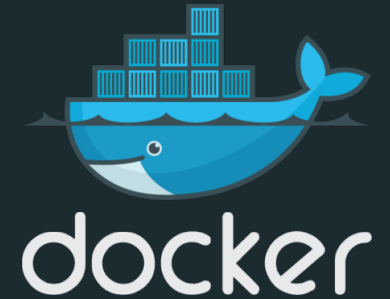


# Docker Datacenter

University of Washington



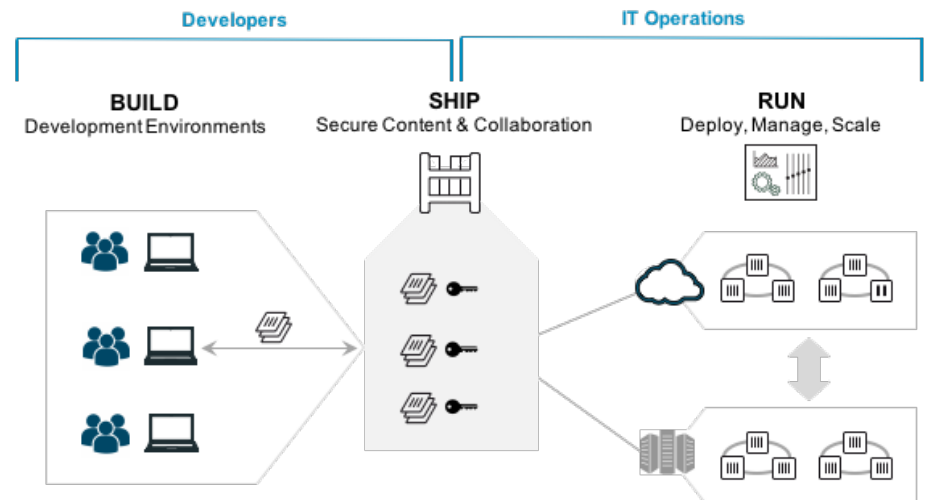
# Objective: Deliver Container-Based Applications

## Scenario for the University of Washington

The University of Washington is seeking to take advantage of the development agility of Docker with a management solution for control to ship and run in dev, test and production.

Docker Datacenter provides:

- **Agility.** Developers have the freedom to define environments, create and deploy apps faster and easier.
- **Control.** Operations have the flexibility to respond quickly to change, and to standardize, secure and scale the operating environment.
- **Portability.** Teams and businesses can choose where to deploy apps, from a laptop to a datacenter to the cloud.



# Solution Pricing – Per Node

## Development and Production Support

Component	Price
<b>LICENSES AND SUPPORT</b> Docker Universal Control Plane Docker Trusted Registry Docker CS Engine <b>1 Node of 'Business Day Support'</b>	\$1,5000
Number of Nodes	10
Discount for 5-50 nodes	20%
Services	TBD
Training	TBD
Total for Licenses and Support	\$12,000
1 Free DockerCon Seattle (June 20-21) Pass expires 3/31/16	\$0
<b>GRAND TOTAL</b>	<b>TBD</b>

## Hardware Investment

Review deployment options for the production environment:

- **On-Premises.** Docker Datacenter can be deployed on-premises on commodity hardware.
- **In-Cloud.** Docker Datacenter can be deployed in any Cloud and VPC environments including AWS and Azure.



# Solution Pricing – Site License

## Development and Production Support

Component	Price
<b>LICENSES AND SUPPORT</b> Docker Universal Control Plane Docker Trusted Registry Docker CS Engine <b>Per Department, Unlimited Nodes for 'Business Day Support'</b>	\$30,000
Implementation Services	TBD
Training	TBD
Number of Nodes:	Unlimited
TOTAL for Licenses and Support	\$30,000
1 Free DockerCon Seattle (June 20-21) Pass expires 3/31/16	\$0
<b>GRAND TOTAL</b>	<b>TBD</b>

## Hardware Investment

Review deployment options for the production environment:

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[Review Page 11 >](#)



# Docker Basics and Case Studies



# Docker drives the Containerization movement

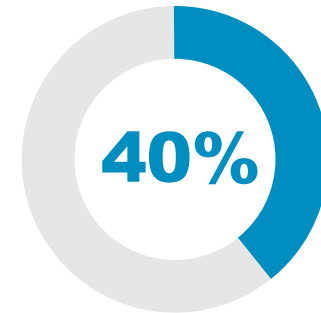
**2BN+** Image Downloads

**1500+** Contributors

**200,000+** Dockerized Applications

Source: Docker Hub

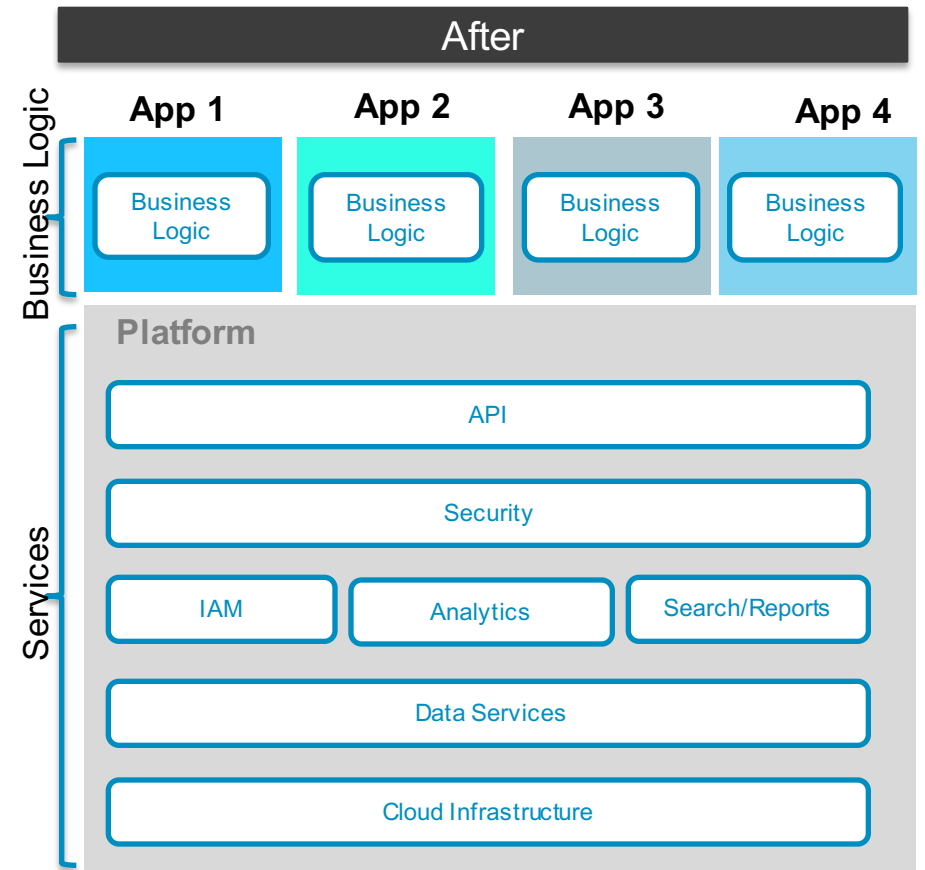
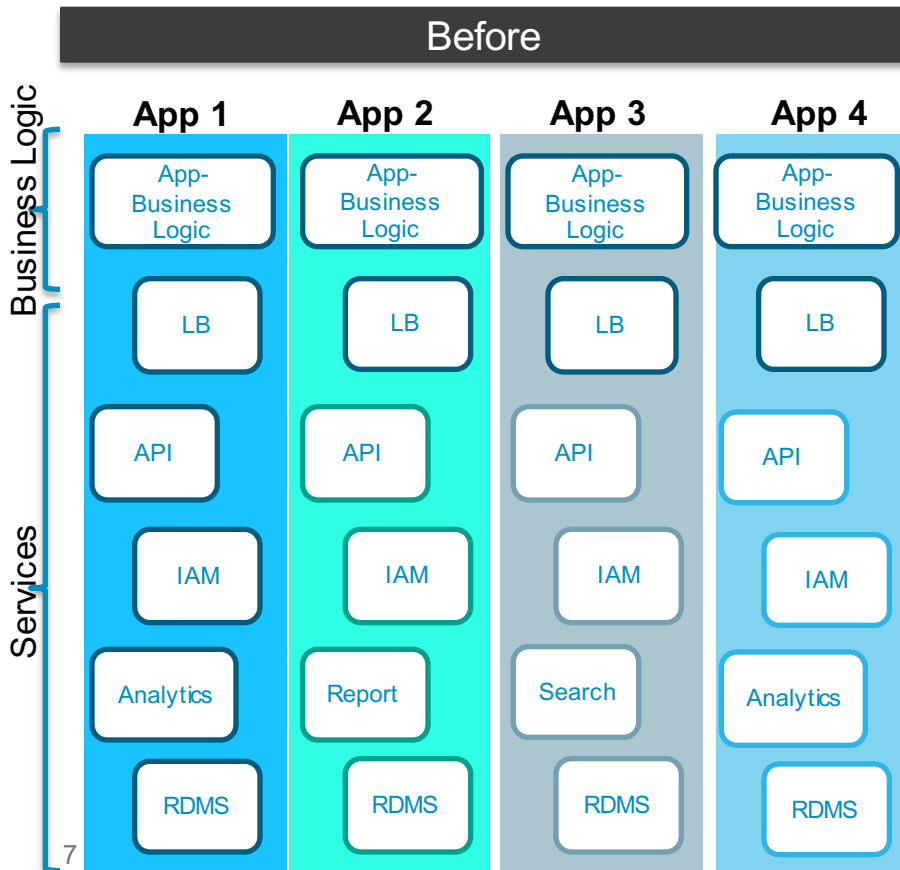
Docker users running in production



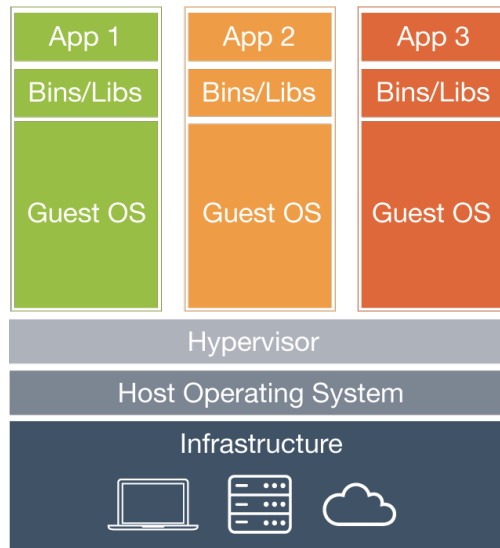
Gerber, Anna. "The State of Containers and the Docker Ecosystem: 2015" O'Reilly, September 2015



# Case Study: Microservices

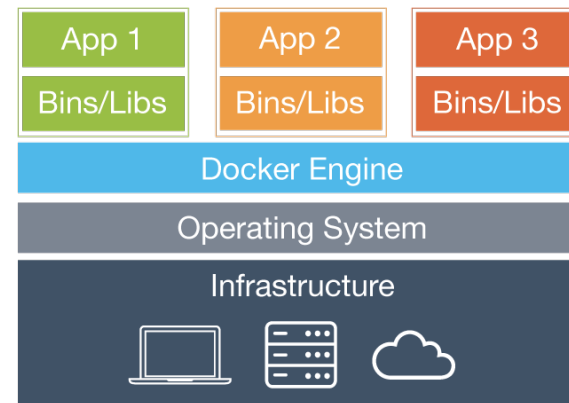


# VMs versus Containers



## Virtual Machines

Each virtual machine includes the application, the necessary binaries and libraries and an entire guest operating system.



## Containers

Containers include the application and all of its dependencies, but share the kernel with other containers. They run as an isolated process not tied to any specific infrastructure.





# Let's start with some basic concepts



## **Docker Image**

The basis of a Docker container



## **Docker Container**

The standard unit in which the application service resides



## **Docker Engine**

Creates, ships and runs Docker containers deployable on physical or virtual host locally, in a datacenter or cloud service provider



## **Docker Trusted Registry**

Secure image storage and distribution service deployed inside your firewall

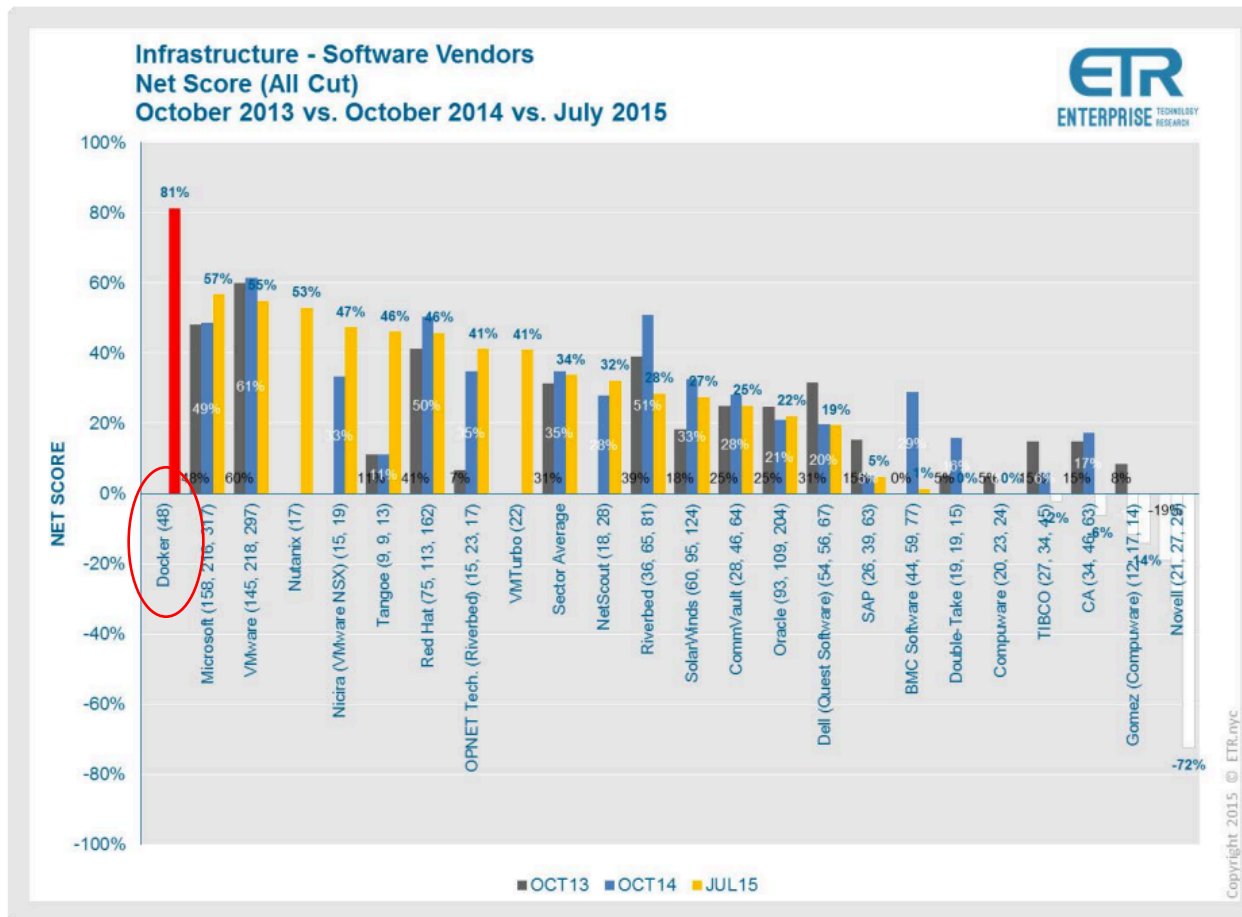


## **Docker Universal Control Plane**

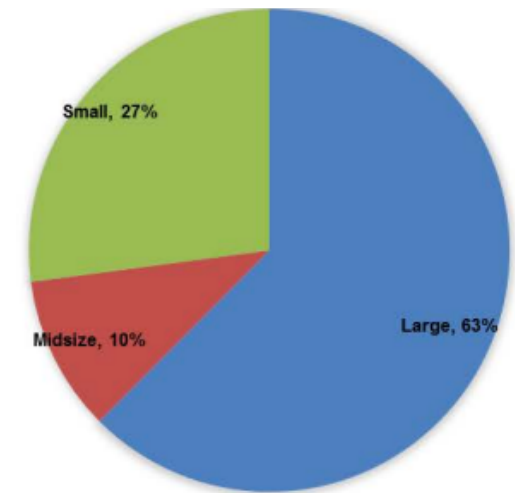
Container orchestration and deployment tool, giving organizations the ability to provision and cluster containers across environments



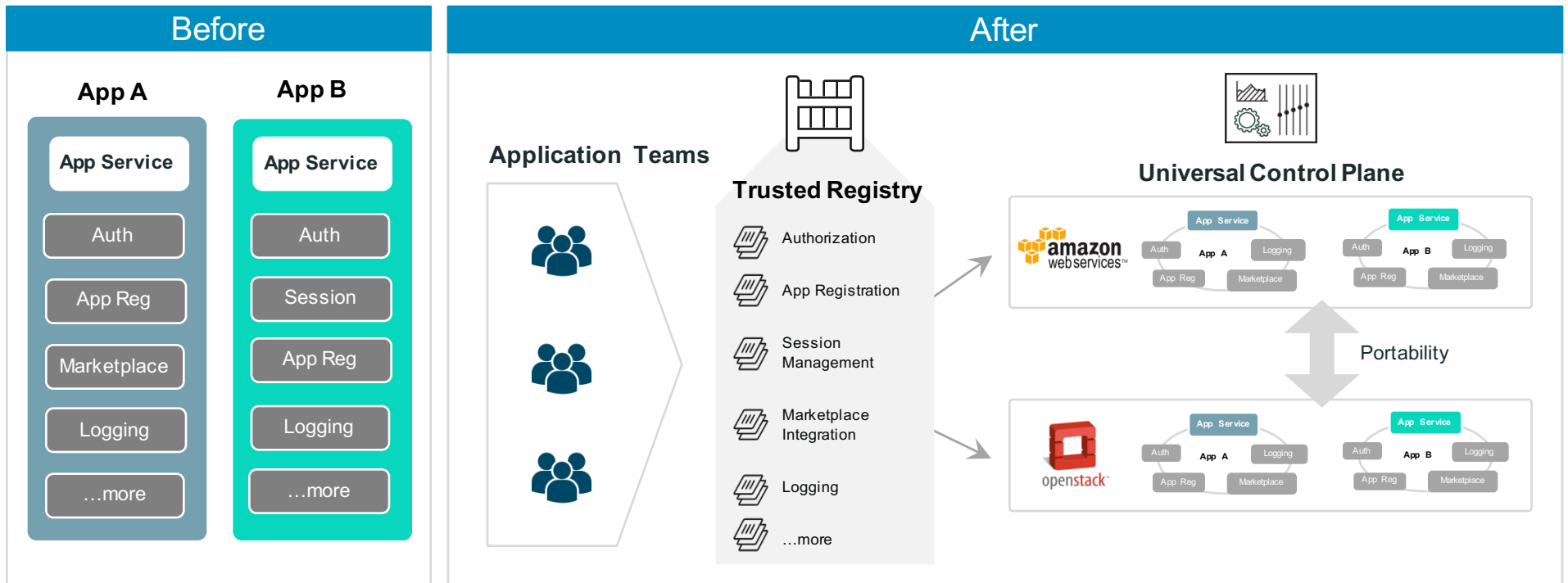
# Enterprises Rapidly Adopting Docker



Respondent Company Size



# Case Study: Payroll processor enables Docker for microservices and devops transformation



Common services in monoliths are turned into base applications stored in the Trusted Registry available to all app teams

Teams request into central IT maintained portal/registry to provision infrastructure and pull base images

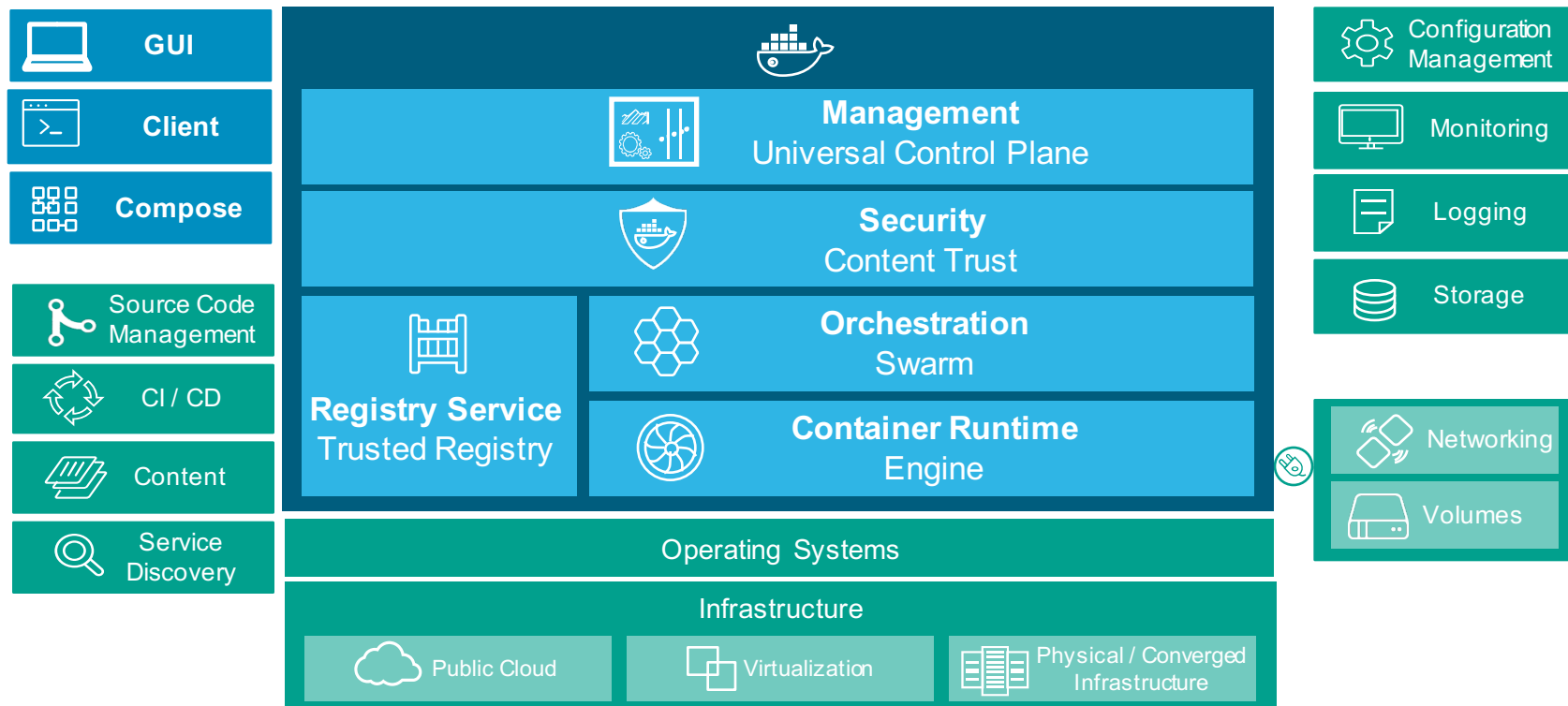
Monoliths are now micro services applications. Each app has it's own containers based on the same base image



# Docker Datacenter



# Docker Datacenter Architecture



# Accessing the Docker Platform

## Developers: Docker Toolbox

The Docker Toolbox provides a suite of components to help development and operations team become productive with Docker immediately.

<http://www.docker.com/products/toolbox>

The Docker Toolbox contains:

- [Docker Machine](#)
- [Docker Engine](#)
- [Docker Compose](#)
- [Kitematic](#)

Developers should also access:

- [Docker Swarm](#)

## IT Ops: Docker Datacenter

Docker Datacenter provides the components to build a production environment for your organization. It can be accessed as a trial via Docker Hub.

<http://hub.docker.com/enterprise/trial>

Docker Datacenter is comprised of:

- [Docker Engine \(Commercially Supported\)](#)
- [Docker Trusted Registry](#)
- [Docker Universal Control Plane](#)



# Docker Datacenter Capabilities

Component	Universal Control Plane	Trusted Registry	CS Engine
<b>Description</b>	Enterprise-grade on-premises service for managing and deploying Dockerized distributed application in any on-premises or virtual cloud environments. Its built in security features like LDAP/AD integration and role-based access control (RBAC) allow IT teams to be in compliance with industry security regulations.	Enterprise-ready on-premises service for storing, distributing and securing images. The registry gives enterprises the ability to ensure secure collaboration between developers and sys admins to build, ship and run applications.	Subscribers receive commercial support for their Docker engines. We call the “CS” engine. The CS engine is made up of the same Core Engine as the open source engine, but has added support from the Docker team.
<b>Features</b>	<ul style="list-style-type: none"> <li>• GUI management for apps, containers, nodes, networks, images and volumes</li> <li>• Docker native stack with Swarm, Compose, CS engine and DTR</li> <li>• Monitoring and logging of users and events</li> <li>• Out of the box HA and TLS</li> <li>• LDAP/AD integration</li> <li>• Role based access control</li> <li>• SSO and push/pull images from DTR</li> <li>• Full Docker API compatible</li> </ul>	<ul style="list-style-type: none"> <li>• GUI for administrators and users</li> <li>• LDAP/AD integration</li> <li>• Role-based access control</li> <li>• Docker Content Trust image signing and verification</li> <li>• Garbage collection for saving memory space.</li> <li>• User audit logs</li> </ul>	<ul style="list-style-type: none"> <li>• All of the capabilities of open source Engines plus:</li> <li>• Direct support contact</li> <li>• Bug fixes, patches</li> <li>• Hot fixes, patches</li> <li>• Predictable release cadence</li> <li>• Longer supported versions</li> <li>• Defect fixes</li> <li>• Validations for configurations</li> </ul>



# Deployment Considerations

## On-Premises

Docker Datacenter can be deployed on any physical or virtual infrastructure in your datacenter. All hosts will be running CS Engine and a few hosts will be required to run the UCP controllers and DTR server.

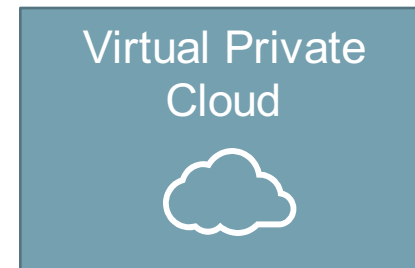
Docker docs has step by step guidance on setting up CS Engine, DTR and UCP. <http://docs.docker.com>



## Cloud

Docker Datacenter can be deployed on any Public or Virtual Private Cloud infrastructure. All hosts will need to run CS Engine and a few hosts will also need to run the UCP controllers and DTR server.

Additionally cloud marketplaces like Azure and AWS have templates to spin up DTR instances. Licenses provided separately.





# Docker Datacenter Subscription Support Options

## Business Day Support

6am-6pm, Monday - Friday

\$1,500 /node/year

## Business Critical Support

24 x 7 x 365

\$3,000 /node/year

Supported Docker Engines can be deployed on any physical, virtual or cloud infrastructure



### Official Technical Support

- Dedicated support engineers and SLAs
- Only available from Docker and IBM



### Direct Product Roadmap Ownership

- Directly responsible for proprietary and open source product roadmap



### Integrations and API Support

- Docker native toolset
- Access to the broadest ecosystem



### Stable

- Predictable release cadence
- Long supported versions
- Backport defect fixes



### Secure

- Address vulnerabilities
- Hotfixes



### Validated Configurations

- Validated operating systems, configurations and interoperability



# The Docker Ecosystem



# Docker Technology Ecosystem

**Official Repositories**

GlassFish, odo, debian, mageia, irssi, MariaDB, openSUSE, PostgreSQL, cassandra, pypy, perl, Apache, maven, WordPress, CentOS, julia, ghost, GCC, ORACLE, CRUX, NGINX, django, mongoD, Apache, httpd, IBM, Sentry, zend, ubuntu, Apache, httpd, IBM, Sentry, helloWorld, MySQL, RabbitMQ, Java, Clojure, Jenkins, Ruby, redis, CRATE, fedora, node, lettuce, neurodebian

**Dev Tools**

wercker, heroku, Vagrant, Brackets, node, runnable, Shippable

**Operating Systems**

RANCHEROS, CentOS, Windows Server, CoreOS, ATOMIC, ubuntu, redhat, fedora

**Big Data**

syncsort, OpenCore, Hadoop

**Service Discovery**

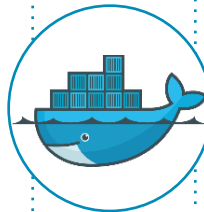
NETFLIX, etcd, SkyDNS

**Build / Continuous Integration**

Te, CircleCI

**Configuration Management**

puppet labs, ANSIBLE, Capistrano, SALTSTACK, Chef



**Infrastructure & Service Providers**

Yandex, vmware, StackDock, Microsoft, raxspace, CLOUD FOUNDRY, DigitalOcean, openstack, StackPath, Microsoft, Yandex, vmware, Amazon Web Services, Domino, SOFTLAYER, DEIS, IBM, VirtualBox, iinode, VOKOZ, Flym, Windows Azure, g

**Networking**

CISCO, vmware, Microsoft, nuagenetworks, midokura, redhat

**Clustering & Scheduling**

mesosphere, IBM, amazon web services, Microsoft Azure, Joyent, vmware

**Storage**

ClusterHQ, IBM, Tintri, HITACHI, PURE STORAGE, vmware, NUTANIX, HEDVIG, EMC, portworx, nimble storage

**Management**

Cloud 66, RANCHER, Terraform, Docker Hub, Docker Cloud

**Security**

redhat, Twistlock, HUAWEI, intel

**Monitoring & Logging**

sysdig cloud, Scout, signal fx, loggly, sumologic, DATADOG

**Consulting & Training**

Dev9, relevance lab, zenika, HIGH OPS, SHADOW SOFT, MomentuMSI, TREEPTIK, OpDemand, Infoception, apparatus, CONTINO



# Docker Services and Training

## Services

To accelerate your time to value, Docker offers professional services to augment your team in the assessment, design and deployment of Docker solutions.

The following packages are available to assist along your journey:

1. Enablement Workshop
2. Quickstart Service
3. Accelerator for Continuous Integration
4. Technical Account Manager

## Training

To aid in the transition to Dockerized application environments, training is available to expand the Docker Datacenter expertise within your application team.

The following courses are available as a remote training:

1. Deploying Docker Datacenter for Evaluation and Production
2. Managing Container Services with Docker Datacenter
3. User Management and Troubleshooting (coming soon)

Custom training engagements are also available by request.





THANK YOU