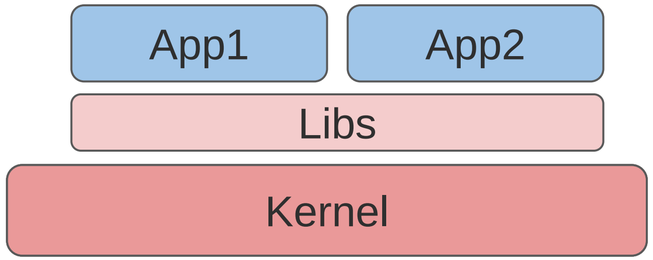
AGENDA - Day 2

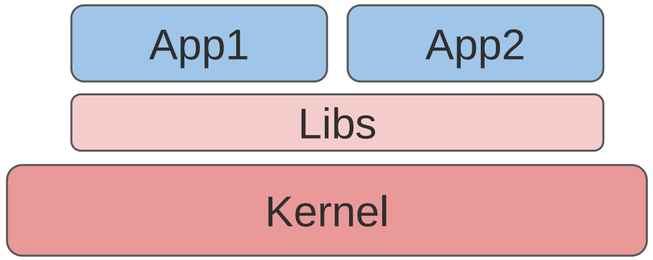
- Docker: containers and images
- Build images using a Docker file
- Dotnet images
- Docker networking
- Docker compose

Bare Metal



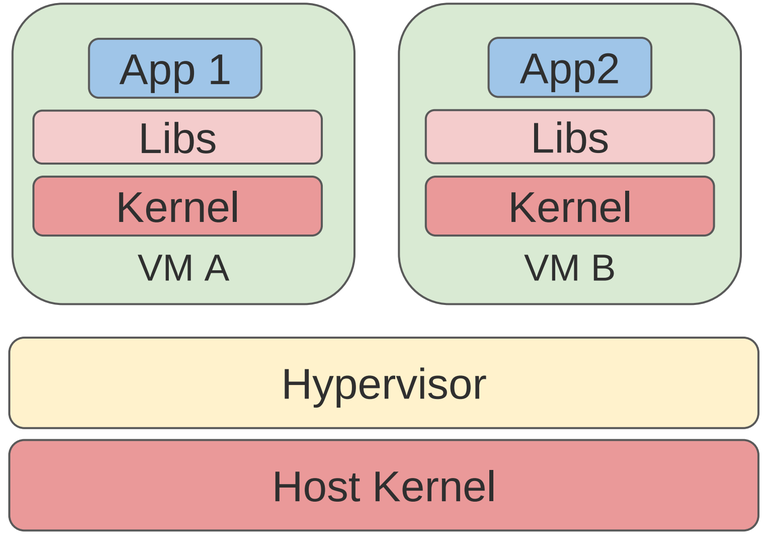
Size: ***KB***
Start up: ***ms***
Density: ***+1000***

Bare Metal



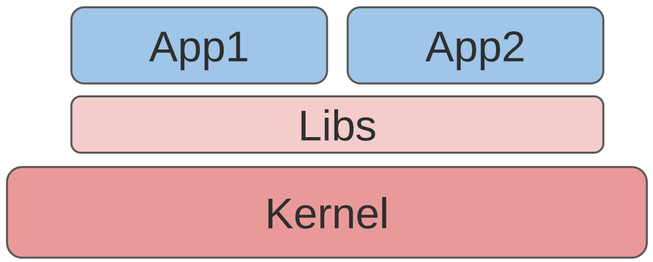
Size: *KB*
Start up: *ms*
Density: *+1000*

Virtual Machines



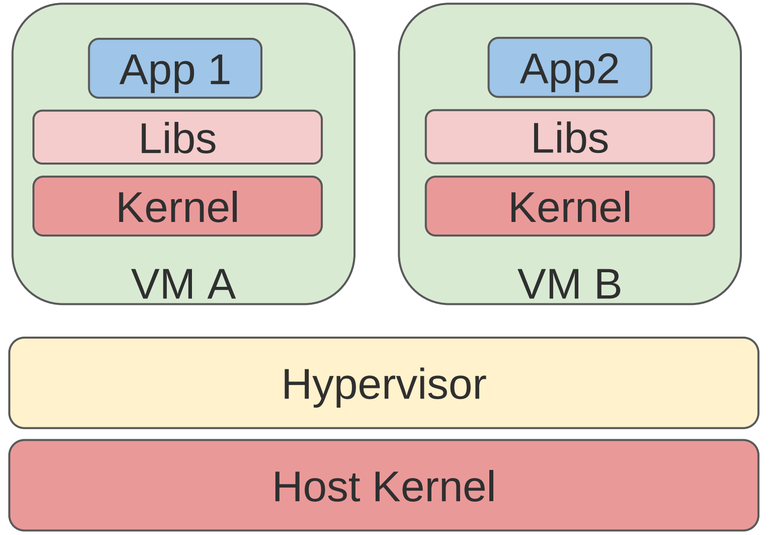
Size: ***GB***
Start up: ***seconds***
Density: ***+10***

Bare Metal



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

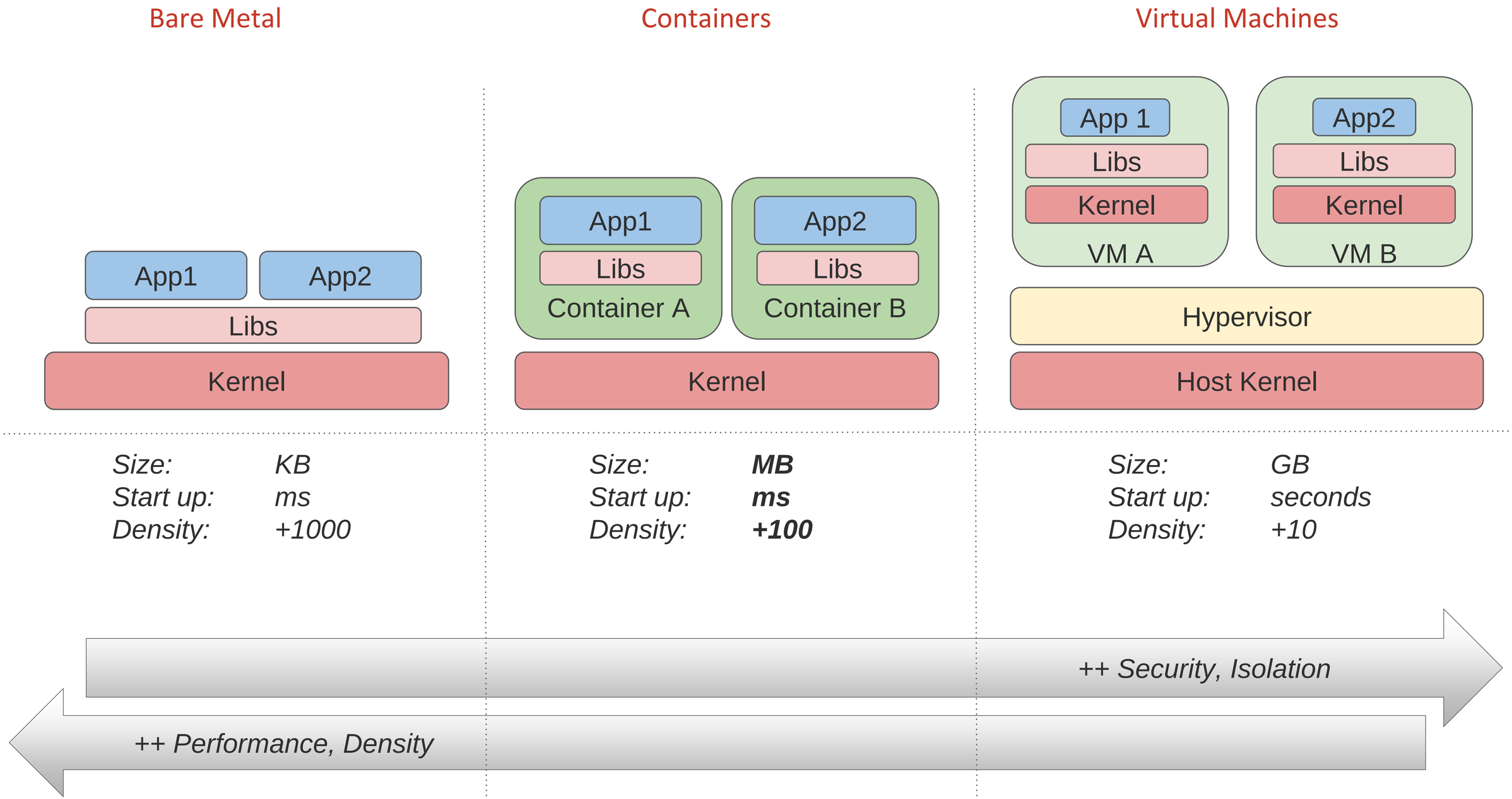
Virtual Machines

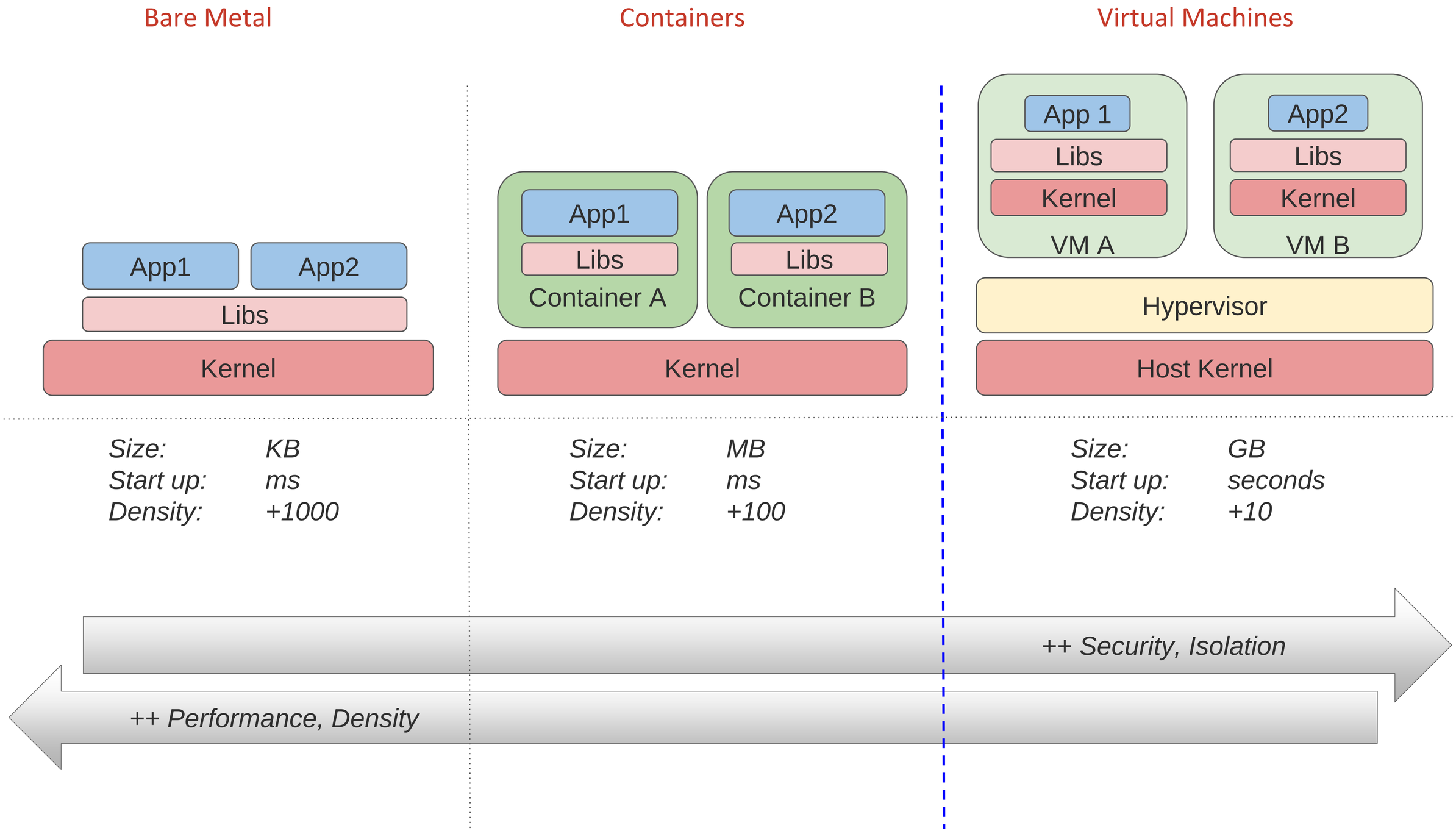


Size: *GB*
Start up: *seconds*
Density: *+10*

++ Security, Isolation

++ Performance, Density


Bare Metal
Containers
Virtual Machines
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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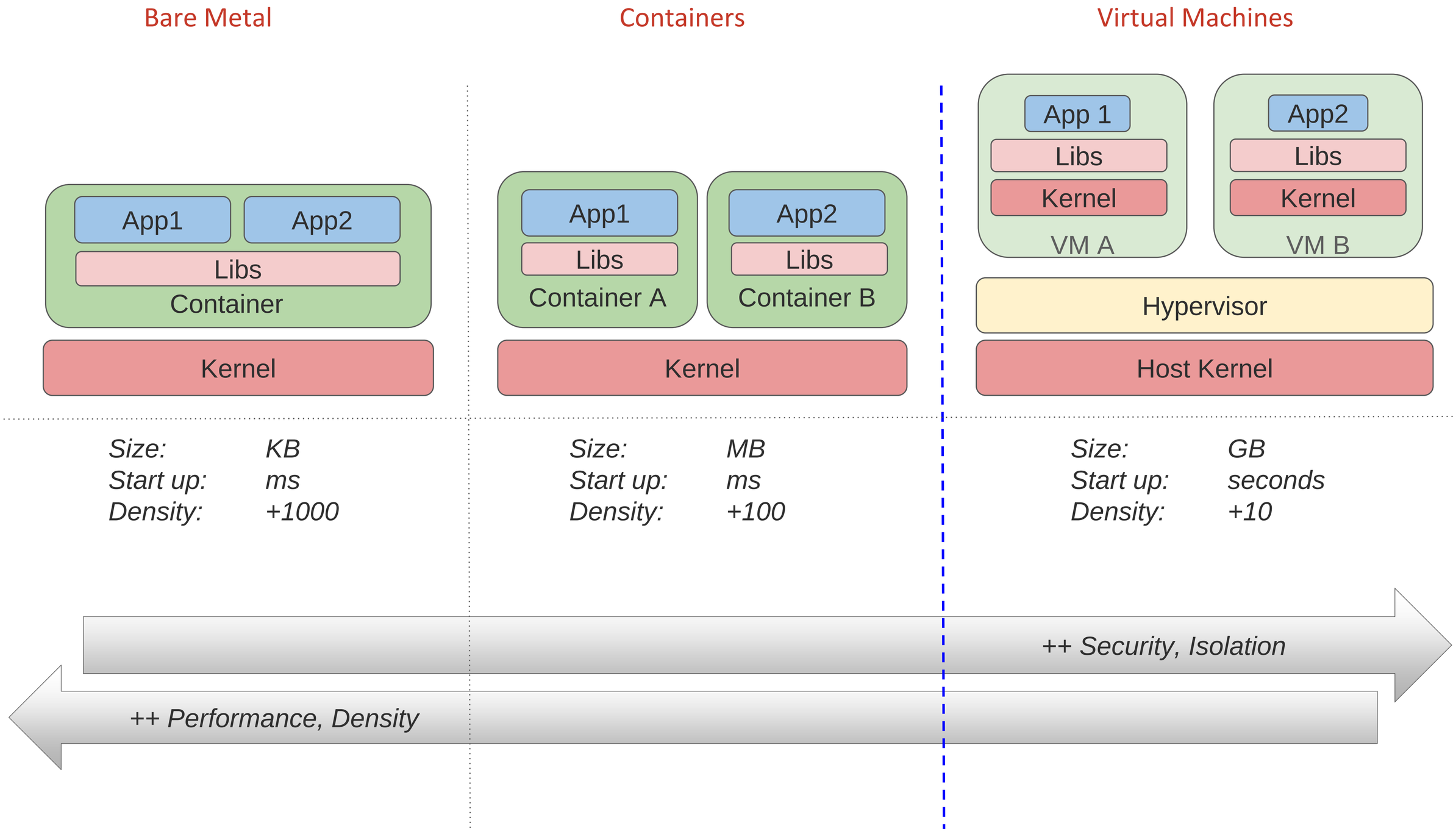
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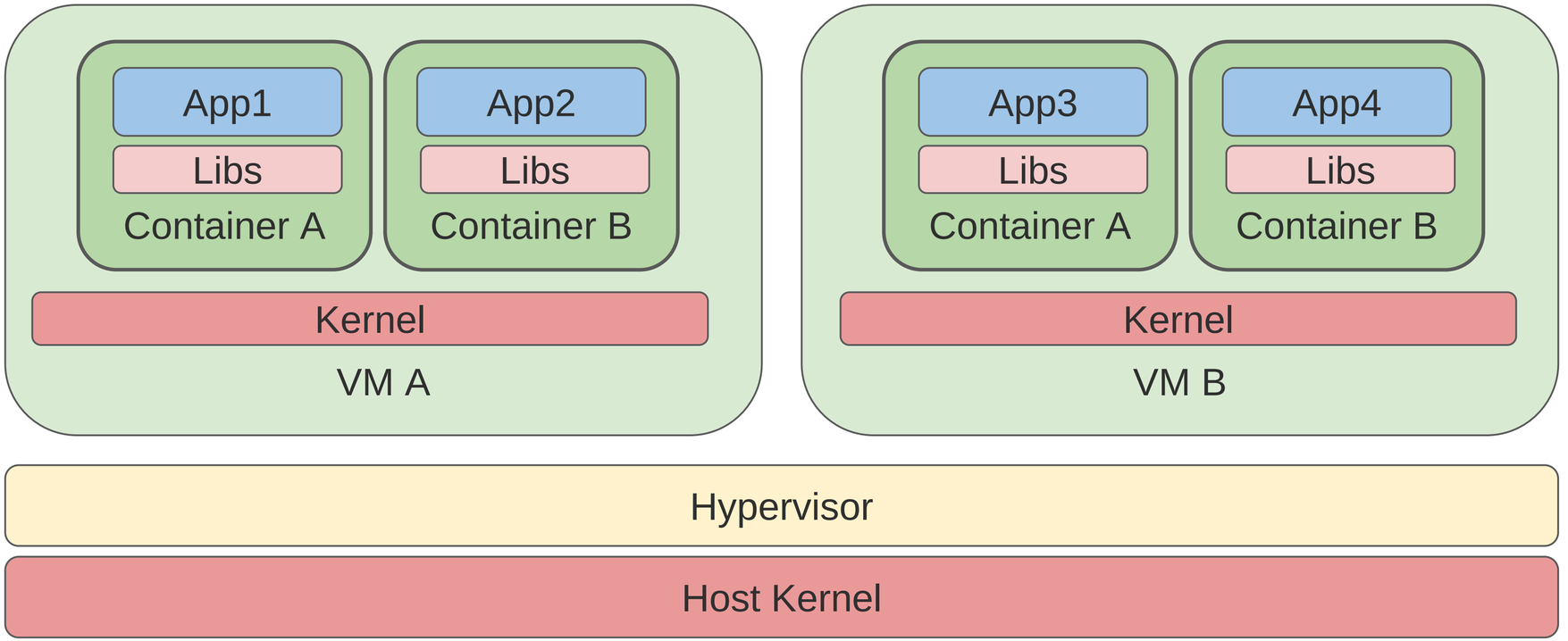
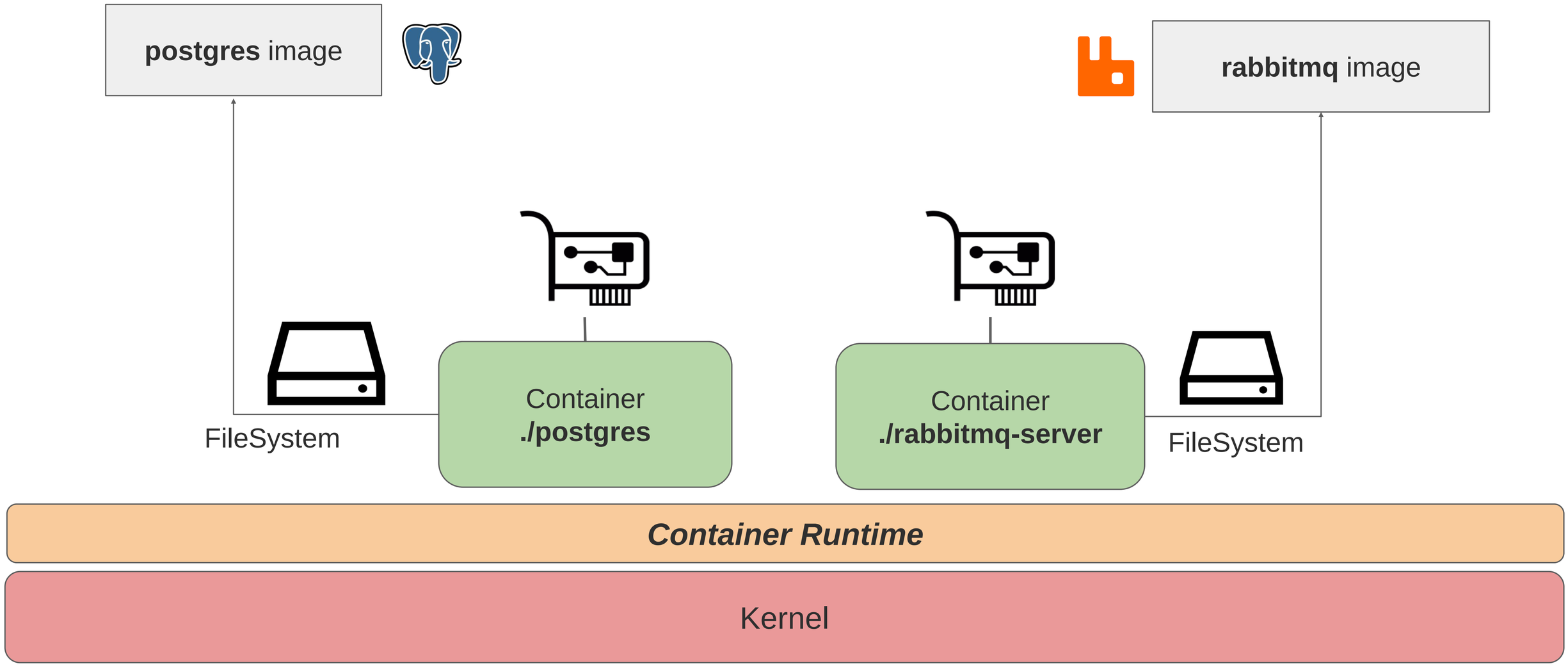
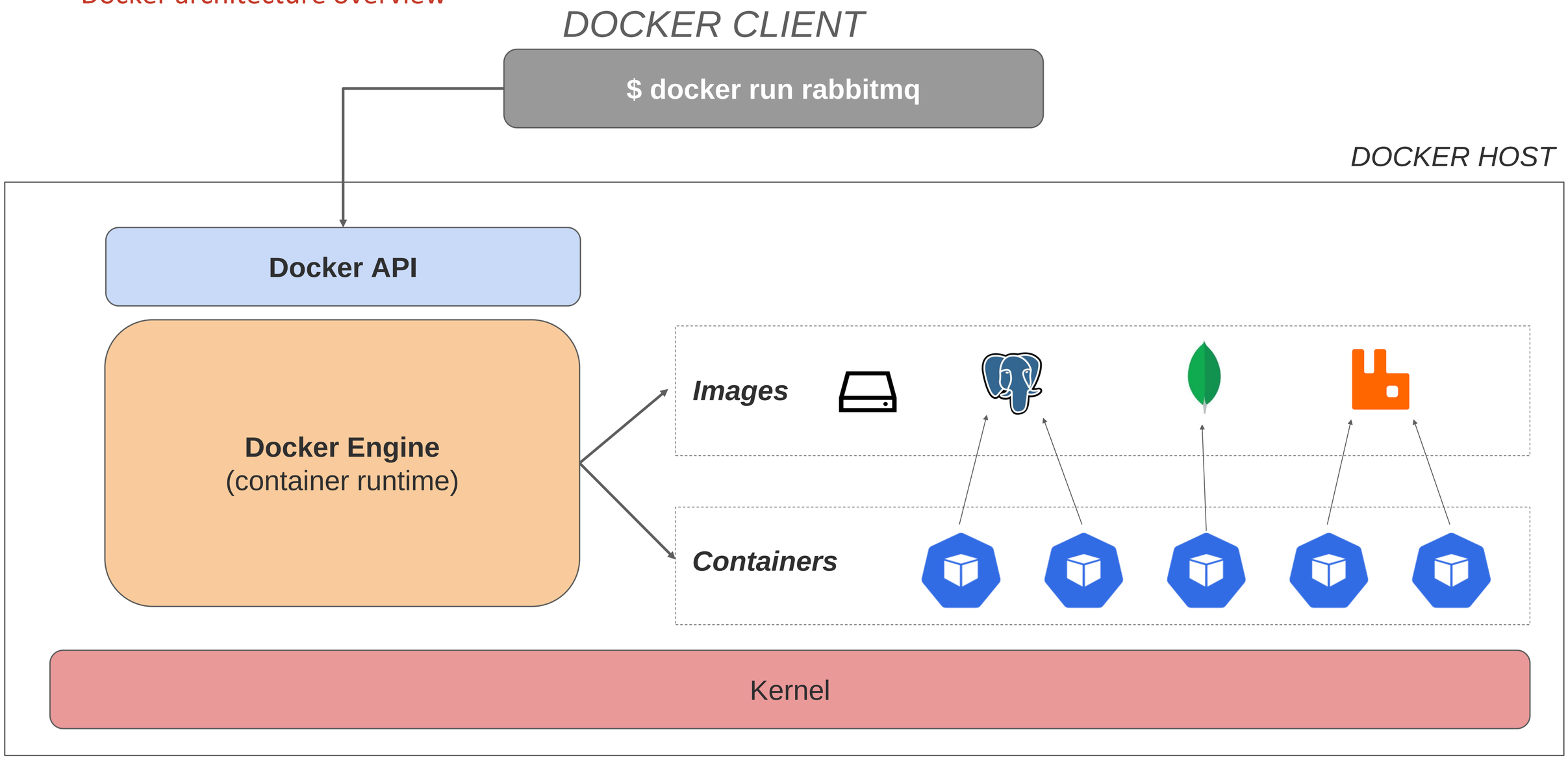
Virtual Machines with Containers



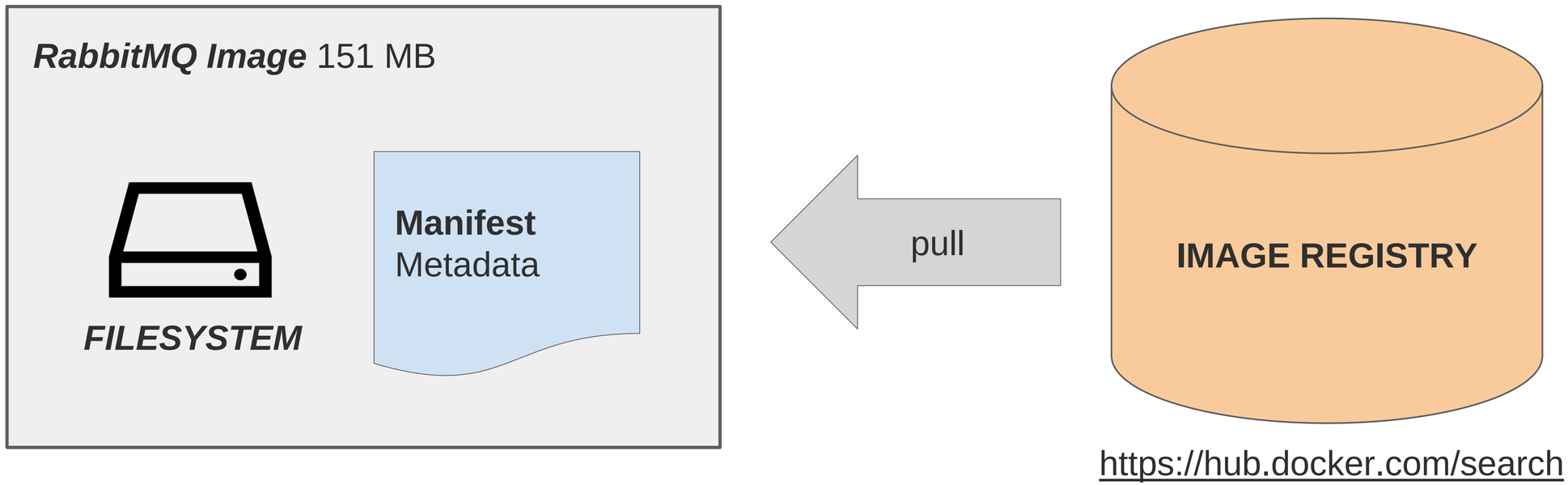
Containers and Images



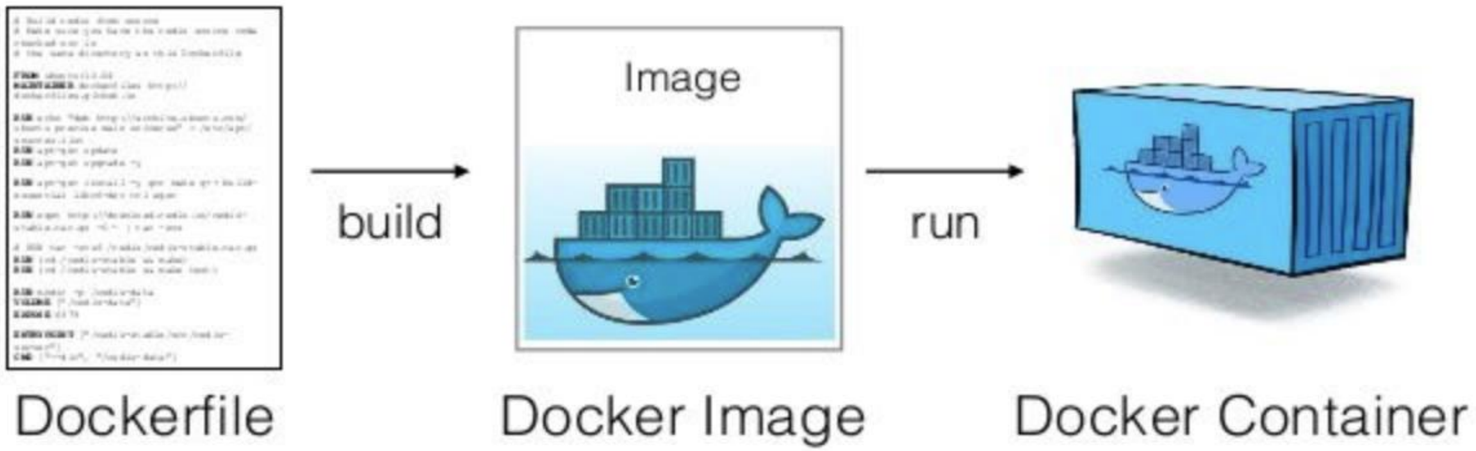
Docker architecture overview



What is a docker image?



Docker build with Dockerfile

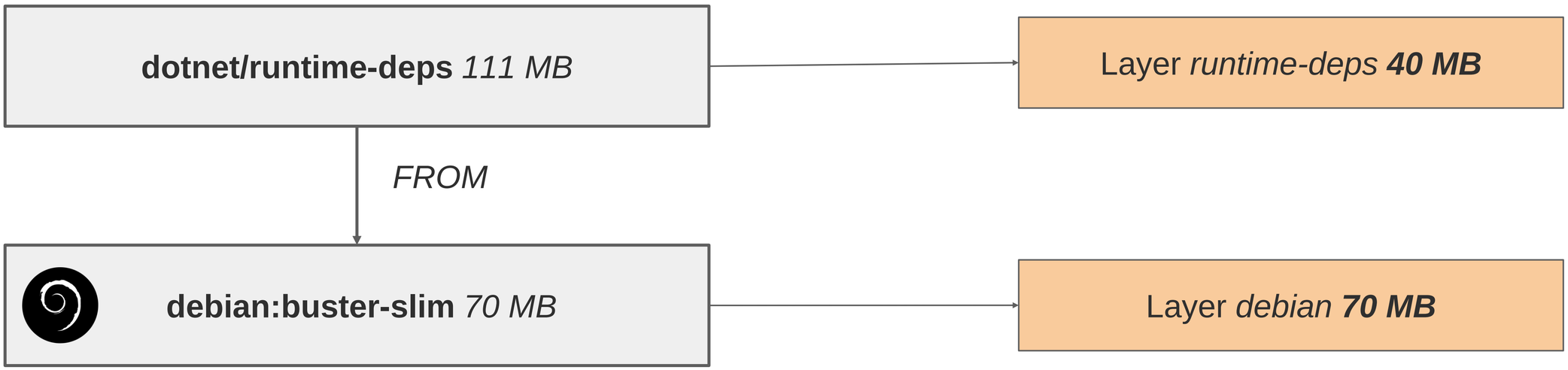


https://docs.docker.com/engine/reference/builder/
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/

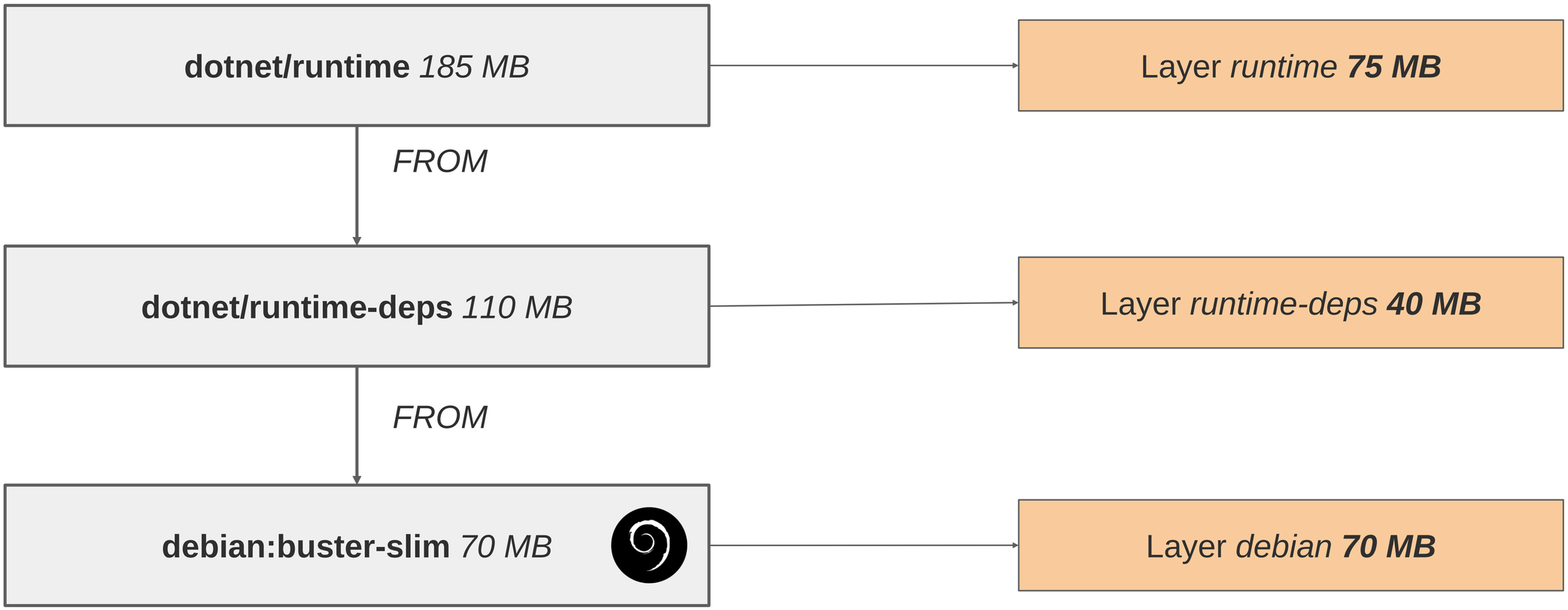
Dockerize your app

https://hub.docker.com/_/microsoft-dotnet/

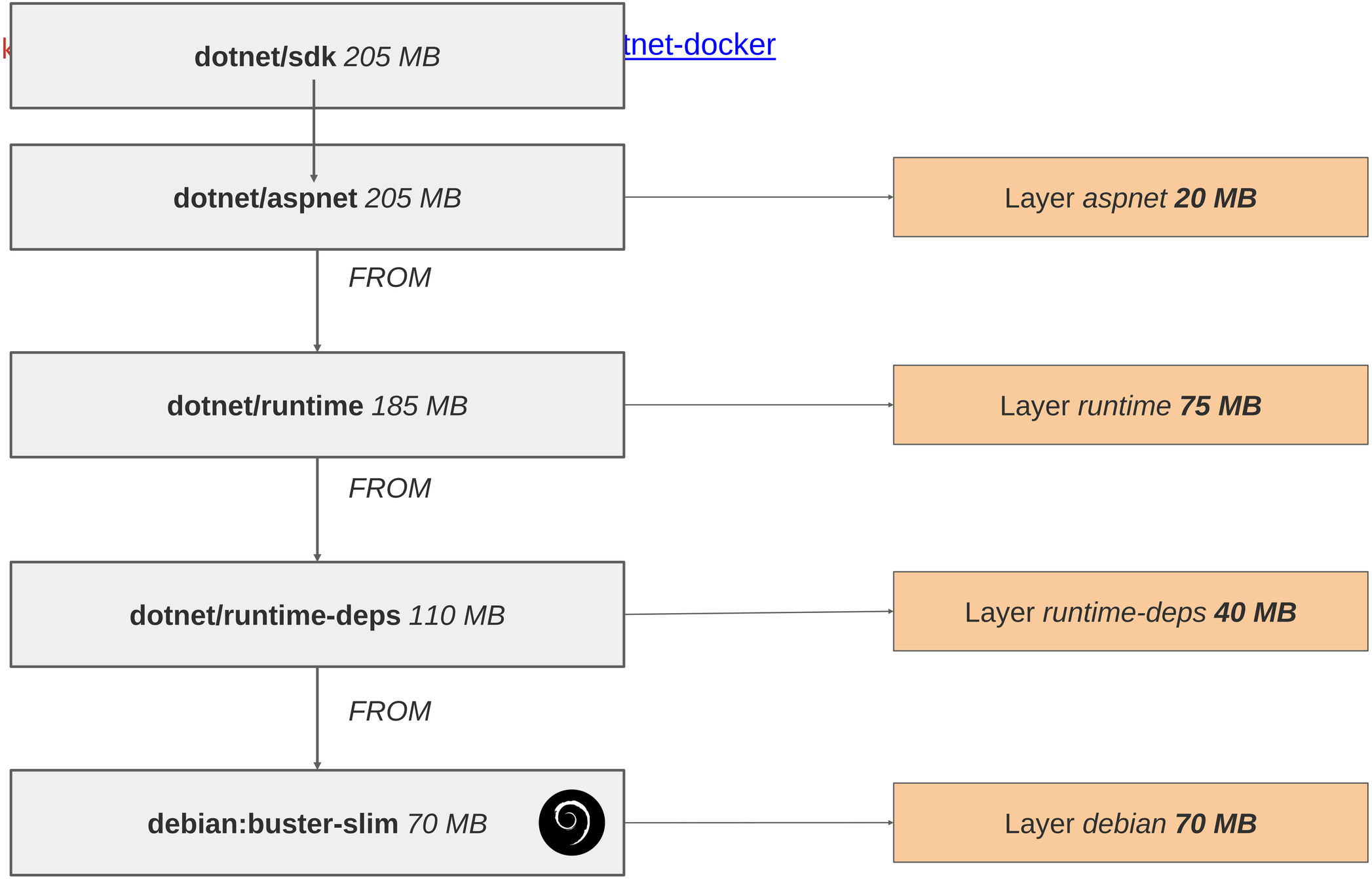
Dockerize your app https://github.com/dotnet/dotnet-docker



Dockerize your app https://github.com/dotnet/dotnet-docker



Dock tnet-docker



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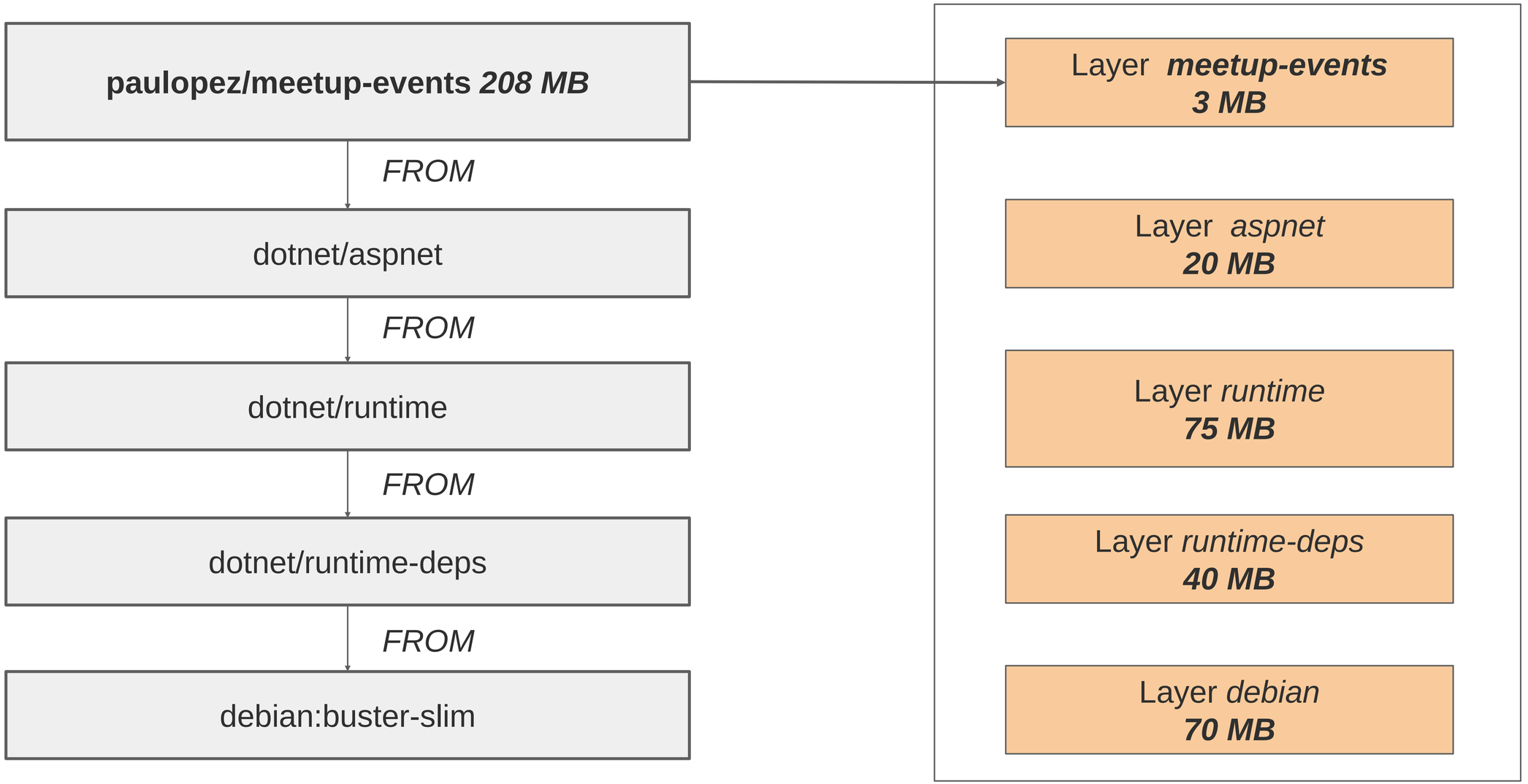
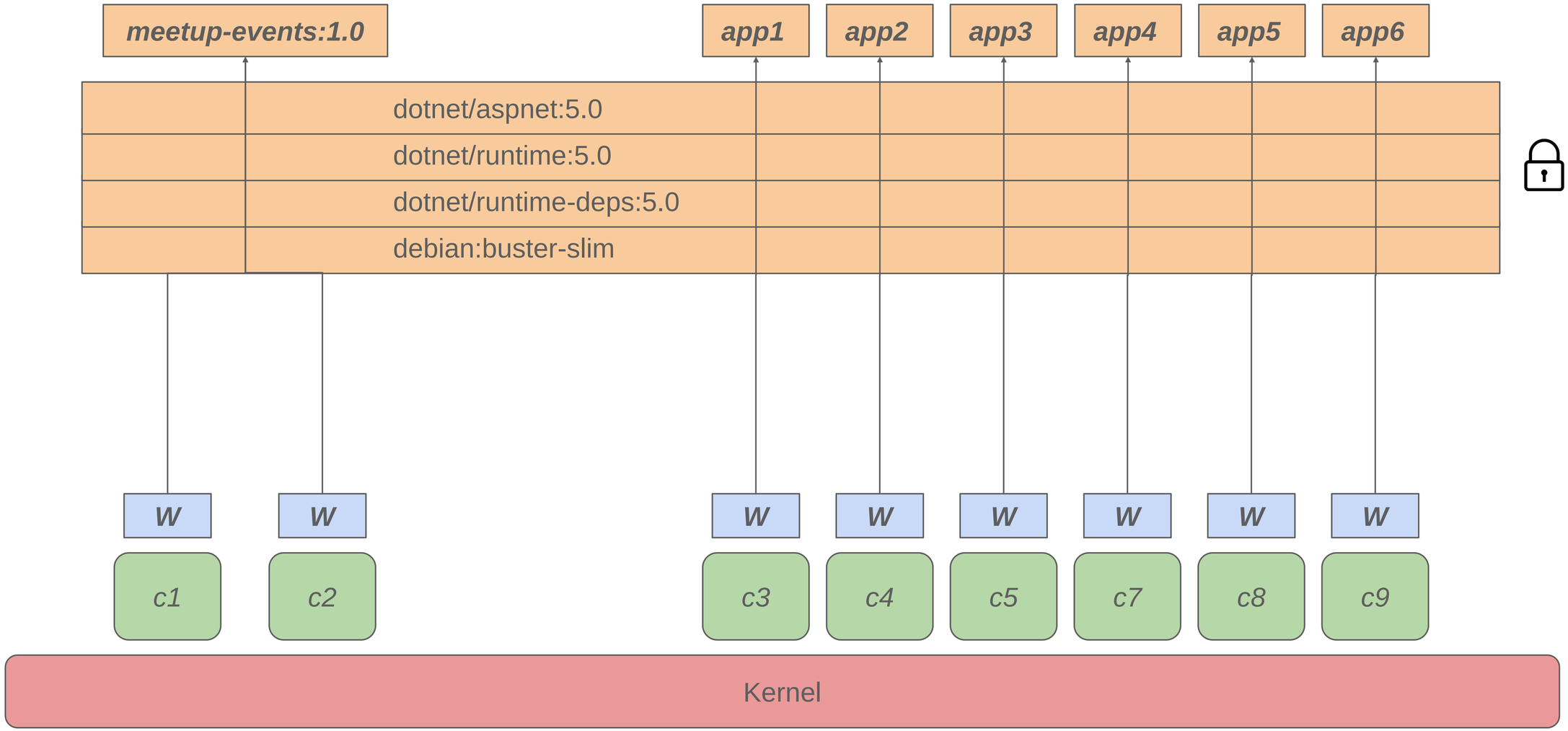
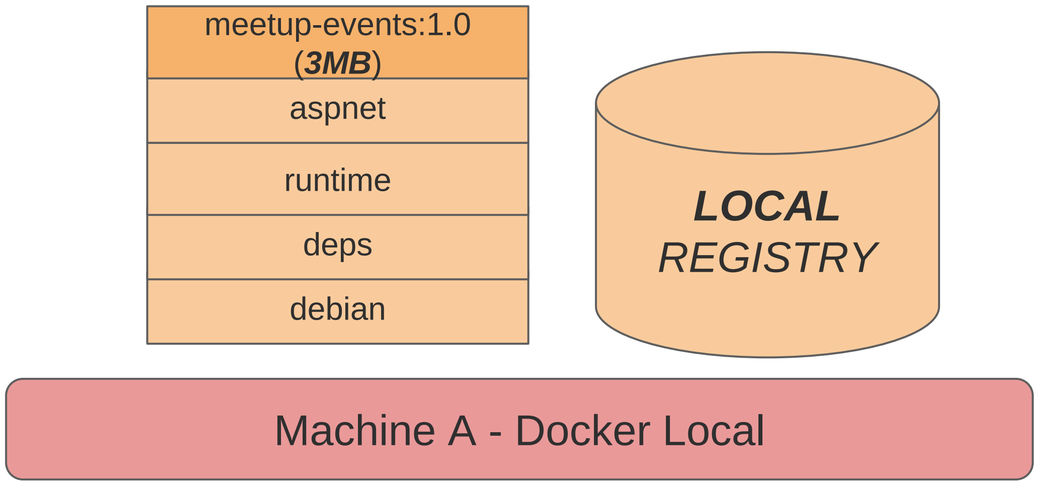


Reusing layers

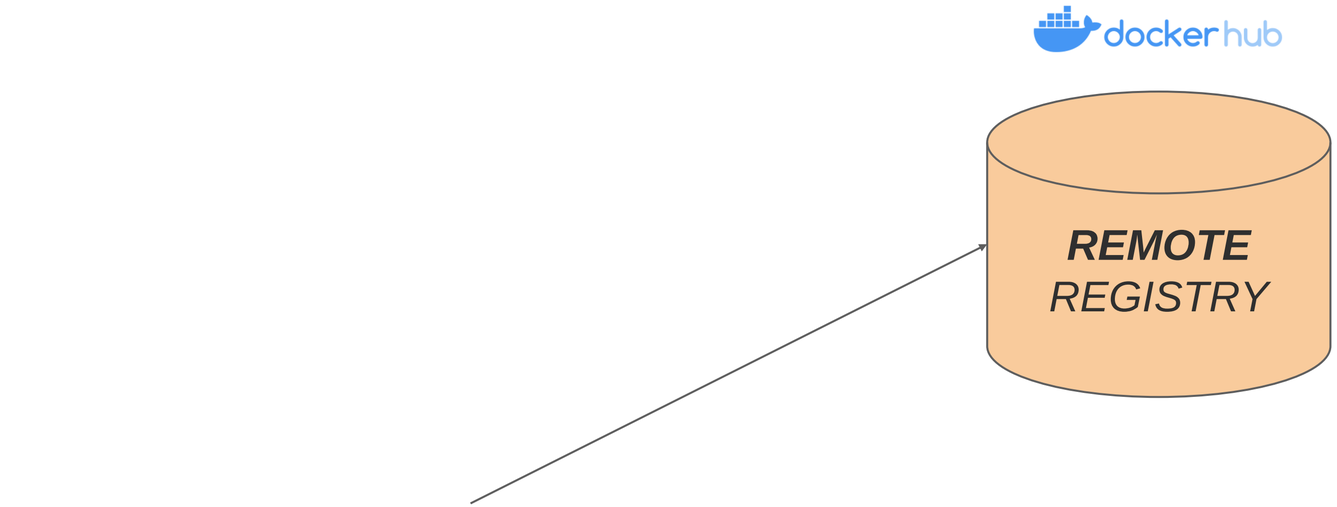


Docker images livecycle

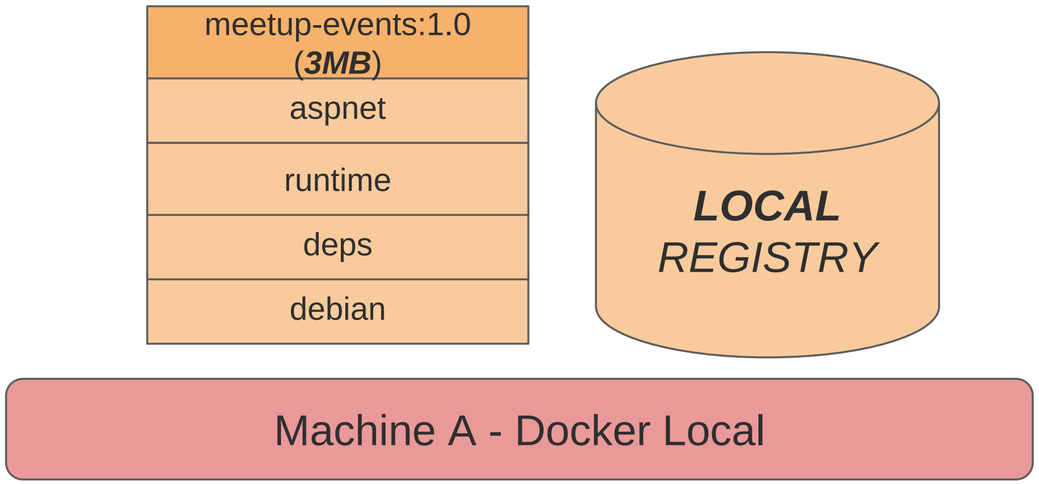
*$ docker **build** -t paulopez/meetup-events:1.0 ./*



Docker images livecycle



*$ docker **push** paulopez/meetup-events:1.0*



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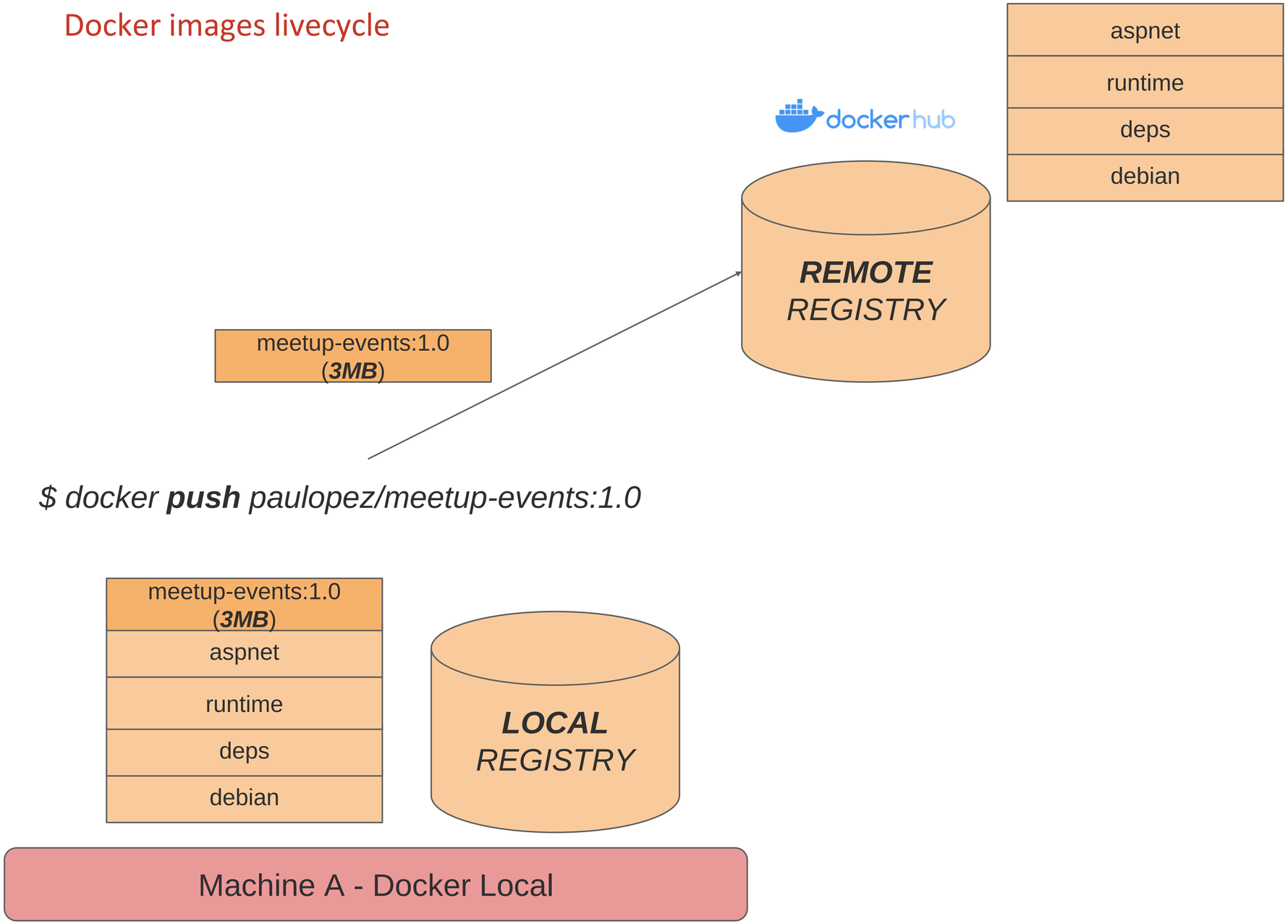
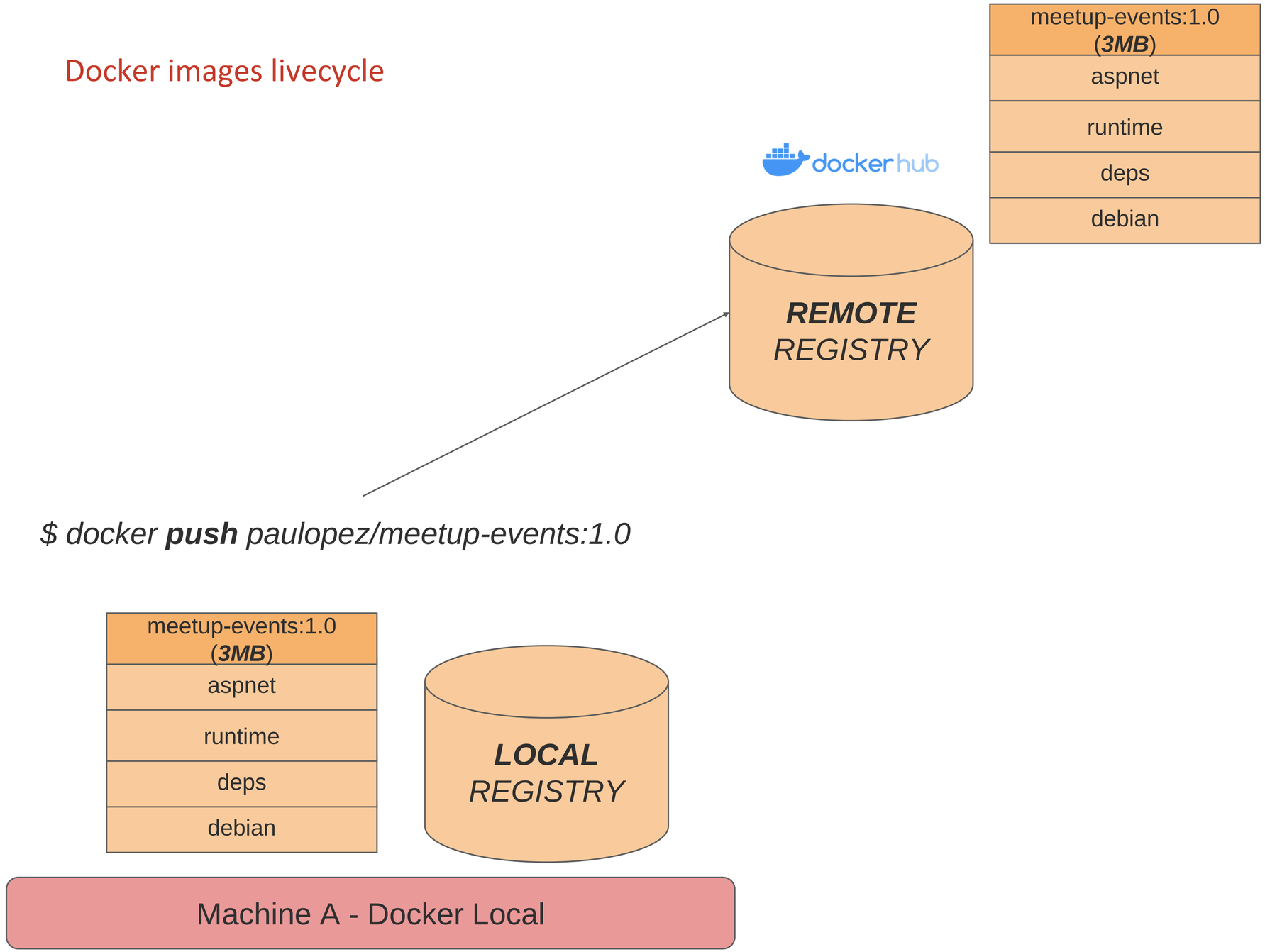


Docker images livecycle



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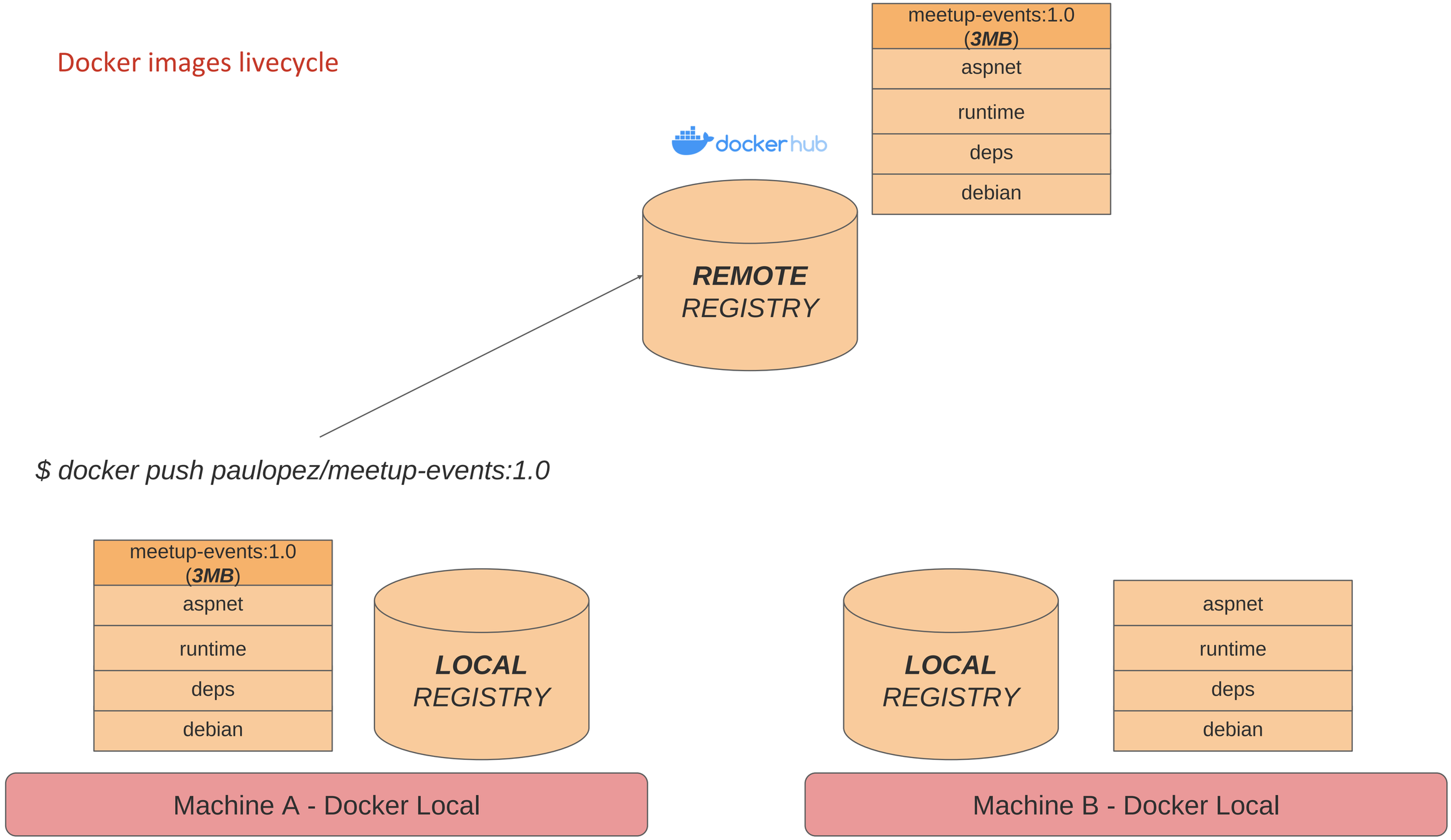

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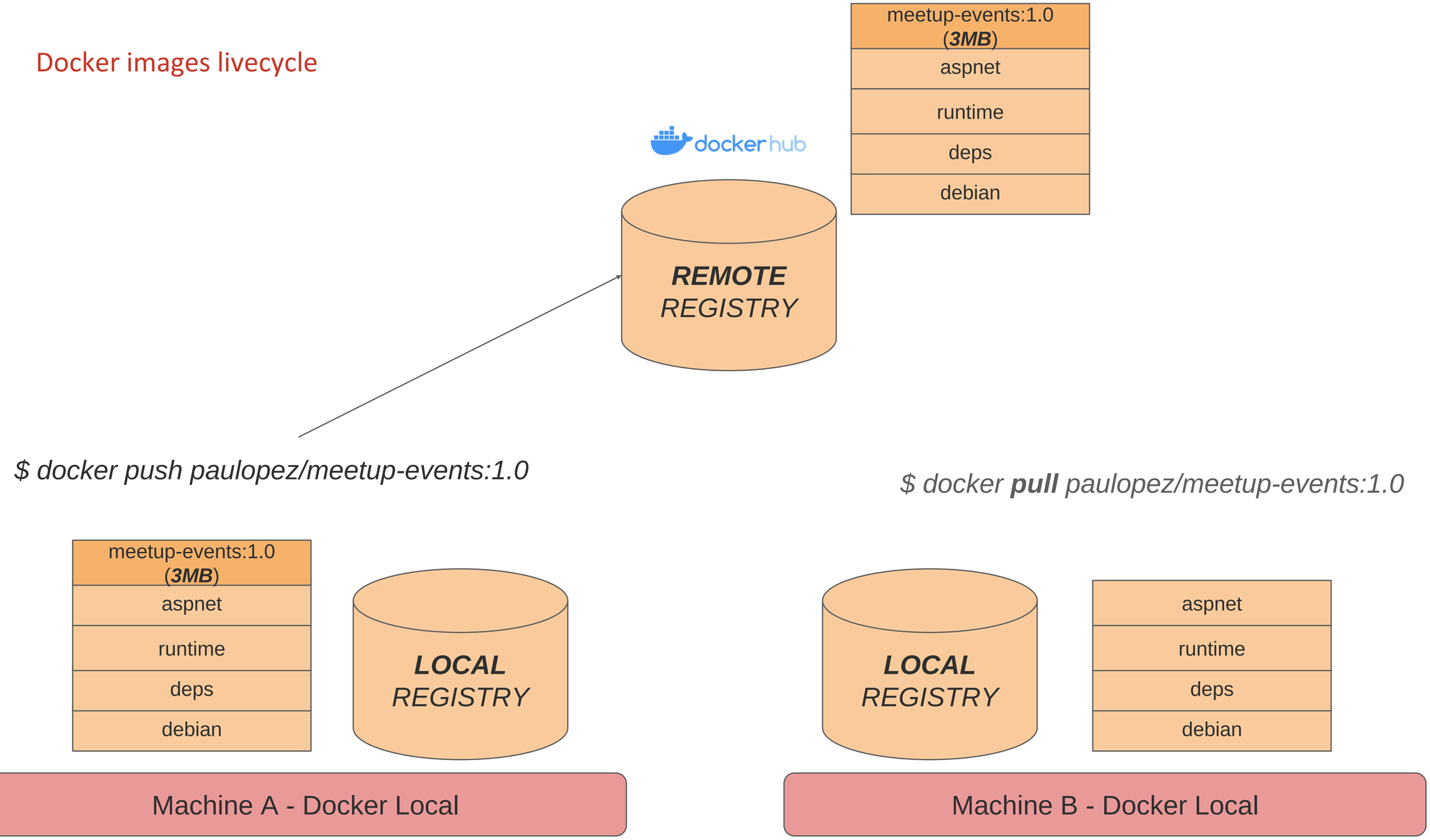

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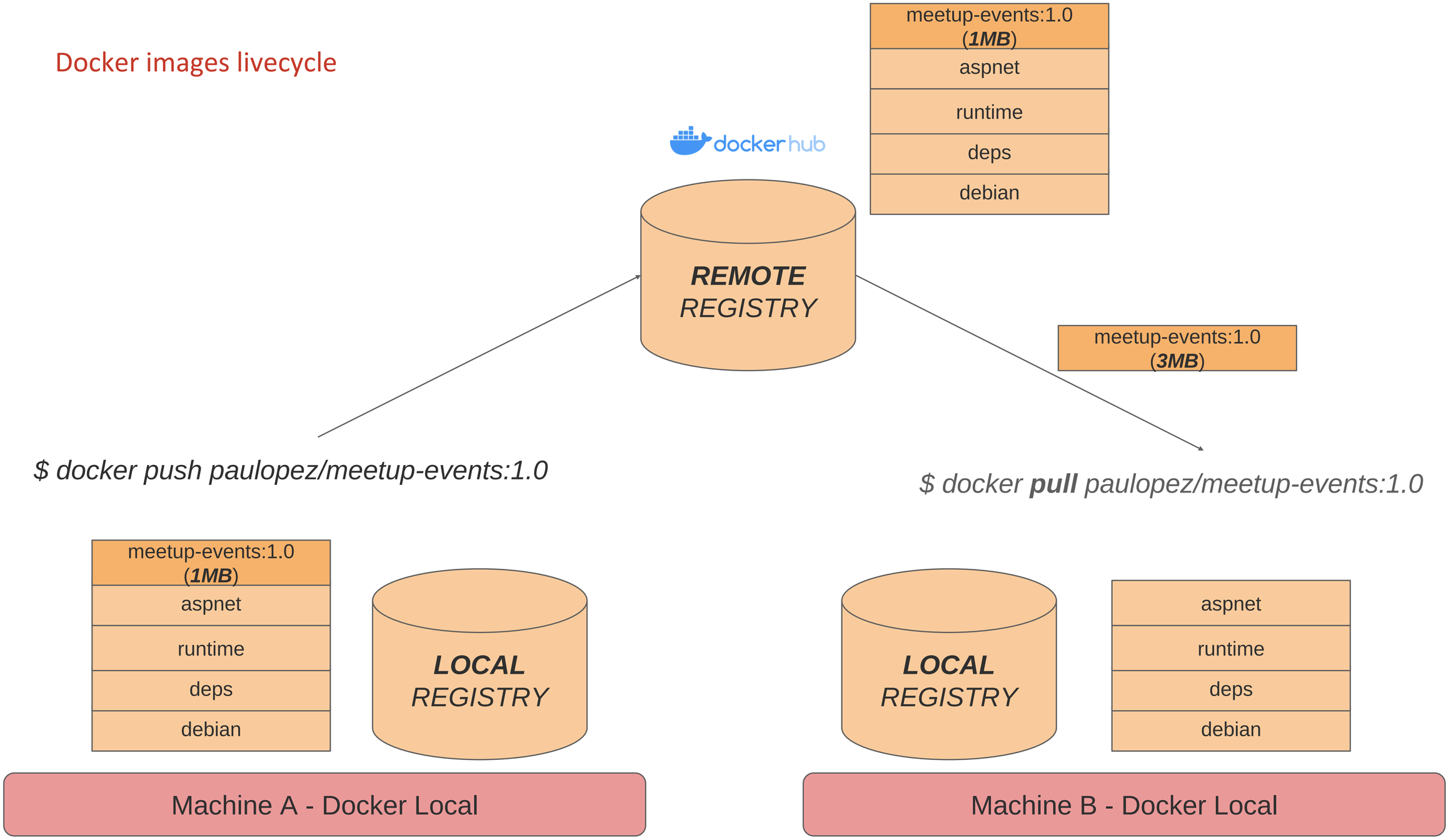

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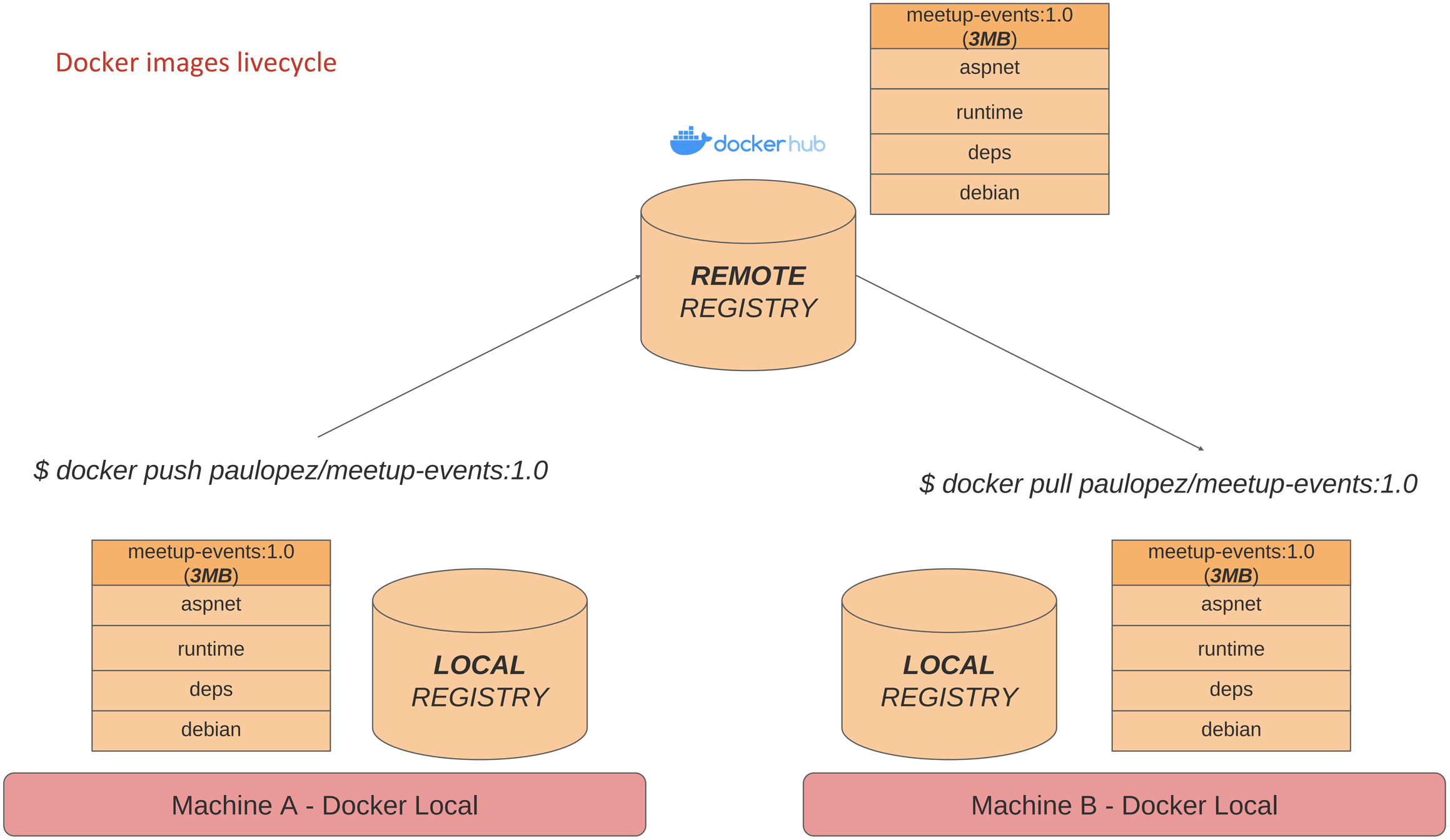
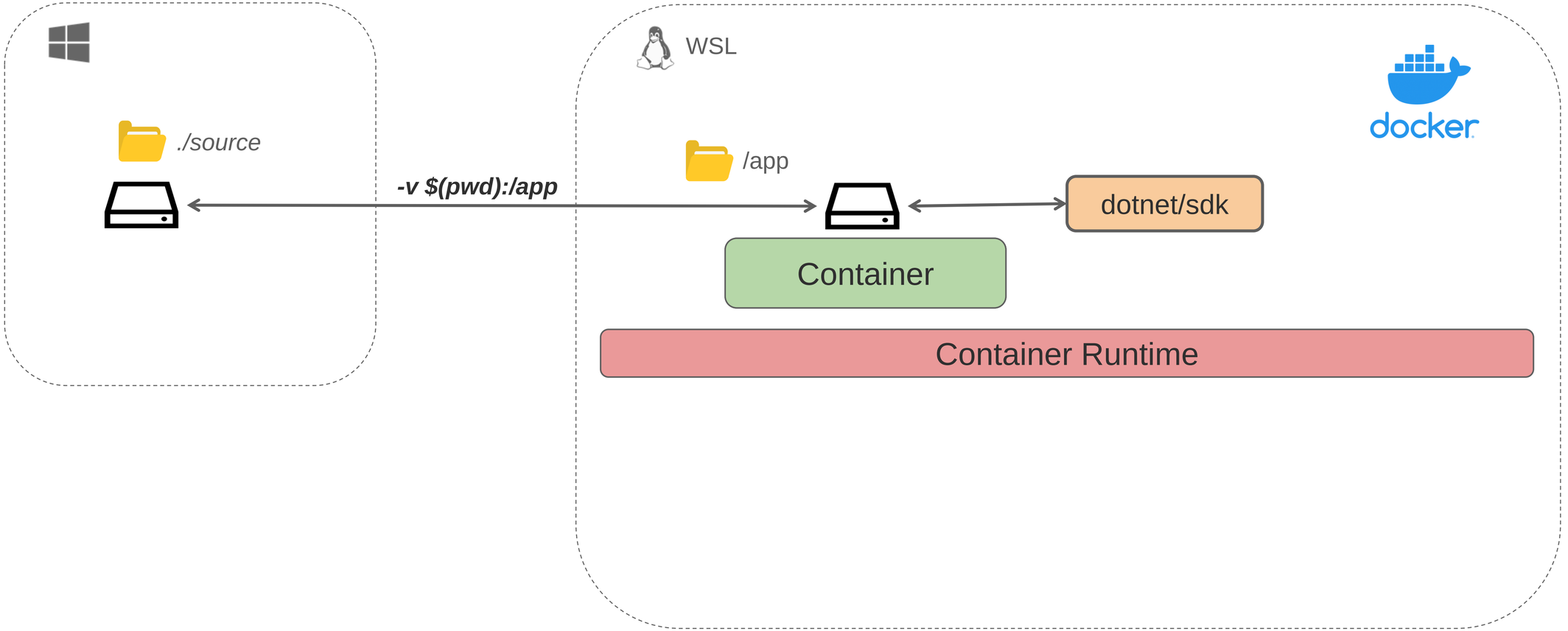


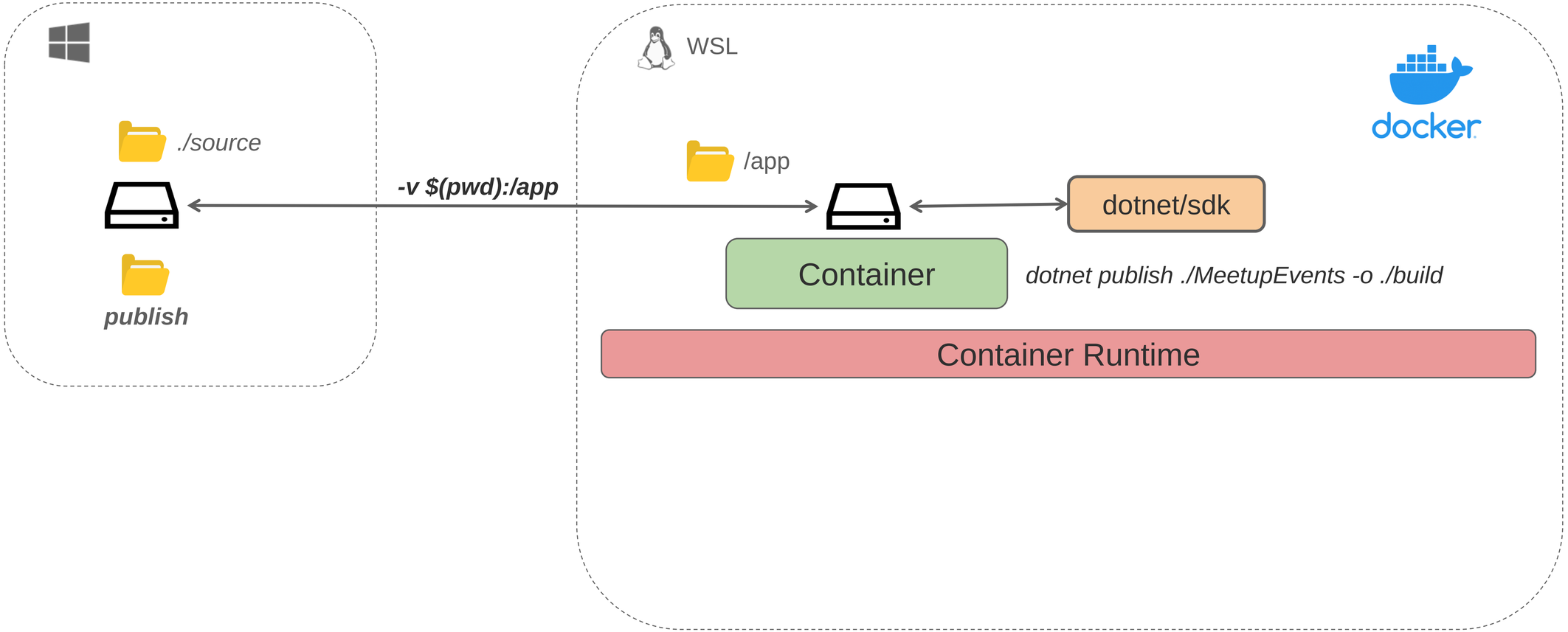
Multistage build with docker

*$ docker run -w /app **-v $(pwd):/app** mcr.microsoft.com/dotnet/sdk dotnet publish ./MeetupEvents -o ./build*



Multistage build with docker

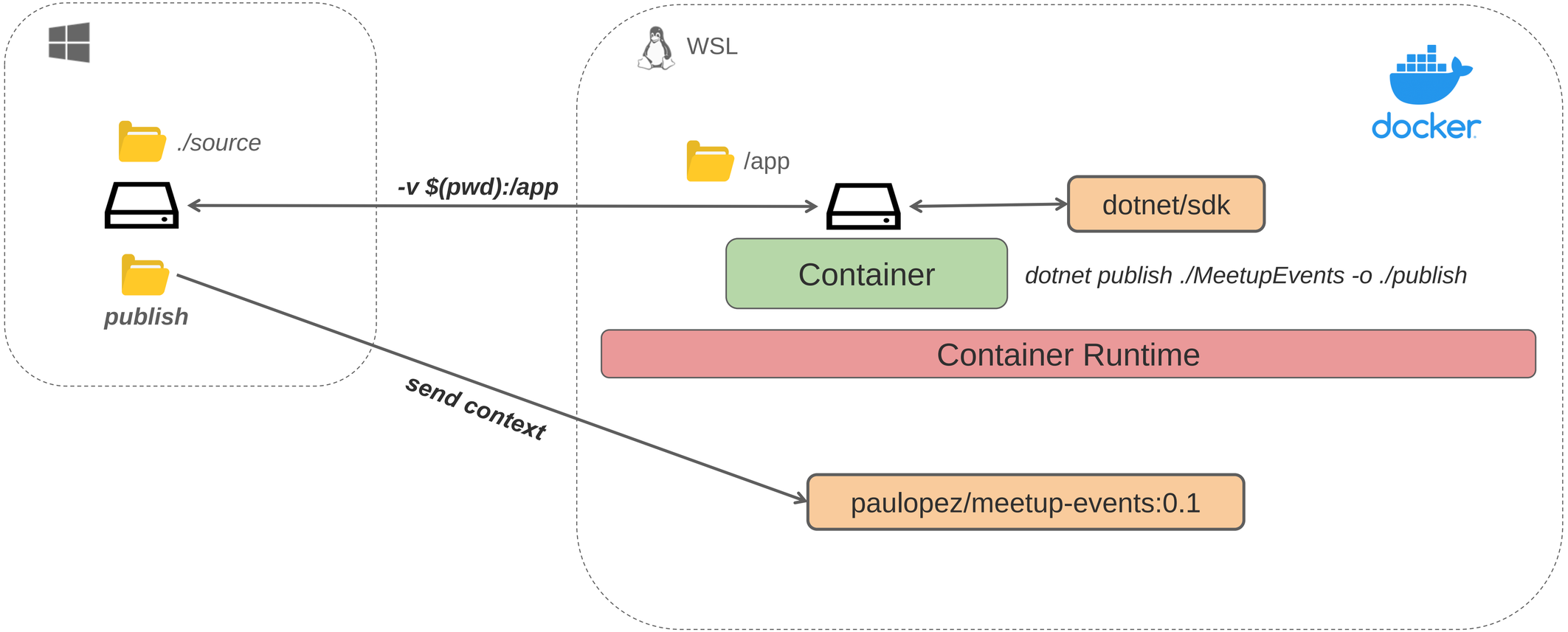
$ docker run -w /app ***-v $(pwd):/app*** *mcr.microsoft.com/dotnet/sdk* ***dotnet publish ./MeetupEvents -o ./build***



Multistage build with docker

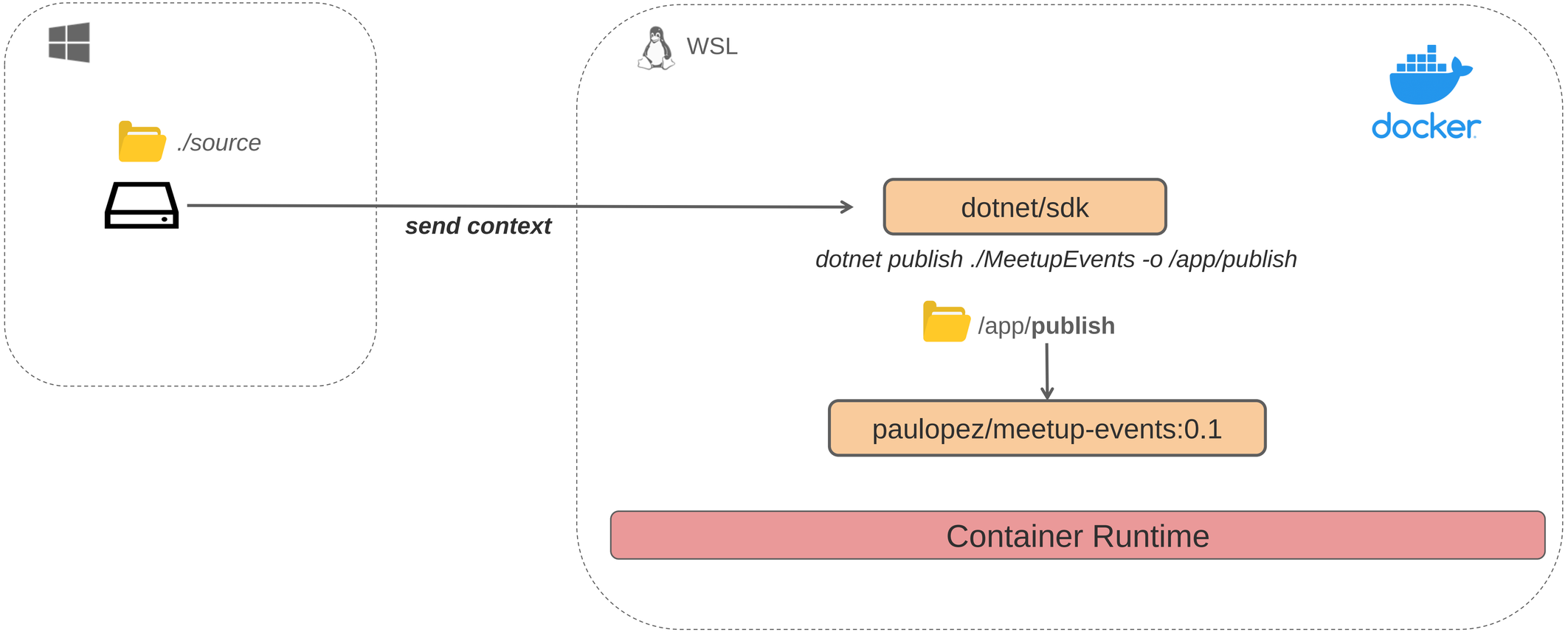
$ docker run -w /app ***-v $(pwd):/app*** *mcr.microsoft.com/dotnet/sdk* ***dotnet publish ./MeetupEvents -o ./publish***

$ docker build -f Dockerfile -t paulopez/meetup-events:0.1 ***./publish***



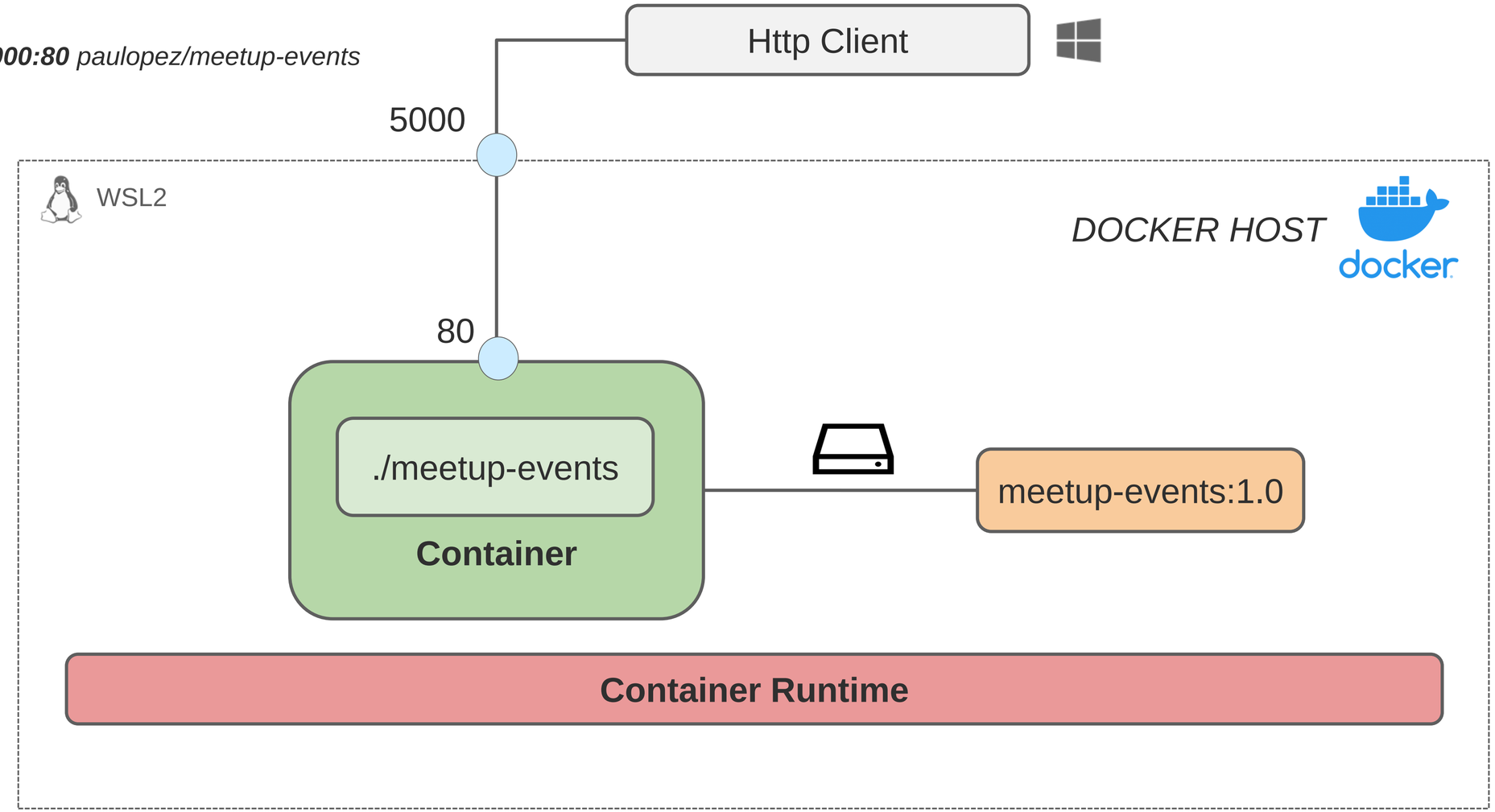
Multistage build with docker

$ docker build -f Dockerfile -t paulopez/meetup-events:0.1 ***./***

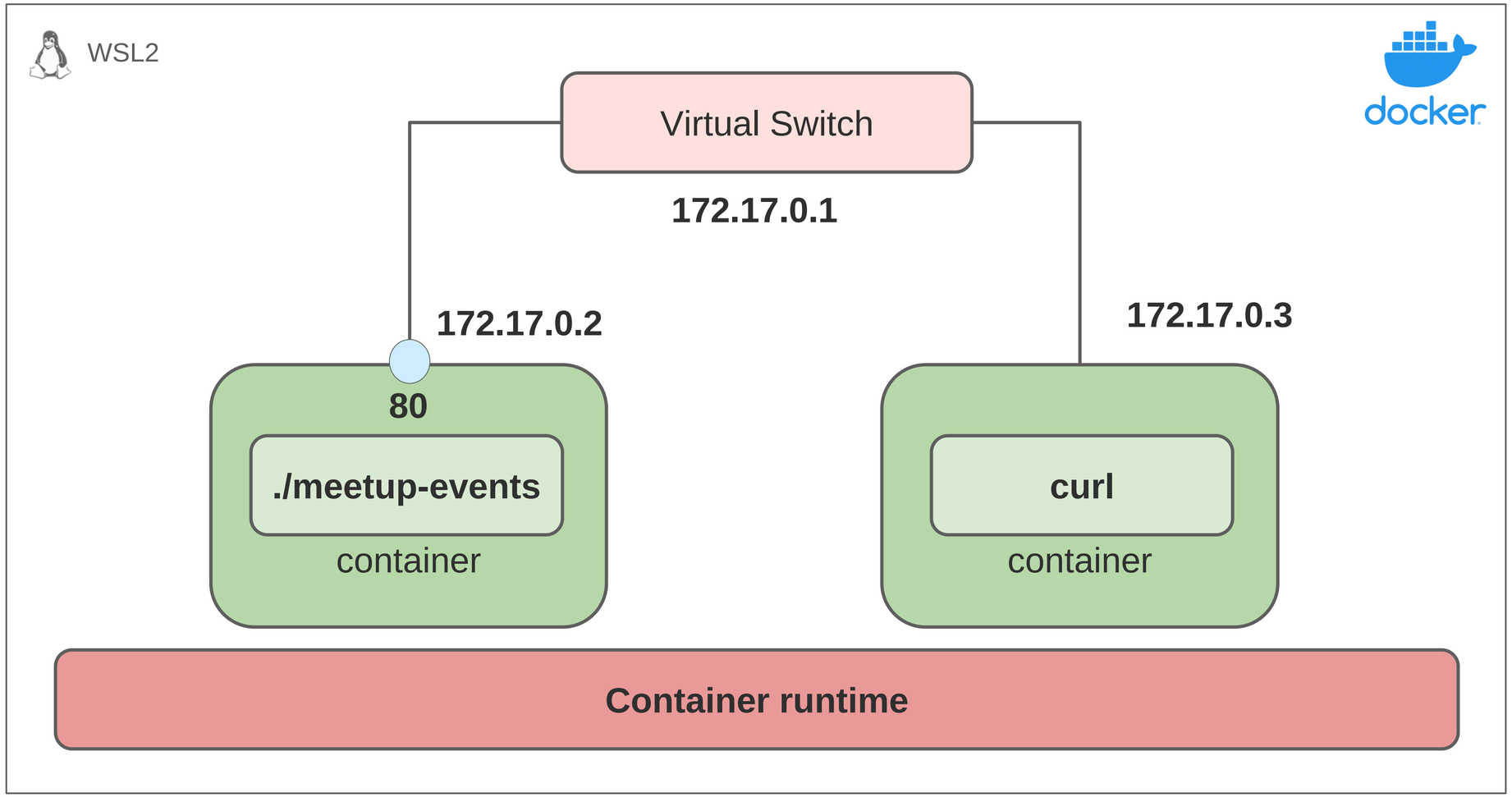


Docker networking

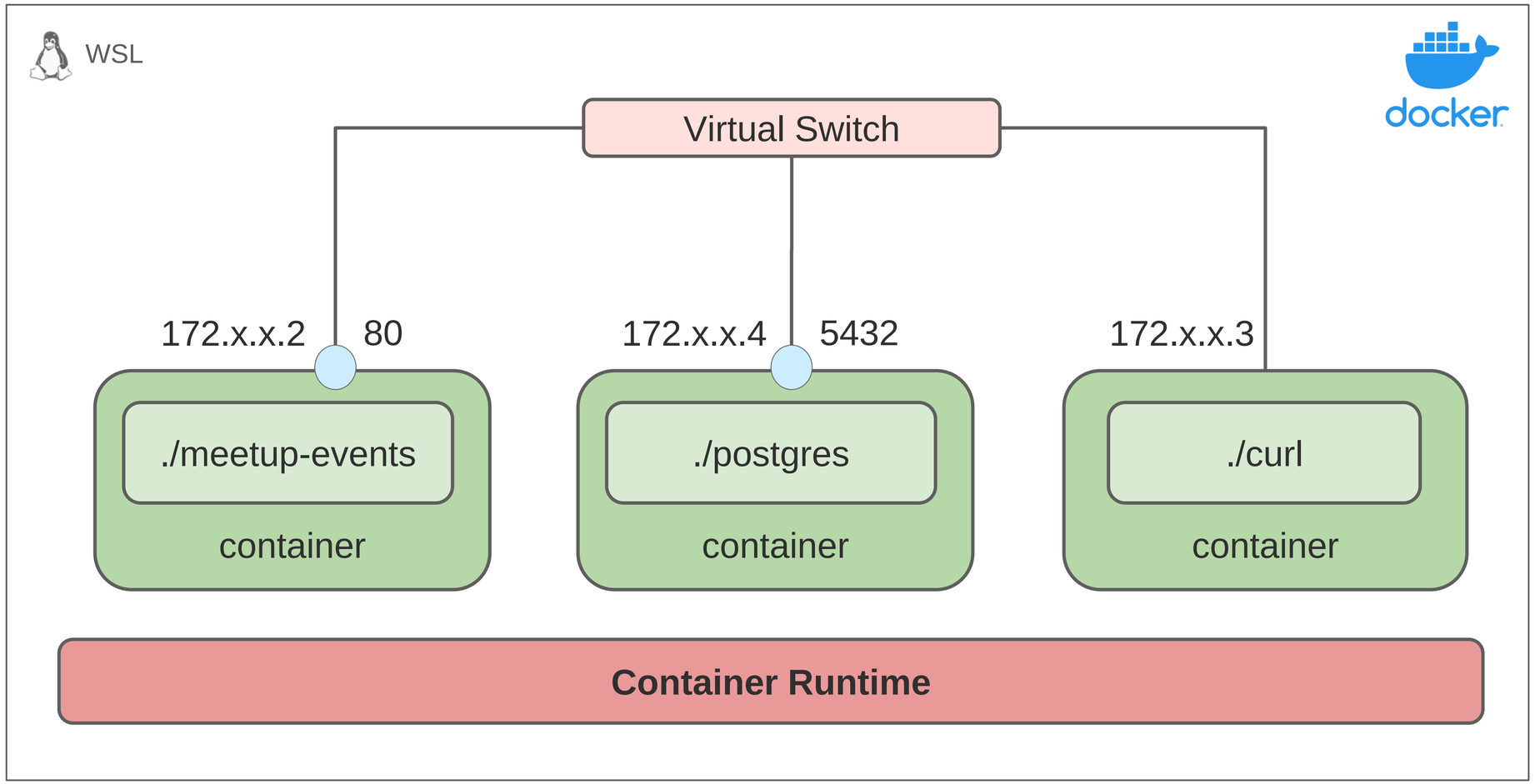
*$ docker run **-p 5000:80** paulopez/meetup-events*



Docker networking



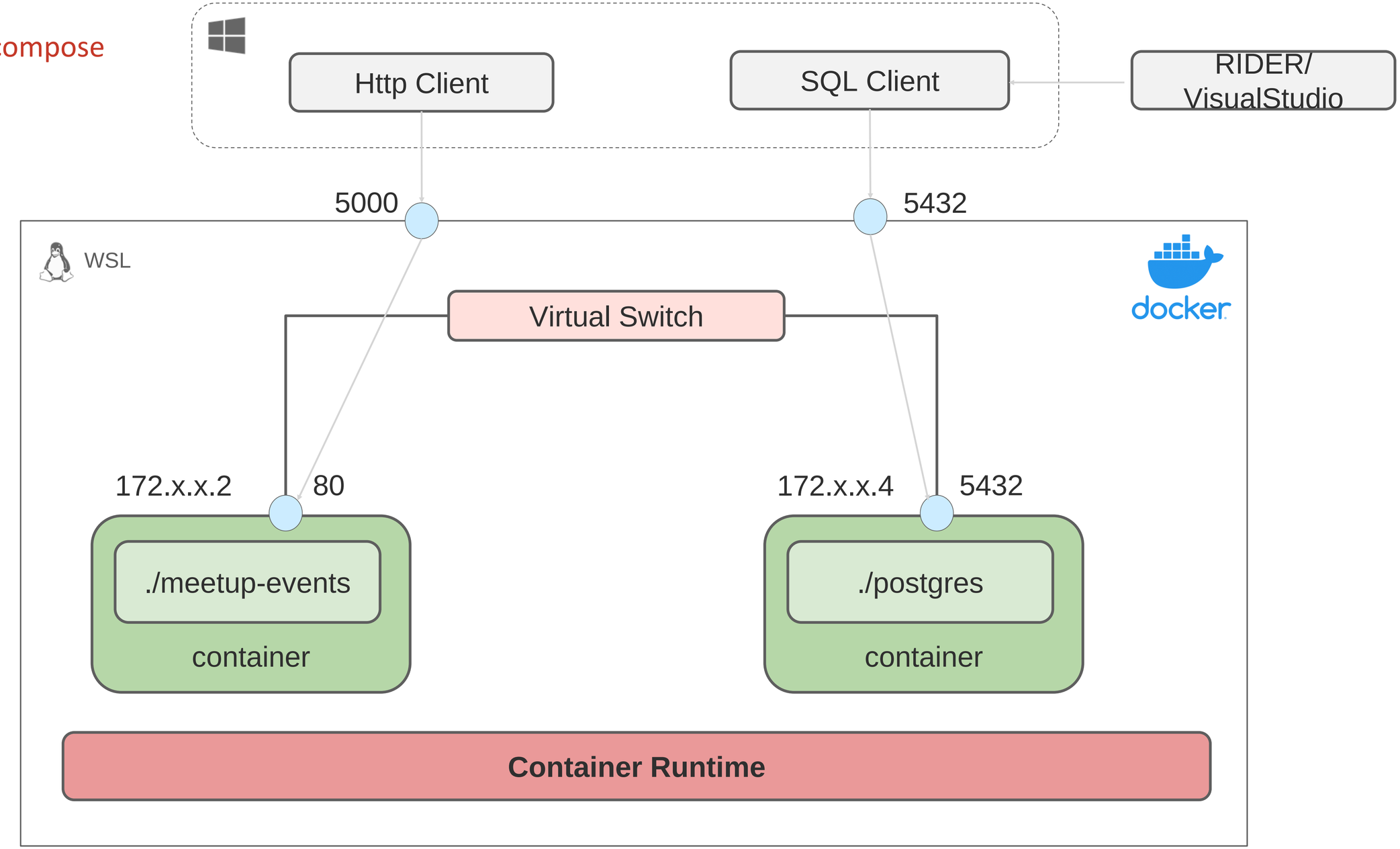
Docker compose



https://github.com/docker-library/postgres/blob/master/13/Dockerfile#L183

https://docs.docker.com/compose/overview/

Docker compose



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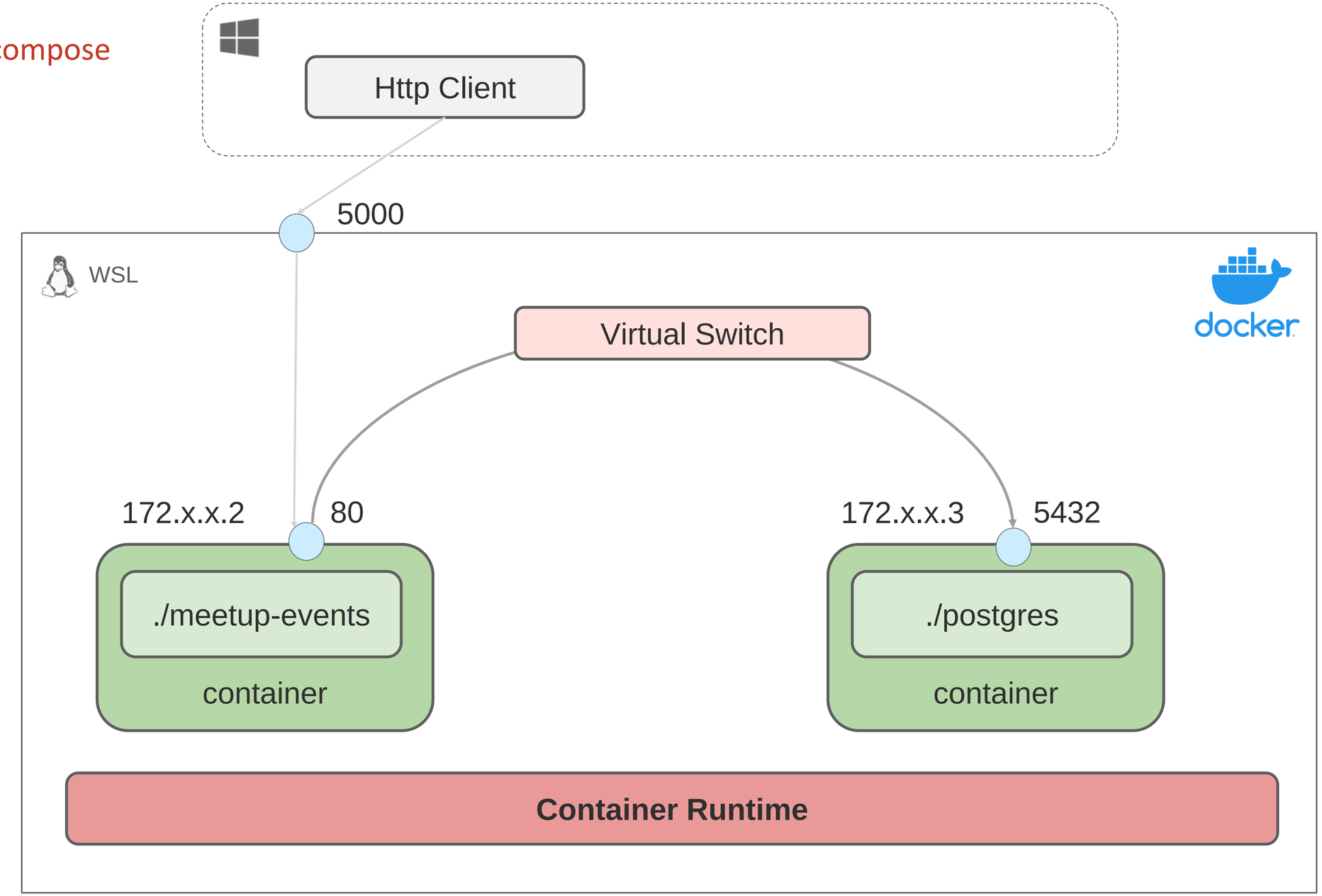

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