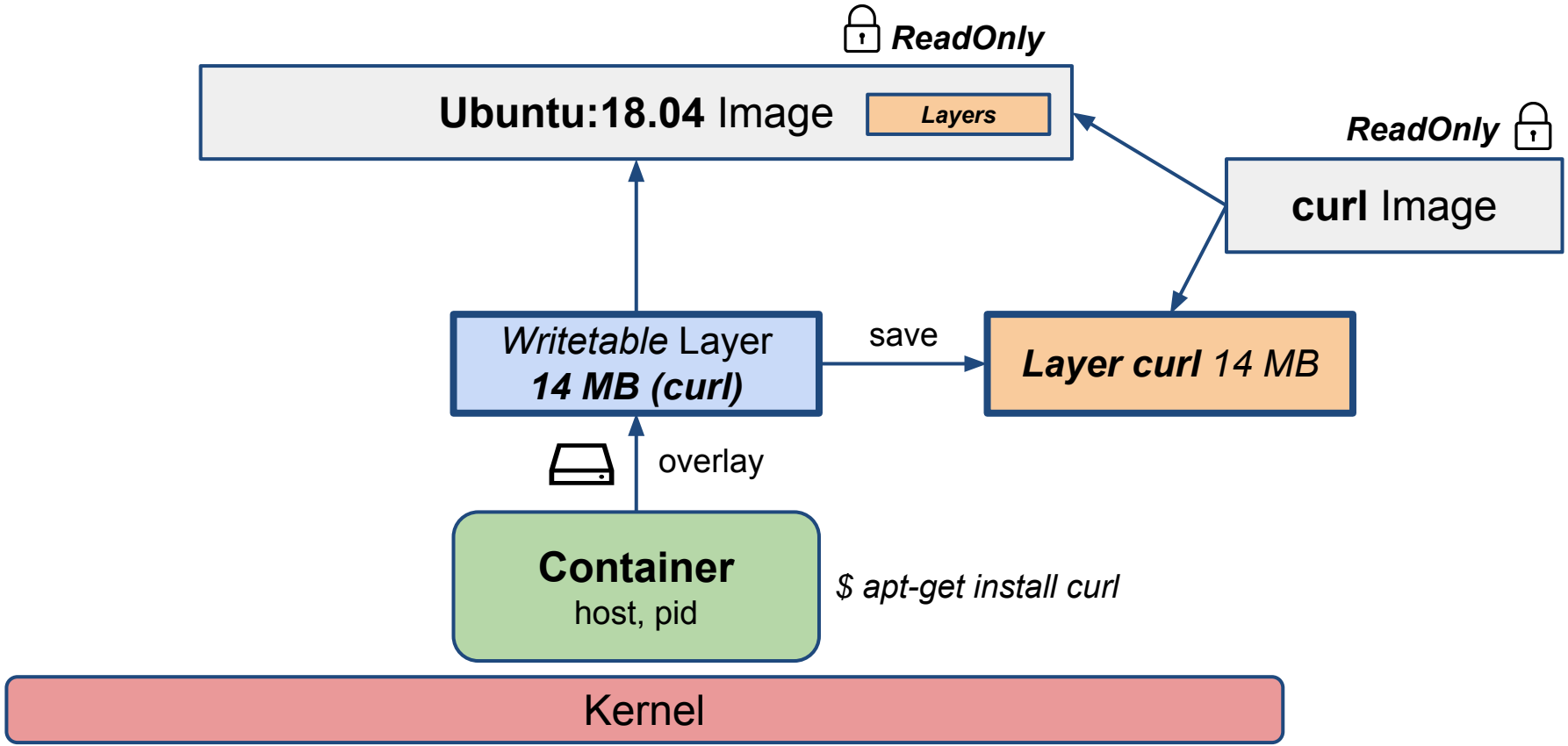
Creating layers and images



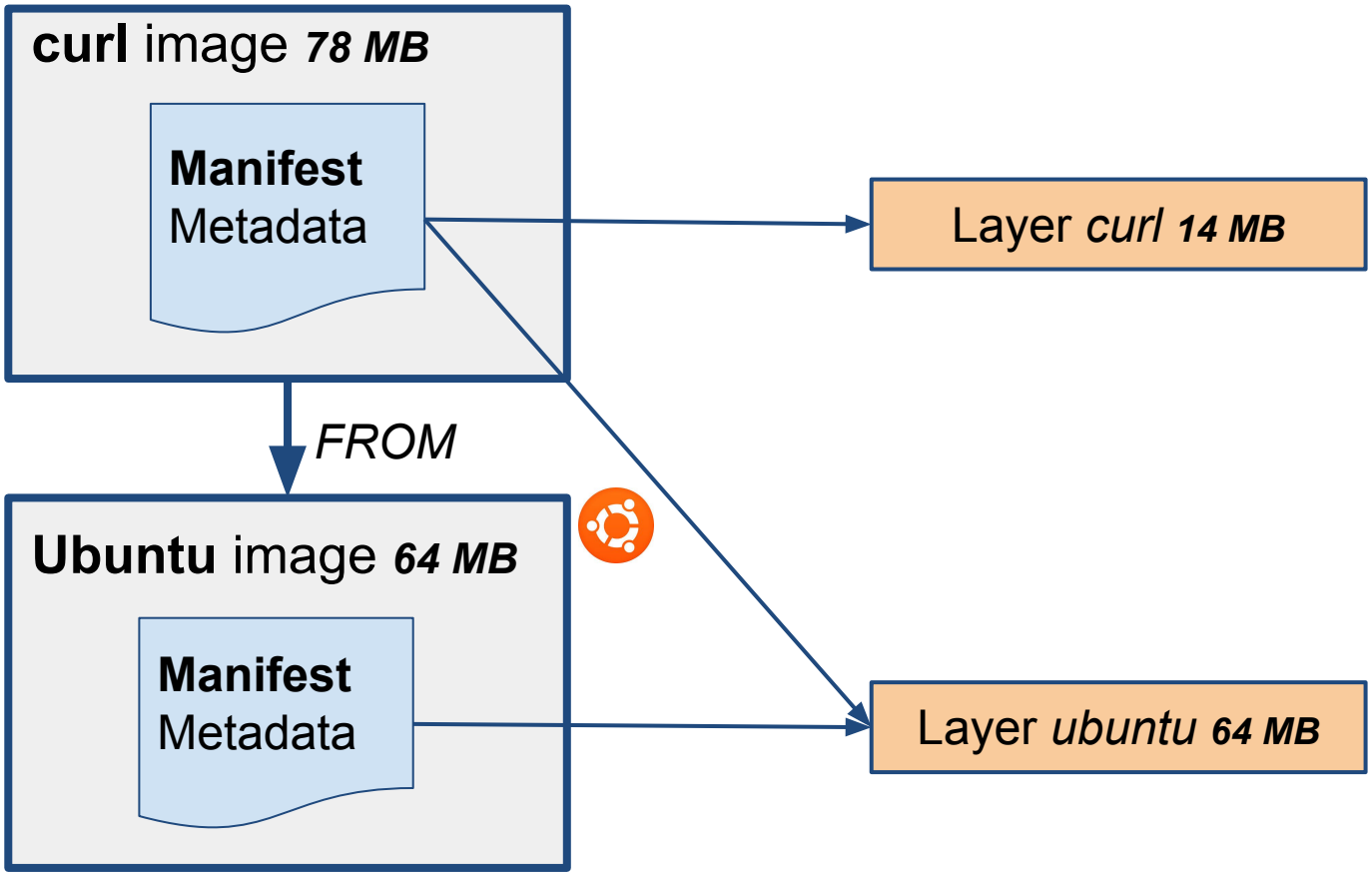
Creating layers and images



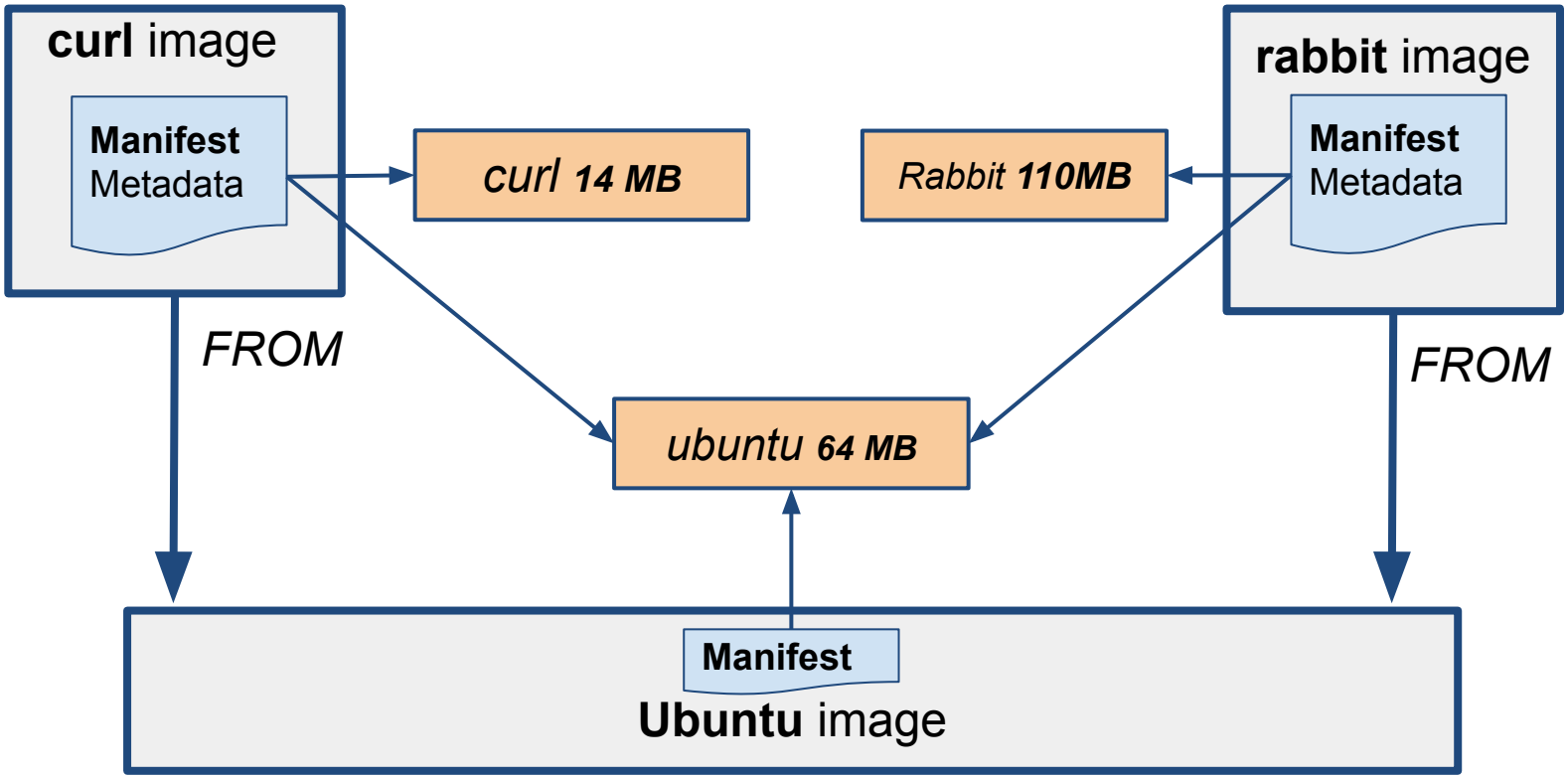
Creating layers and images



Creating layers and images

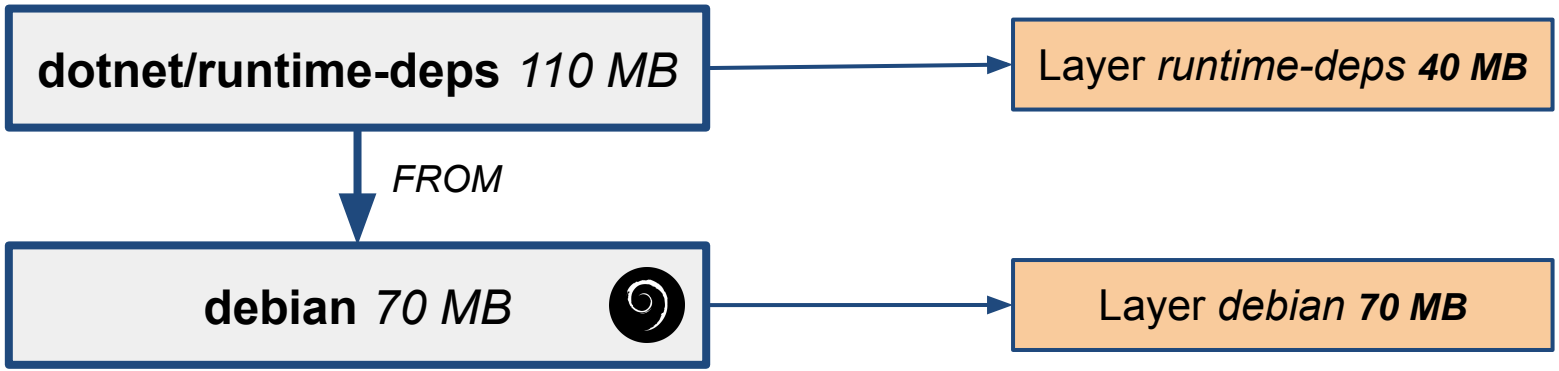


Creating layers and images

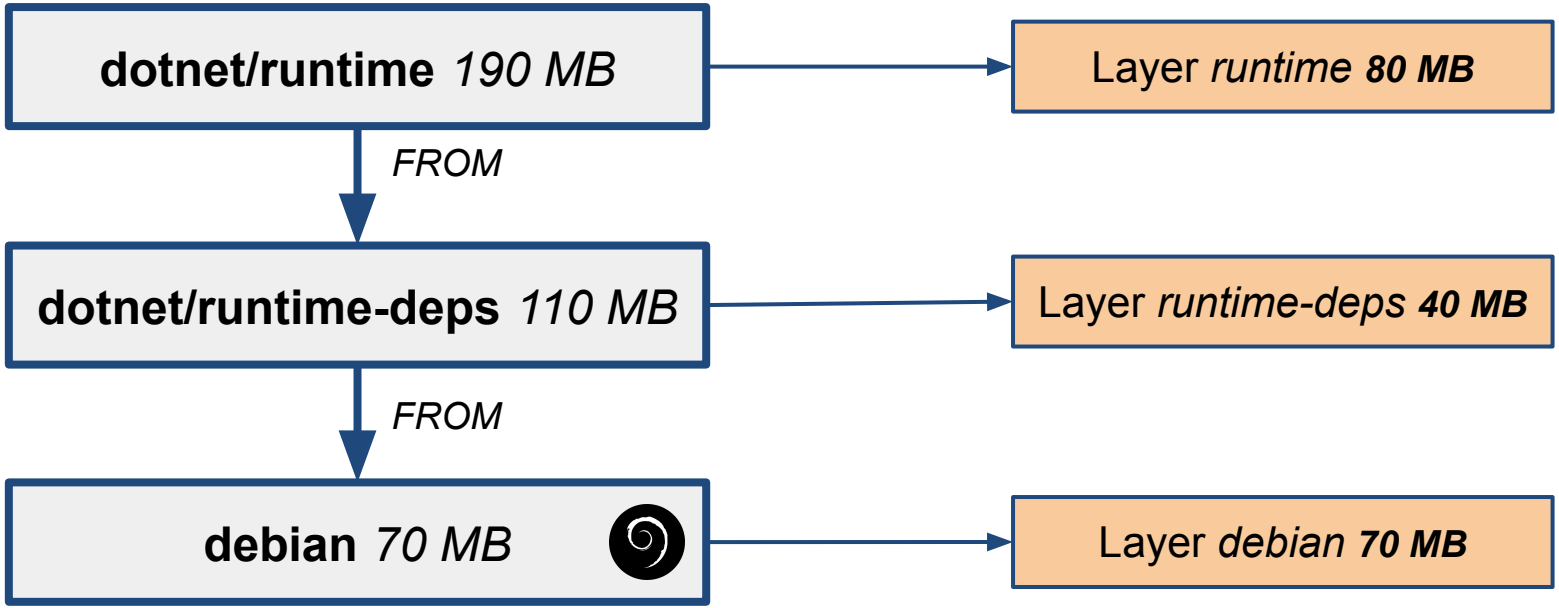


Dockerize your app!

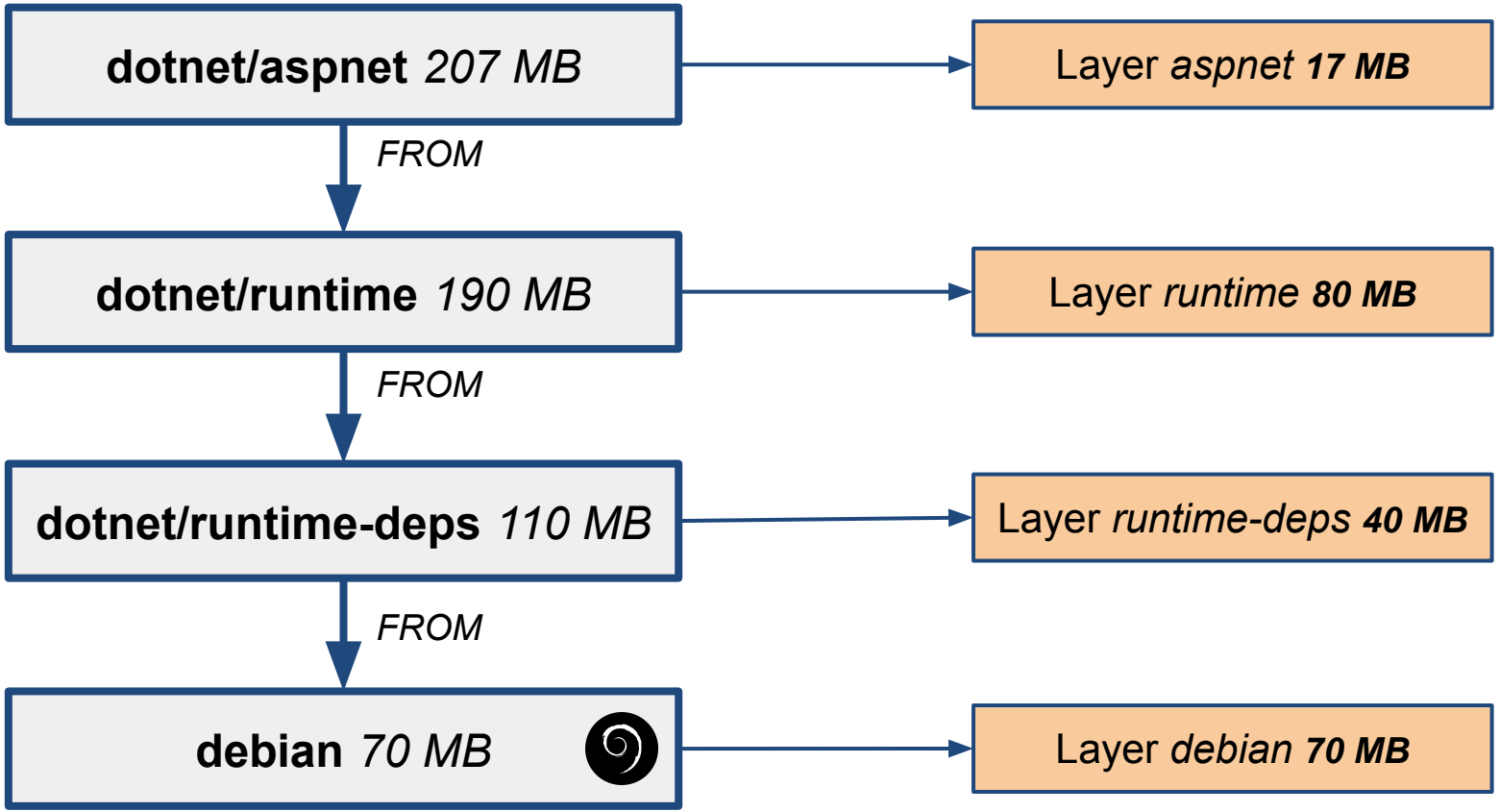
Dockerize your app!



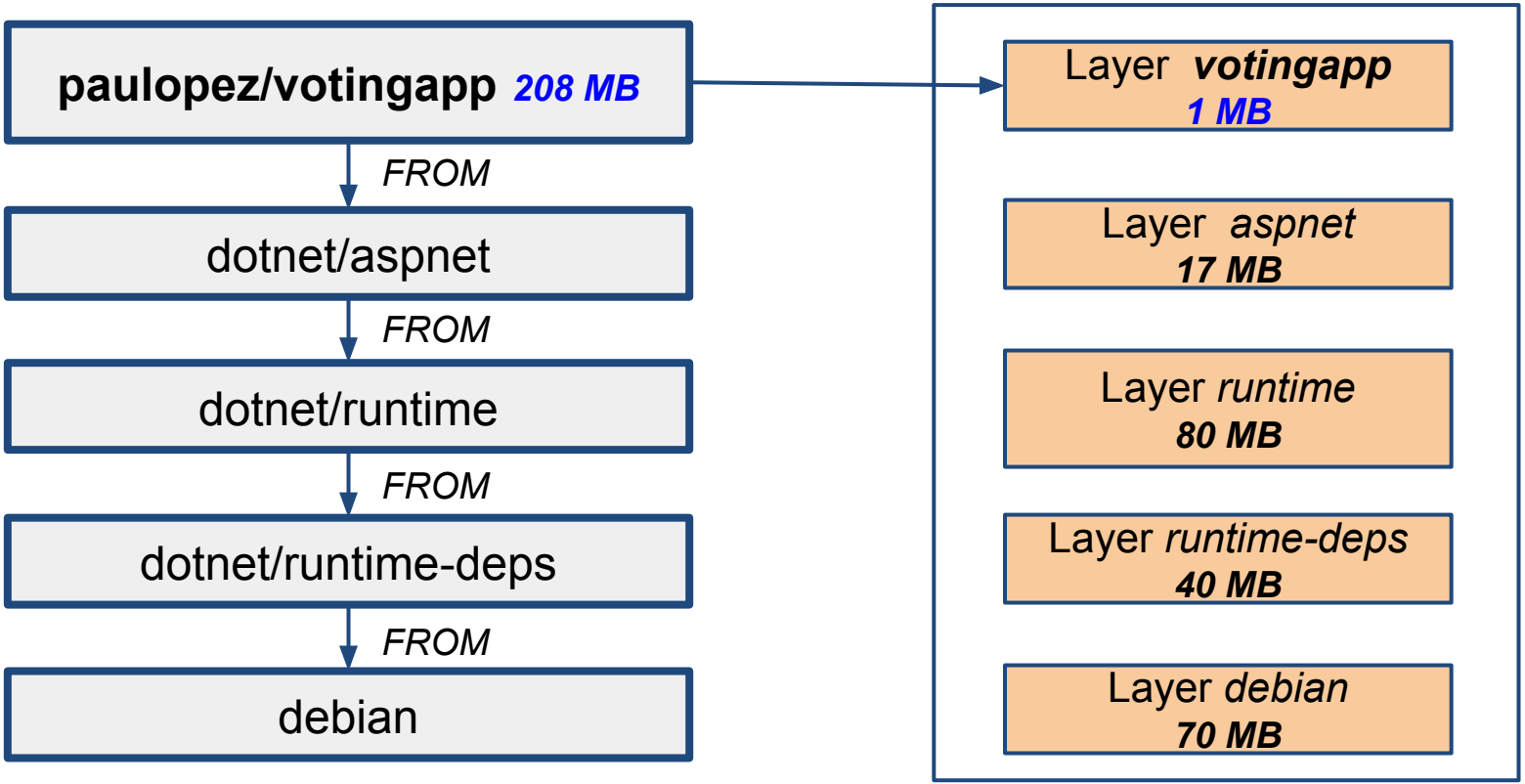
Dockerize your app!



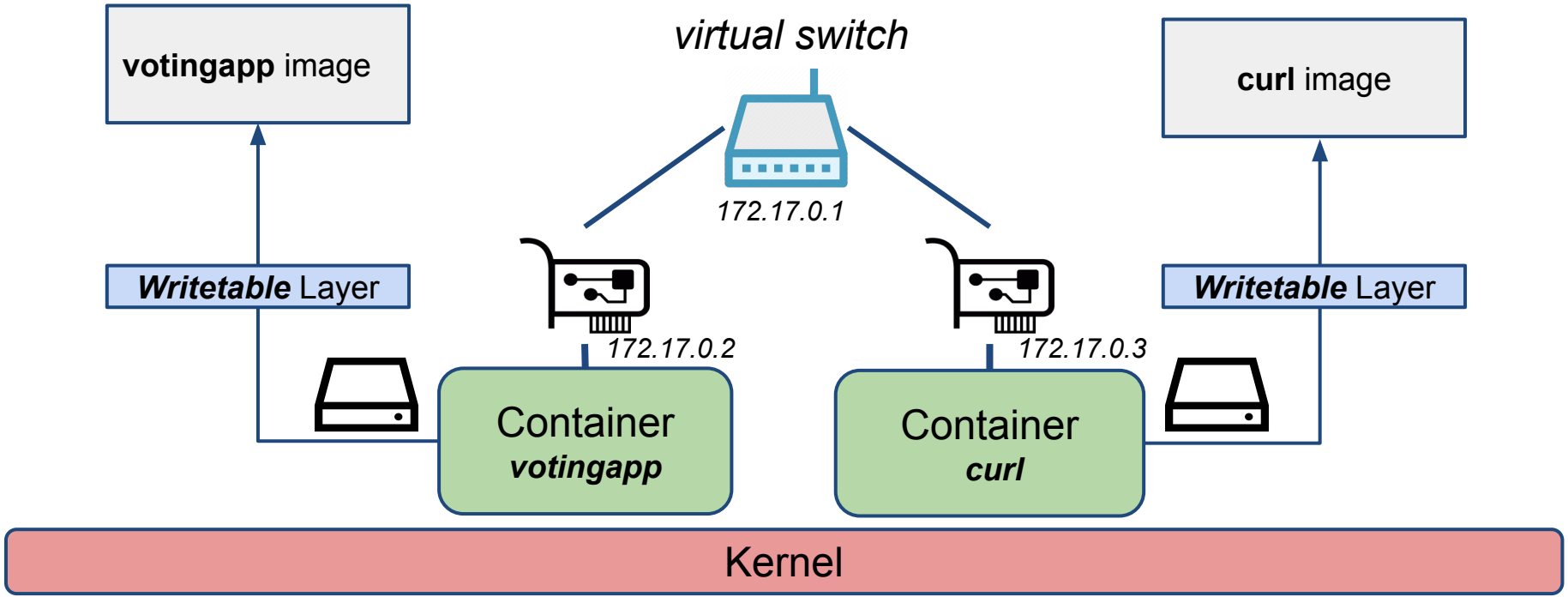
Dockerize your app!



Dockerize your app!



Docker networking



BLOGS

https://blog.aquasec.com/a-brief-history-of-containers-from-1970s-chroot-to-docker-2016
https://www.opcito.com/blogs/from-the-ceos-desk-dockers-moby-and-linuxkit-making-containers-mainstream/
https://docs.docker.com/storage/storagedriver/
https://www.suse.com/c/demystifying-containers-part-i-kernel-space/
https://en.wikipedia.org/wiki/UnionFS
https://docs.docker.com/engine/reference/builder/
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/
https://learnk8s.io/blog/smaller-docker-images
https://www.ardanlabs.com/blog/2020/02/docker-images-part1-reducing-image-size.html
https://www.ardanlabs.com/blog/2020/02/docker-images-part2-details-specific-to-different-languages.html
https://github.com/opencontainers

TALKS

https://www.youtube.com/watch?v=sK5i-N34im8
https://www.youtube.com/watch?v=6v_BDHIgOY8
https://www.youtube.com/watch?v=rfjmeakbeH8
https://www.youtube.com/watch?v=8iWb71ZOZPc
https://www.youtube.com/watch?v=doUktZIcXF0

COURSES

https://app.pluralsight.com/library/courses/docker-deep-dive/table-of-contents
https://app.pluralsight.com/library/courses/docker-deep-dive-update/table-of-contents