How Docker is Changing IT

5 YEARS CREATING AN INDUSTRY OF INNOVATION

This is it. Containers are the next once-in-a-decade shift in infrastructure and process that make or break you.

SAID BY ME. JUST NOW.

Let's Recap

MAJOR INFRASTRUCTURE SHIFTS

Mainframe to PC
90'S

Baremetal to Virtual
00'S

Datacenter to Cloud
10'S

Host to Container (Serverless)

Yet, all these shifts, shifts, and the
Virtual keeps shifts, shifts, Docker the
hardware on the migration experience.

Containers are the “Fastest Growing Cloud Enabling Technology”

“By 2020, more than 50% of global organizations will be running containers in production.”

-Gartner

Title source: 451 Research

@docker

@gordonTheTurtle

What will Docker do for me?

Docker is all about speed.

Develop Faster.

Build Faster.

Test Faster.

Deploy Faster.

Update Faster.

Recover Faster.

The “Matrix from Hell” Breeds Complexity

	Desktop	Test/QA Cluster	Production Cluster	Public Cloud	Data Center	Mainframe	Windows Server	Edge Device
Static Website	?	?	?	?	?	?	?	?
Web Frontend	?	?	?	?	?	?	?	?
Background Workers	?	?	?	?	?	?	?	?
User DB	?	?	?	?	?	?	?	?
Analytics DB	?	?	?	?	?	?	?	?
Queue	?	?	?	?	?	?	?	?

Containers Reduce Complexity

Maintenance and Complexity Drains Budgets, So Innovation Suffers

80%
MAINTENANCE

20%
INNOVATION

IT demands *increasing!*

<20% server utilization***

8+ IT Silos*

1000's of apps

Stalled Initiatives

- Modernizing legacy apps
- Cloud migration
- Server consolidation
- Faster s/w time to market

60% of CIOs say
"We're behind in digital transformation"*

* Average number infrastructures in the enterprise (on-prem and cloud)
** Forrester, CIO and the emerging Digital Crisis, 2018
*** CloudPhysics, Global IT Data Lake Report, Q4, '16
Sources: IDC "The Cost of Retaining Aging IT Infrastructure", RightScale 2017 State of the Cloud Report

500+ Build Their Containerization Strategy with Docker Enterprise Edition

Oil & Gas / Energy	Healthcare & Science	Financial Services	Tech	Insurance	Public Sector
Shell	AMGEN	Goldman Sachs	GE	Anthem	GSA
HALLIBURTON	MERCK	SOCIETE GENERALE	RSA	Alm Brand	kadaster
Schlumberger	gsk GlaxoSmithKline	VISA	PayPal	Liberty Mutual INSURANCE	Cornell University Founded A.D. 1865
eog resources	HudsonAlpha Institute for Biotechnology	ADP	splunk>	MetLife	Indiana University

docker.com/customers

PayPal

18 Month project
Migrated 700+ apps
Now 150,000 containers
50% dev productivity boost

MetLife

70% reduction in VM costs
67% fewer CPU's
10x average CPU utilization
66% cost reduction

https://blog.docker.com/2017/10/metlife-docker-enterprise-edition-self-funded-containerization/

https://blog.docker.com/2017/12/containers-at-paypal/

5
docker

Docker Birthday #5

HAPPY BIRTHDAY
docker

DOCKER!

5
HAPPY
BIRTHDAY
docker

HAPPY BIRTHDAY
DOCKER!

HAPPY BIRTHDAY
DOCKER!
docker

Docker

Cloud Native Landscape

v2.1

See the interactive landscape at landscape.cncf.io

Greyed logos are not open source

App Definition & Development

Database & Data Warehouse

Vitess (CNCF Incubating)

ArangoDB, BIGCHAIN DB, CarbonData, Cassandra, CockroachDB, Couchbase, CRATE.IO, druid, Elasticsearch, IBM DB2, Iguazio, Infinispan, MariaDB, MEMSQL, memgeoDB, MySQL, Noms, ORACLE DATABASE, OrientDB, Platform, pilosa, PostgreSQL, presto, Qubole, redis, RethinkDB, SCYLLA, snowflake, Software, STAMPEDE2 DATA, SQL Server, Tibero, VERTICA, YugaByte

Streaming

NATS (CNCF Incubating)

Amazon Kinesis, APEX, nifi, Apache Pulsar, Spark, STORM, cloudevents, Flink, Heron, kafka, PULSAR, RabbitMQ, StreamSets

Source Code Management

Bitbucket, GitHub, GitLab, Source Code Services

Application Definition

apache brooklyn, bitnami, habitat, Kubeflow, OPEN API, Packer

Continuous Integration / Continuous Delivery (CI/CD)

AppVeyor, argo, Bamboo, buddybuild, Buildkite, circleci, Skycap, cloudbees, CodeFresh, Codeship, Concourse, ContainerOps, distelli, Drone, Habitus, Jenkins, openstack Zuul, GOCD, Semaphore, shippable, Solano Labs, Spinnaker, Travis CI, weave flux, wercker, XL DEPLOY

Orchestration & Management

Scheduling & Orchestration

kubernetes (CNCF Graduated)

Amazon ECS, Docker SWARM, MESOS, Microsoft Azure Service Fabric, Nomad

Coordination & Service Discovery

CoreDNS (CNCF Incubating)

Apache Zookeeper, Consul, ContainerPilot, etcd, NETFLIX EUREKA, SkyDNS, airbnb SmartStack, vmware Haret

Service Management

GRPC (CNCF Incubating), envoy (CNCF Incubating), LINKERD (CNCF Sandbox)

3SCALE, Ambassador, AVI, Apache Thrift, AVI, backplane, CONDUIT, f5, HAPROXY, heptio Contour, HYSTRIX, Istio, Kong, NETFLIX ZUUL, NGINX, Open Policy Agent, OPENRESTY, NETFLIX RIBBON, traefik, TURBINE, vamp

Runtime

Cloud-Native Storage

ROOK (CNCF Sandbox)

ceph, CSI, DATERA, DELL EMC, Diamanti, GLUSTER, HATCHWAY, HEDVIG, infinit, kasten, LeoFS, Joyent MANTA, MINIO, NetApp, OpenEBS, OpenIO, OpenSDS, portworx, PURESTORAGE, Quobyte, ROBIN, Sheepdog, springpath, STORAGEOS, SWIFT

Container Runtime

containerd (CNCF Incubating), rkt (CNCF Incubating)

cri-o, Intel Clear Containers, kata, lxd, OPEN VZ, Pouch, runV, Singularity, SmartOS

Cloud-Native Network

CNI (CNCF Incubating)

Aporeto, AVIATRIX, Big Switch, canal, cilium, Contiv, CUMULUS, flannel, GuardiCore, midonet, VMWARE NSX, nuagenetworks, OvS, Open vSwitch, OPENCONTRAIL, PLUMgrid, Calico, ROMANA, snaproute, weave net

Provisioning

Host Management / Tooling

ANSIBLE, CFEngine, CHEF, LINUXKIT, puppet, RUN DECK, SALTSTACK

Infrastructure Automation

AWS CloudFormation, BOSH, CloudFoundry coreo, CLOUDIFY, HELM, Infrakit, JUJU, Kubicorn, ManageIQ, Terraform

Container Registries

Amazon ECR, Azure Registry, codefresh REGISTRY, Docker REGISTRY, Google Container Registry, HARBOR, JFrog Artifactory, Portus, ATOMIC, QUAY

Secure Images

notary (CNCF Incubating), TUF (CNCF Incubating)

anchore, aqua, BLACKDUCK, clair, NeuVector, OpenSCAP, Sonatype Nexus, Twistlock

Key Management

KeyWhiz, KNOX, lyft CONFIDANT, ORACLE POLICY AUTOMATION, SPIFFE, SPIRE, Vault

Cloud

Public

Alibaba Cloud, aws, Azure, Baidu Cloud, DigitalOcean, FUJITSU, Google Cloud, HUAWEI, IBM Cloud, Joyent, ORACLE, packet, Tencent Cloud

Private

DIGITAL REBAR, FOREMAN, MAAS, openstack, Scaleway, vmware

github.com/cncf/landscape

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

CLOUD NATIVE Landscape

CLOUD NATIVE COMPUTING FOUNDATION

Redpoint Amplify PARTNERS

Platforms

Certified Kubernetes - Distribution

Apcera, Apps Code, caicloud, CANONICAL, CONTAINER SOLUTIONS, Core OS, DaeCloud, Diamanti, docker, Ghostcloud, Giant Swarm, Google Cloud, heptio, IBM Cloud, InwinSTACK, Joyent, kubo-spoon, kublr, Kubermatic, MICROSOFT, MIRANTIS, NetFoundry Cloud, OPEN SHIFT, ORACLE, ORACLE, Pivotal, PLATFORM9, QFusion, RANCHER, SAMSUNG SDS, STACK POINT CLOUD, SUSE, TECTONIC, Typhoon, vmware, WEBWINKS, WINDRIVER

Certified Kubernetes - Platform

alauda, Alibaba Cloud, Amazon Web Services, Azure, Baidu Cloud, 博云, CISCO, EasyStack, eBay Technology, 华为云科技, SASIG, HUAWEI, IBM Cloud, nirmata, ORACLE, SAP, Tencent Cloud, 时速云, ZTE

Non-Certified Kubernetes

Amazon EKS, Maestro, ContainerShip, goPaddle, Gravitational, HUAWEI, navops, STRATOSCALE, SUPERGIANT

PaaS/Container Service

APCERA, ATOMIC, cloudber, APPLICATION ROUTING, convox, DATAWIRE, remind, EXOSCALE, Flynn, GALACTIC FOG, heroku, HYPER.SH, dTopia, KONTENA, Lightbend, MANTL, No Code, Pivotal, platform.sh, Portainer.io, Scalingo, Tsuru

Observability & Analysis

Monitoring

Prometheus (CNCF Incubating)

Amazon CloudWatch, APPDYNAMICS, Applicfy, AXIBASE, cashpoint, centreon, Cube, COSCALE, DATADOG, dynatrace, Google Stackdriver, Grafana, Graphite, Hyperbolic, ICINGA, influxdb, INSTANA, IRONDB, Librato, LIGHTSTEP, Log Analytics, meros, Nagios, NETSIL, New Relic, NODESOURCE, opbeat, OPENTSDB, opsclarity, Outlyer, rocana, sensu, SENTRY, sysdig, density, signal fx, snap, StackRox, StackState, Sysdig, 时速, WAVEFRONT, weave cloud, weave scope, ZABBIX

Logging

fluentd (CNCF Incubating)

elastic, graylog, GGLV, HUMIO, loga.io, loom, sematext, splunk, sumologic

Tracing

OPENTRACING (CNCF Incubating), JAEGER (CNCF Incubating)

Appdash, Skywalking, Zipkin

Serverless

See the separate serverless landscape

Special

Kubernetes Certified Service Provider

accenture, bitnami, caicloud, CANONICAL, claranet, CloudOps, CONTINO, DaeCloud, Ghostcloud, Giant Swarm, heptio, HUAWEI, IBM Cloud, InwinSTACK, JETSTACK, kublr, LINEWIZER, loodse, MIRANTIS, nailwards, nirmata, RX-M, SAMSUNG SDS, STACK POINT CLOUD, SUPERGIANT, TREASURE DATA, WINDRIVER