what is the problem to be solved

CEO view:
How can the highest levels of CPU, Memory and Storage capacity be consumed to provide efficient usage of compute resources? A goal is to manage electric power consumption and cooling without waste that occurs with (semi) idle computers.
Where is Technology today

IT management team view:

Is there an alternative approach to applications running on virtualized servers on hyper-visor platforms (Microsoft Hyper-V, VMWare, Citrix Xen)?
Docker is the option

Docker Up & Running

Shipping Reliable Containers in Production  by

Karl Matthias & Sean P Kane

When was this book published?

June 2015 first edition
Docker Up&Running 1

Navigating this book page XVI/bm18
Birth of Docker page 1 bm23

The WEB youtube site is your friend:
https://www.youtube.com/watch?v=at72dhg-SZY
Ben Golub and Solomon Hykes
https://www.youtube.com/watch?v=_DOXBVrlW78
Docker UP&Running 2

Benefits of Docker Workflow page 4/bm23
What Docker isn't page 5/bm27

Docker is not an Enterprise Virtual Platform
What is Docker

Docker is container technology that makes it possible to get far more apps running on same ( old ) servers and it makes it easy to package and ship programs. (Steven Vaughn-Nichols for Linux and Open Source )

Docker UP&Running 4

Docker enables running multiple applications (henceforth apps) on the same OS/Processor and maintain separation (aka multi-tenancy).

Docker has notable less system resource overhead compared to a Hyper Visor running Vms. That allows for several more apps to run on a server (than when using a hypervisor).
Docker UP&Running 6

Workload Management Tool  page 6/bm28
Has Broad Support and Adoption  page 10
Network Ports and UNIX Sockets  page 11
Robust Tooling CLI  page 12
Container Networking  page 13
Getting the Most from Docker  page 14
Containers are not Virtual Machines  page 15
Packaging - Container Metaphor
Important Terminology page 25/ bm47
Install on Ubuntu page 27/bm 49

Test the Setup page 38

Proceed to a terminal window and look at a few CLIs
What are Containers  page 59/bm 81 ( this is chapter 5 )
what is a container

Origins for containers include Free-BSD Jails, Solaris Zones, and more currently LXC ( Linux Containers )

consider looking at man page for chroot
https://en.wikipedia.org/wiki/Chroot

https://linuxcontainers.org/
Creating a Container Running bash page 63/bm 84

docker create --name="awesome-service" ubuntu:latest
docker run --rm -ti ubuntu:latest /bin/bash

Resource Quotas page 67/ bm89
Docker Documentation page 68 resolves to the link below:

https://docs.docker.com/engine/installation/linux/ubuntu/
A container is a tree of processes  page 75/bm 97

Things to do at the CLI  page 79/bm 102

sudo docker version

sudo docker info

sudo docker --help

sudo docker create --help
Docker Up&Running 12

- j-ThinkPad-T430s ~ # docker ps

- CONTAINER ID   IMAGE               COMMAND             CREATED         STATUS                      PORTS               NAMES
  - Status
  - Ports

- j-ThinkPad-T430s ~ # docker run -d -t ubuntu /bin/bash

- efa94fca102b94d49f7216f669e0411c61764ea9b6b0597d26662a2b8b85eb3

- j-ThinkPad-T430s ~ # docker ps

- CONTAINER ID   IMAGE               COMMAND             CREATED         STATUS                      PORTS               NAMES
  - Status
  - Ports
  - Created

- efa94fca102b94d49f7216f669e0411c61764ea9b6b0597d26662a2b8b85eb3 ubuntu:latest /bin/bash 6 seconds ago stoic_morse

Up 5 seconds
Getting Inside a Running Container page 83/bm 105

j-ThinkPad-T430s ~ # docker ps

<table>
<thead>
<tr>
<th>CONTAINER ID</th>
<th>IMAGE</th>
<th>COMMAND</th>
<th>CREATED</th>
<th>NAMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>efa94fcdf102</td>
<td>ubuntu:latest</td>
<td>/bin/bash</td>
<td>9 minutes ago</td>
<td>Up 9 minutes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>stoic_morse</td>
</tr>
</tbody>
</table>

j-ThinkPad-T430s ~ #

root@efa94fcdf102:/#

root@efa94fcdf102:/# pwd

/

root@efa94fcdf102:/#
Execution Drivers   pg 149/bm 171

libcontainer and LXC  pg 151/bm 173
LXD                 pg 153/bm 175
Containers in Detail  page 156/bm 178
Kernel Namespace  page 161/bm 183
Security  page 164/bm 186
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