

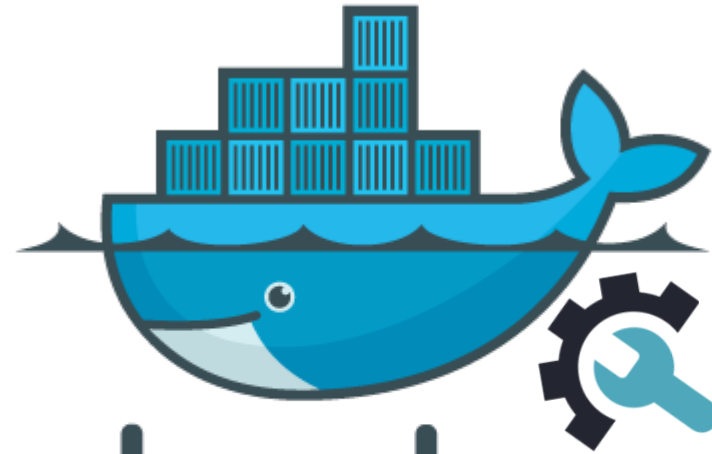
Docker Deep Dive

Course Introduction

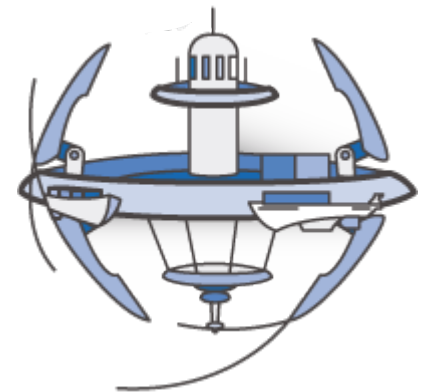


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docker



```
$ docker inspect web1
```

```
... ..
```

```
"NetworkSettings": {  
  "Bridge": "docker0",  
  "Gateway": "172.17.42.1",  
  "IPAddress": "172.17.0.31",  
  "IPPrefixLen": 16,  
  "MacAddress": "02:42:ac:11:00:1f",  
  "PortMapping": null,  
  "Ports": {  
    "80/tcp": [  
      {  
        "HostIp": "0.0.0.0",  
        "HostPort": "49166"  
      }  
    ]  
  }  
}
```

```
127 func CreateBridgeIface(ifaceName string) error {  
128     addrs := []string{  
129         // Here we don't follow the convention of using the 1st IP of the range for the gateway.  
130         // This is to use the same gateway IPs as the /24 ranges, which predate the /16 ranges.  
131         // In theory this shouldn't matter - in practice there's bound to be a few scripts relying  
132         // on the internal addressing or other stupid things like that.  
133         // The shouldn't, but hey, let's not break them unless we really have to.  
134         "172.17.42.1/16", // Don't use 172.16.0.0/16, it conflicts with EC2 DNS 172.16.0.23  
135         "10.0.42.1/16",   // Don't even try using the entire /8, that's too intrusive  
136         "10.1.42.1/16",  
137         "10.42.42.1/16",  
138         "172.16.42.1/24",  
139         "172.16.43.1/24",  
140         "172.16.44.1/24",  
141         "10.0.42.1/24",  
142         "10.0.43.1/24",  
143         "192.168.42.1/24",  
144         "192.168.43.1/24",  
145         "192.168.44.1/24",  
146     }  
}
```

```
$ docker port web1
```

```
80/tcp -> 0.0.0.0:5001
```

```
$ docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
5ecf560f391e	img:latest	"apache2ctl -D FOREG	6 hrs ago	Up 6 hrs	0.0.0.0:5001->80/tcp	web
1c8b2b26e9fa	ubuntu:15.04	"/bin/bash"	8 hrs ago	Up 8 hrs		rcvr
a073d44bf842	img:latest	"apache2ctl -D FOREG	8 hrs ago	Up 8 hrs	80/tcp	src

What We'll Learn



Linux Containers

- Containers vs Virtual Machines << **FIGHT!!**
- Kernel namespaces, cgroups, Capabilities...

Docker Engine

- Execution Driver: libcontainer vs LXC
- AUFS, OverlayFS, Device Mapper...

Docker Images

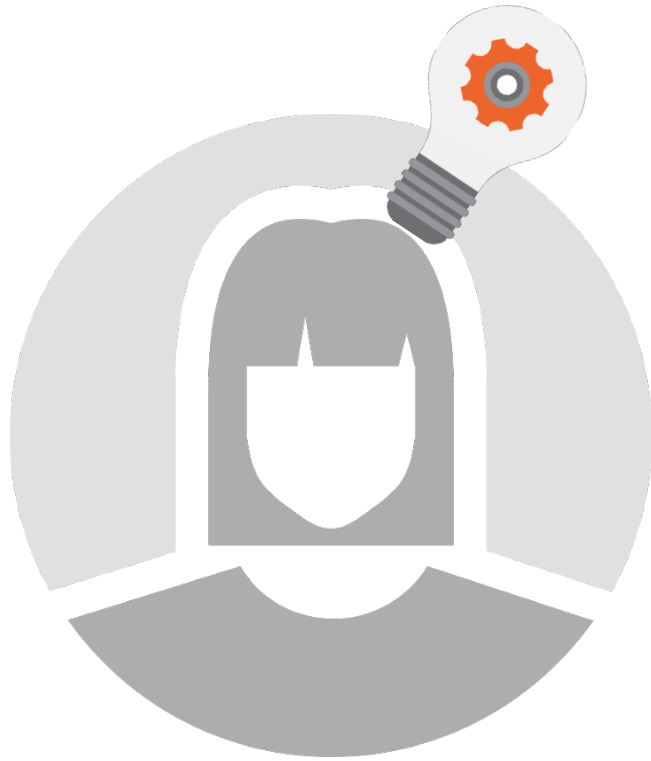
- `docker build` | `docker images` | `docker inspect`...
- Union mounts, Layering, Dockerfile

Docker Containers

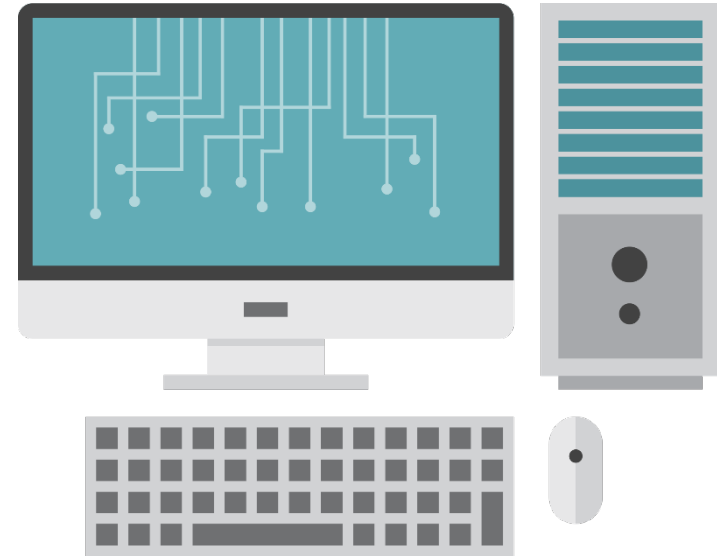
- `docker start|stop|restart`

Registries, Volumes, Networking....

Prerequisites



- Basic computer knowledge
- Do **not** need to be a Linux expert!



- 1 – 2 Linux machines (can be VMs)



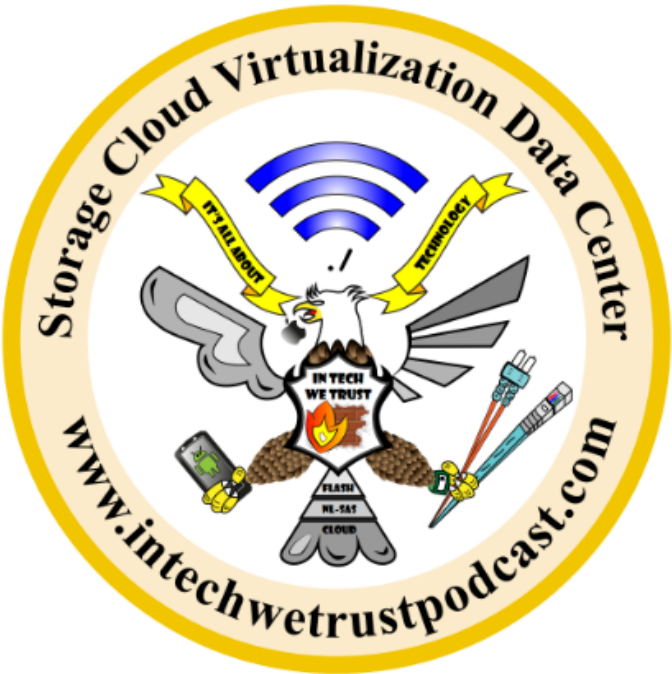
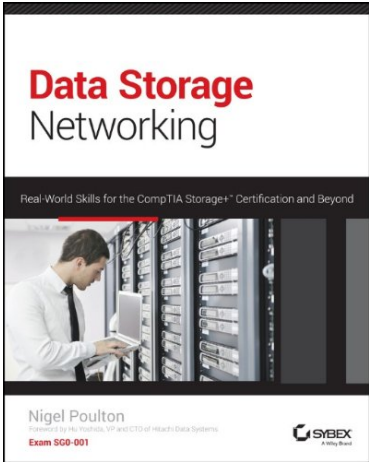
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Technology Evangelist. Host of
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