Born Again Cloud

Information Builders, Inc.

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iWay Software

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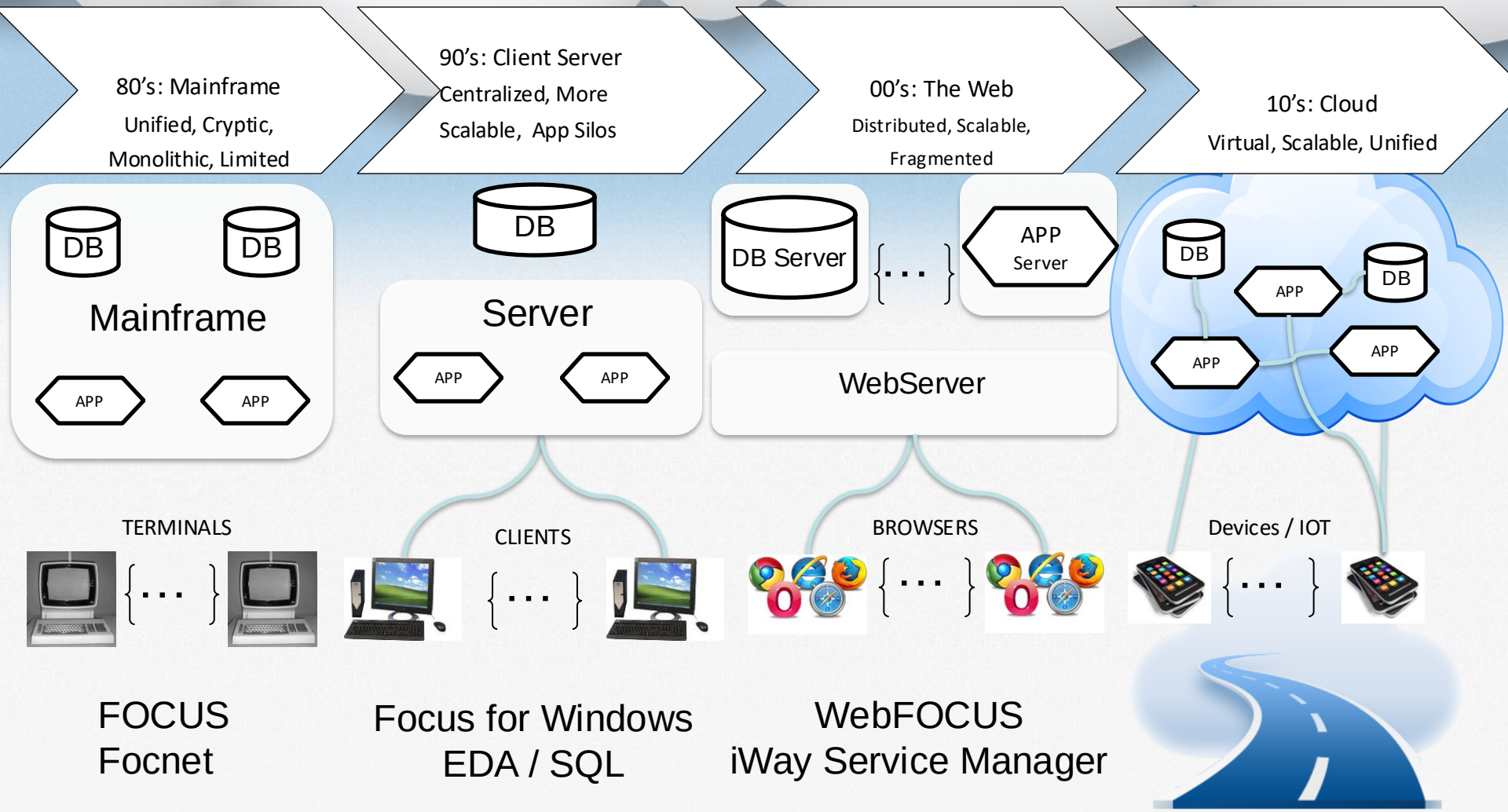
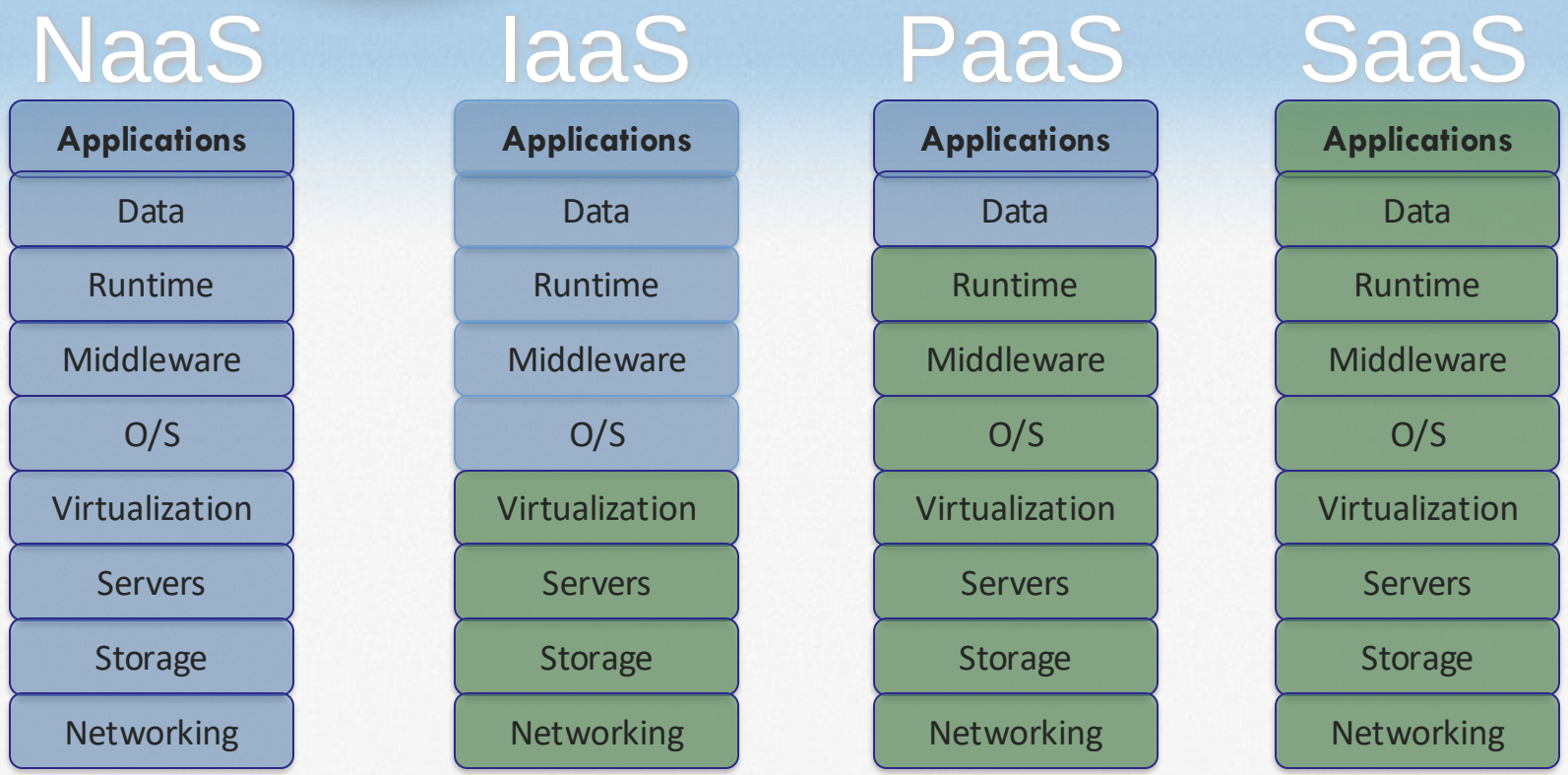
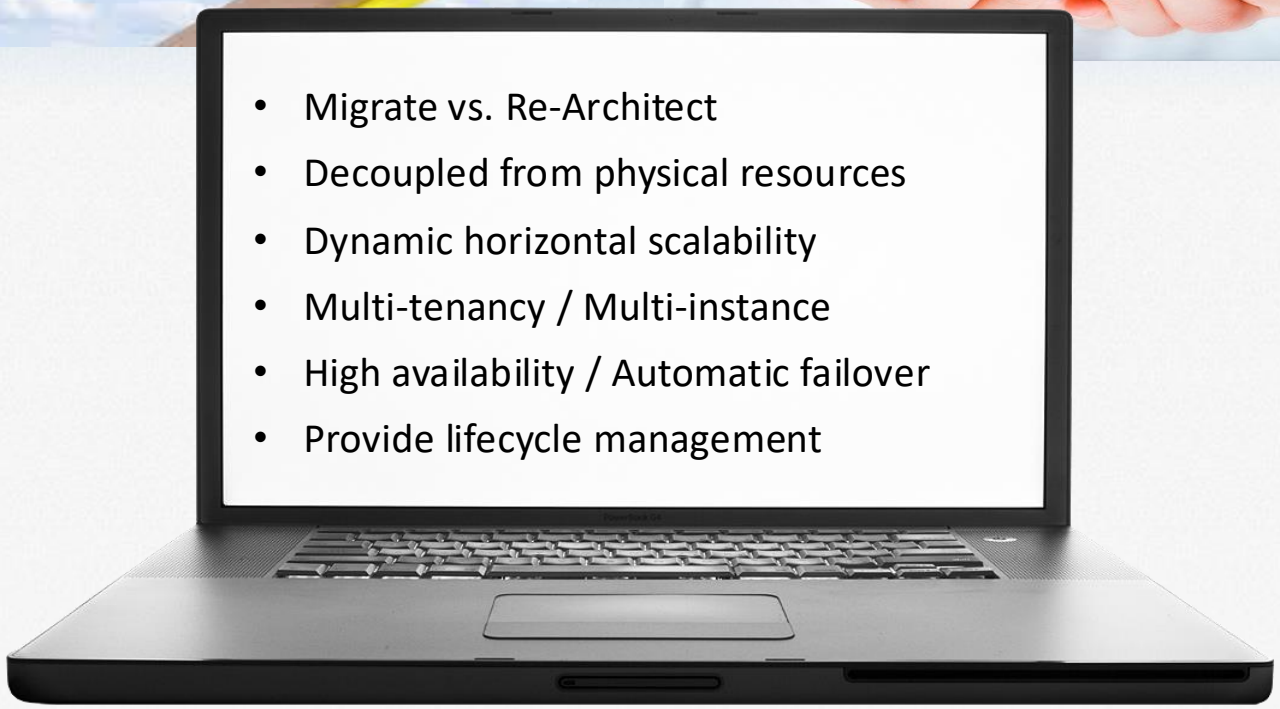
Architectural Evolution



Separation of Responsibilities



Engineering costs / goals ?

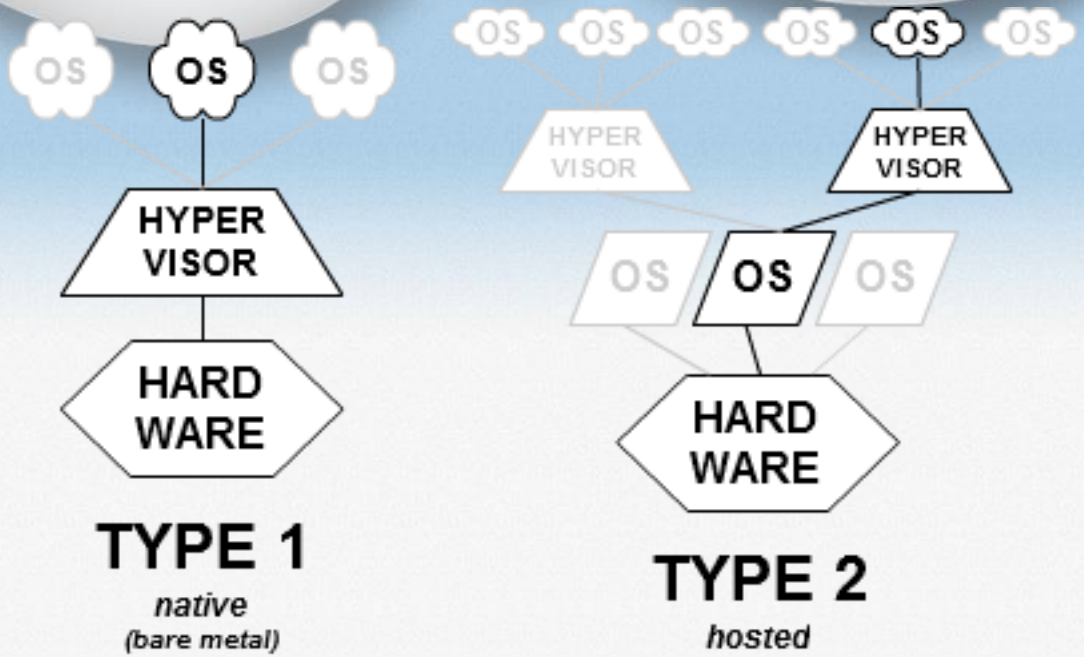


The Twelve-Factor App Methodology

1. **Codebase**
   One codebase tracked in revision control, many deploys
2. **Dependencies**
   Explicitly declare and isolate dependencies
3. **Config**
   Store config in the environment
4. **Backing Services**
   Treat backing services as attached resources
5. **Build, release, run**
   Strictly separate build and run stages
6. **Processes**
   Execute the app as one or more stateless processes
7. **Port binding**
   Export services via port bindings
8. **Concurrency**
   Scale out via the process model
9. **Disposability**
   Maximize robustness with fast startup and graceful shutdown
10. **Dev / prod parity**
    Keep development, staging, and production as similar as possible
11. **Logs**
    Treat logs as event streams
12. **Admin processes**
    Run admin/management tasks as one-off processes

12factor.net

Virtualization Management



CP/CMS thru z/VM
Citrix XenServer,
VM/ware ESX/ESXi
Microsoft Hyper-V

VM/ware Workstation
Oracle Virtualbox
QEMU / KVM

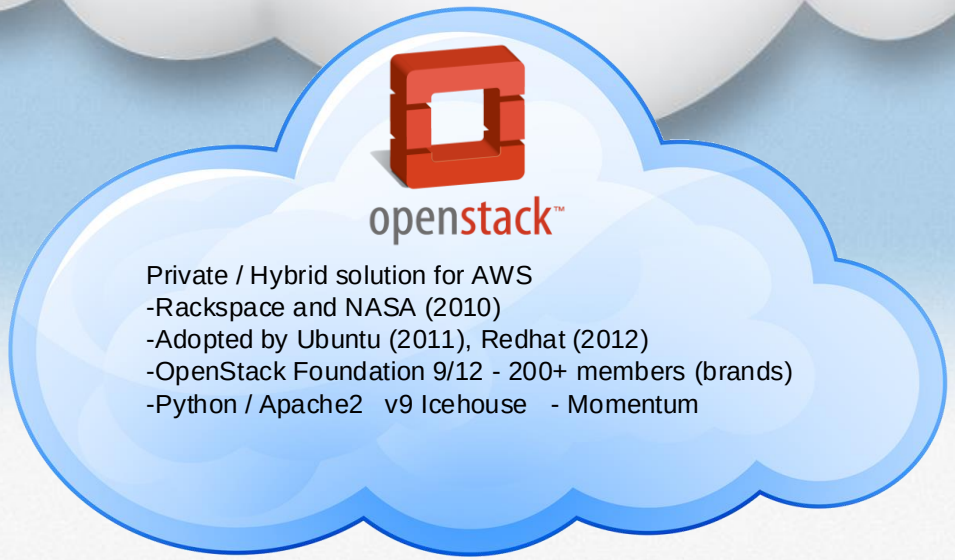
TYPE 1.5

hybrid

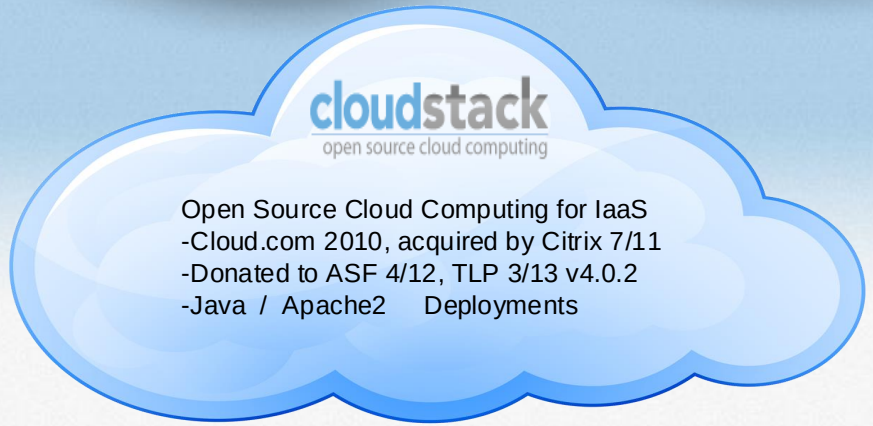
(linux containers LXC)

Docker

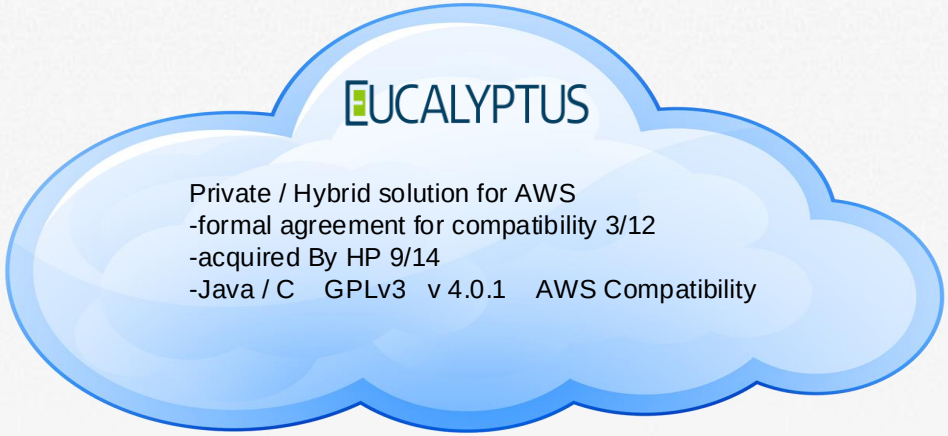
Pick a Stack - IaaS



Private / Hybrid solution for AWS
-Rackspace and NASA (2010)
-Adopted by Ubuntu (2011), Redhat (2012)
-OpenStack Foundation 9/12 - 200+ members (brands)
-Python / Apache2 v9 Icehouse - Momentum

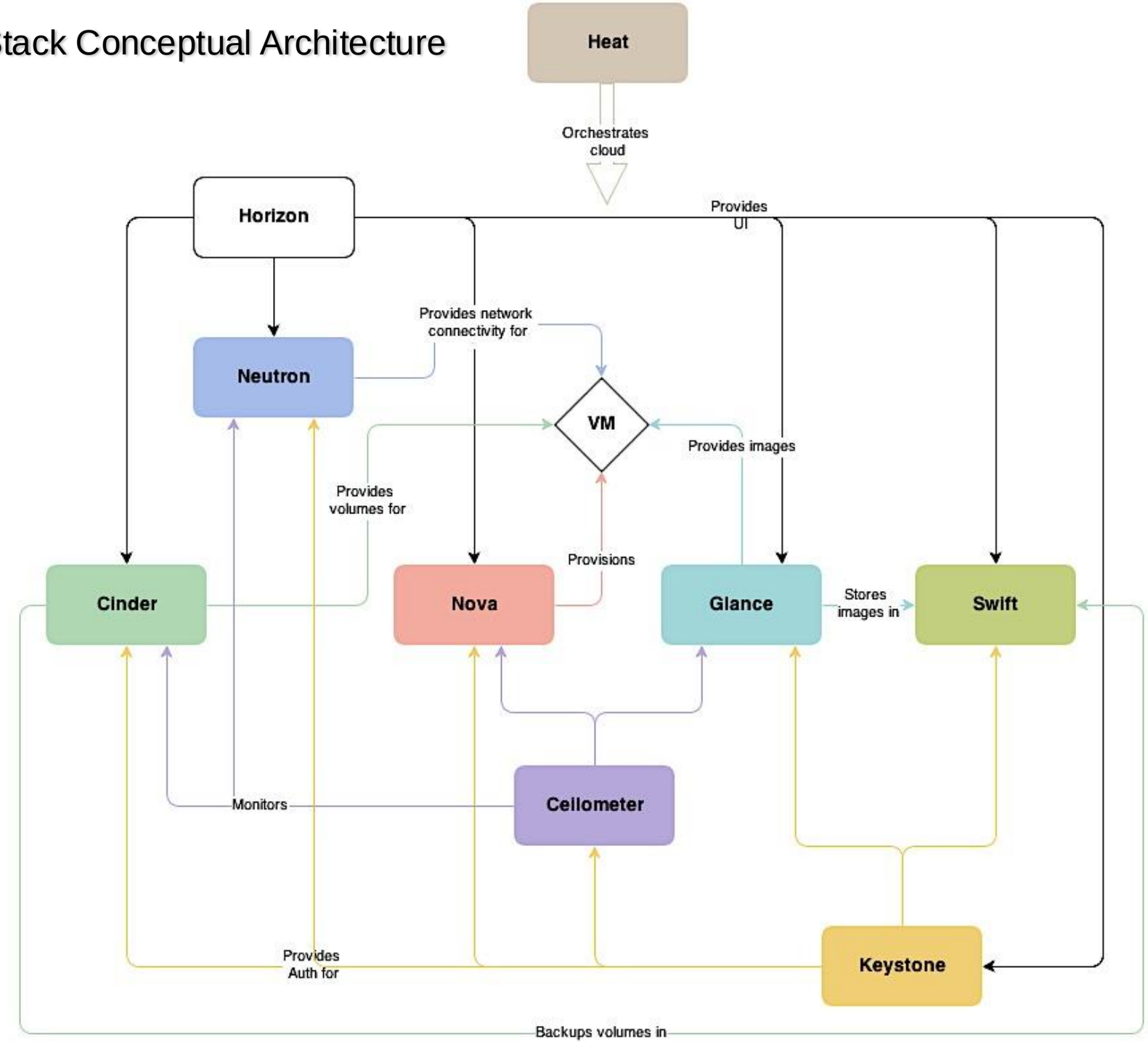


Open Source Cloud Computing for IaaS
-Cloud.com 2010, acquired by Citrix 7/11
-Donated to ASF 4/12, TLP 3/13 v4.0.2
-Java / Apache2 Deployments

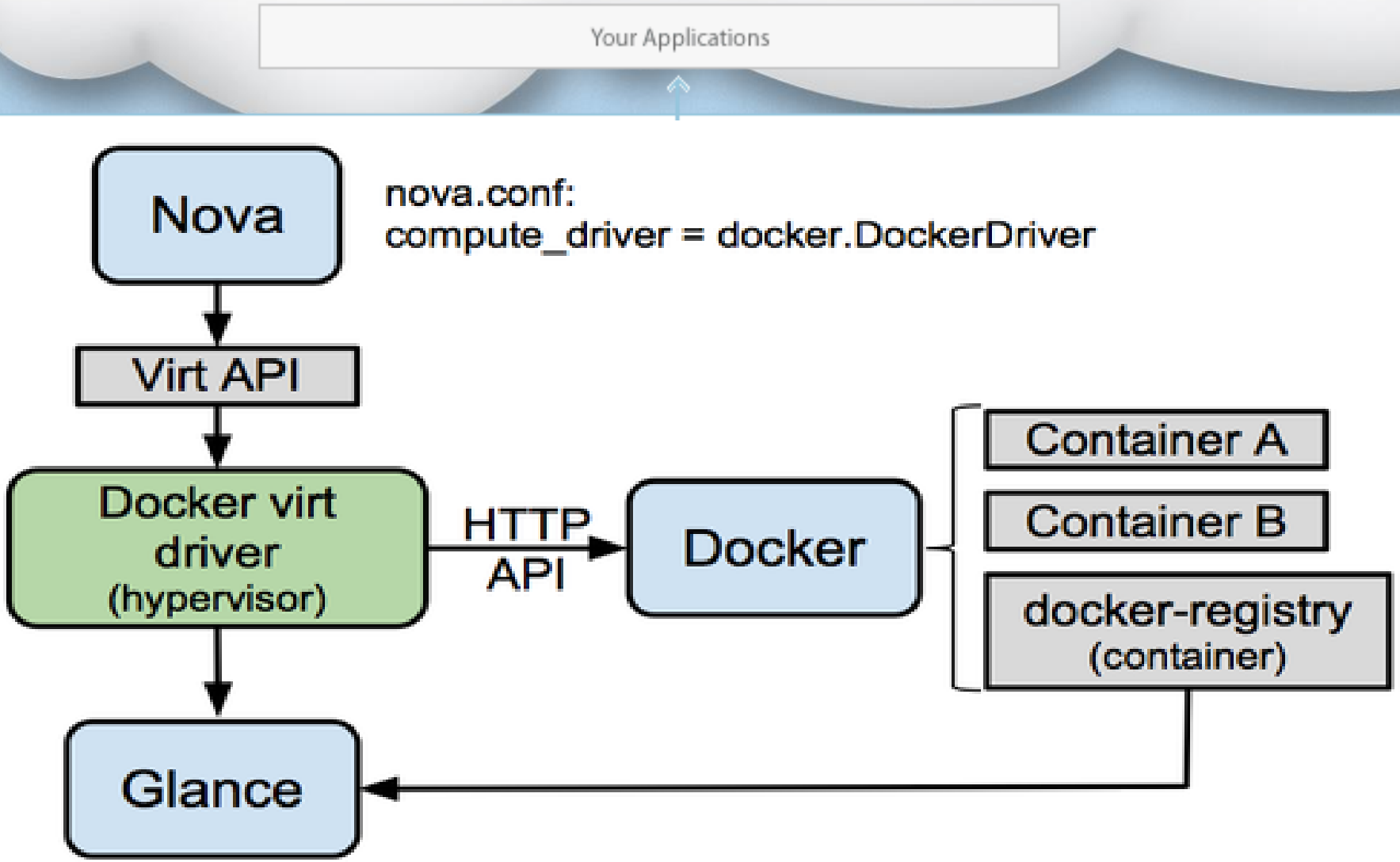


Private / Hybrid solution for AWS
-formal agreement for compatibility 3/12
-acquired By HP 9/14
-Java / C GPLv3 v 4.0.1 AWS Compatibility

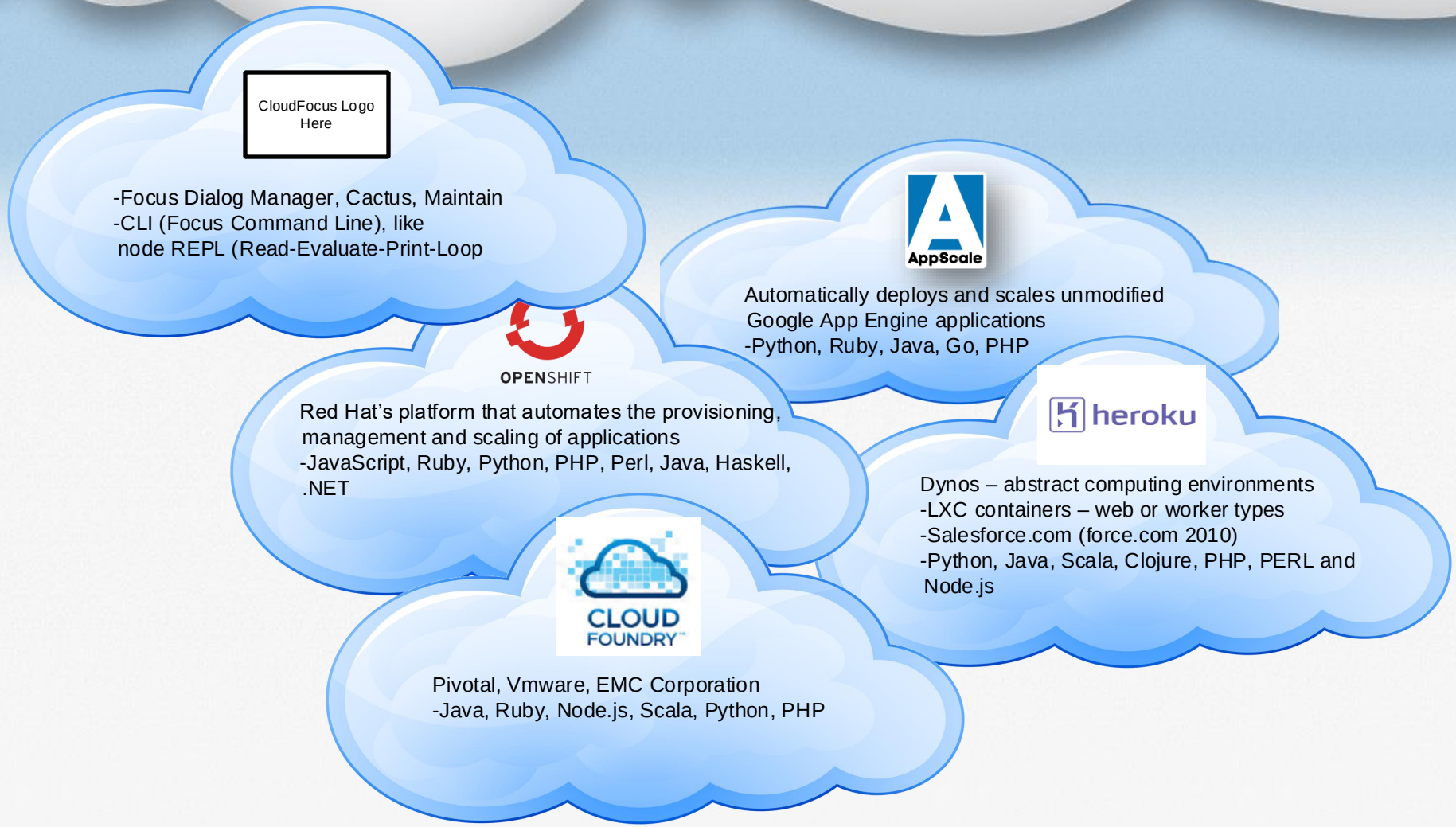
OpenStack Conceptual Architecture



Openstacking iSM



Pick a Platform - Plug into existing PaaS



Pick a Platform – Create Native iPaaS

Cloud-based software tools that govern the interactions between cloud and on-premises applications, processes, services and data.

Dell Boomi AtomSphere iPaaS	***CSI, B2B, MDM, DQ, EAI***
Informatica Cloud	*ETL with Salesforce, 1800 Customers process engine aas*
MuleSoft CloudHub	*Shared Multitenant APIs 170 Enterprise Customers*
IBM Cast Iron Live	*CSI, DevOps, Web based*
SAP Hanna Cloud Integration	*Solid Roadmap, HCI cloudstreams*
SnapLogic	*Pureplay replacement of on-premise integration software*

Partnering Opps with Saas Vendors

- Packaged Integration
- Salesforce.com, Workday, NetSuite, Taleo, SuccessFactors and RightNow

Cloud Architecture Exploration

Create a private cloud using OpenStack Icehouse
- 29th floor, 2 machine config (controller, compute1).
- Had to start from scratch 3 time so far (probably need a few more)
- Steep learning curve, Still not running properly
- need 3 machine config, network config is painful

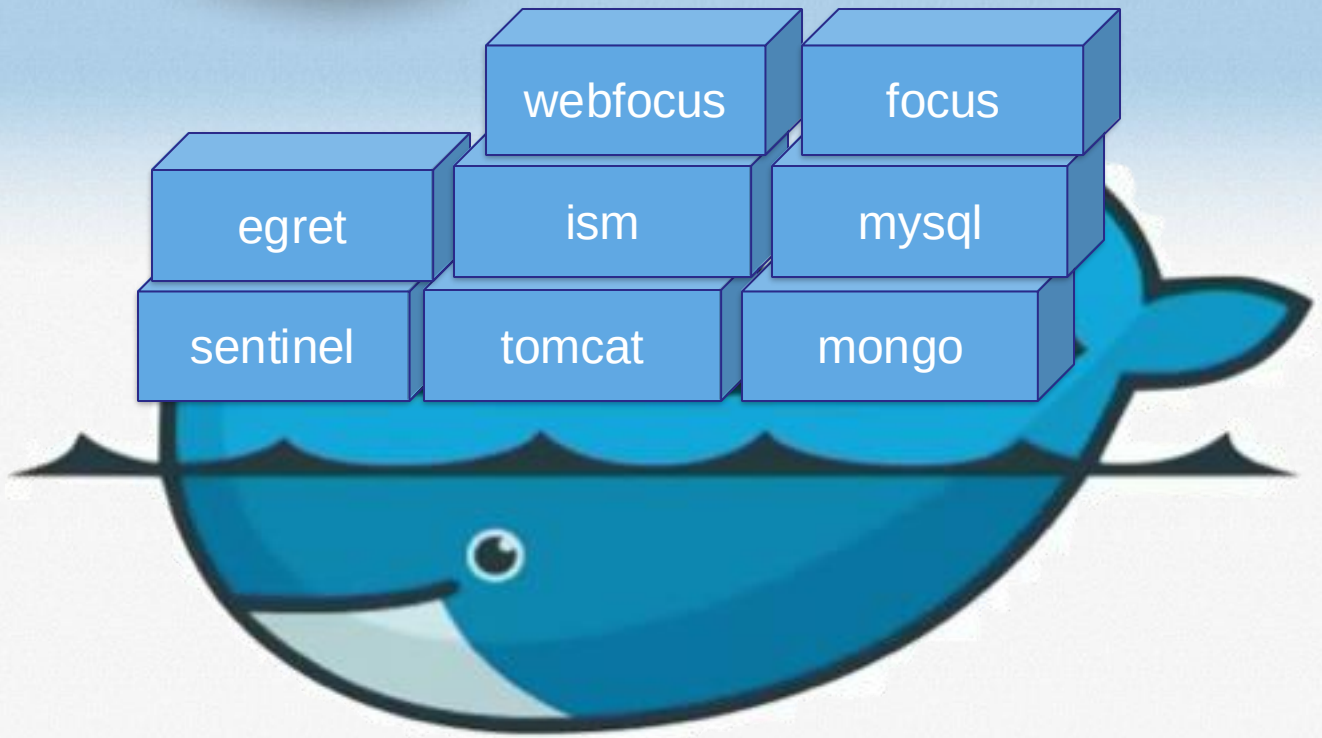
Create a developer version of Icehouse (Devstack)
using tools like Vagrant and Virtualbox, per cookbook
on Linux, Mac and Windows

Create a docker environment and containers for:

iway	ubuntu 14.04.1 + java7
sentinel	iway + tomcat + sentinel
ism	iway + ism
egret	lway + jetty + egret

Docker – Build, Ship and Run

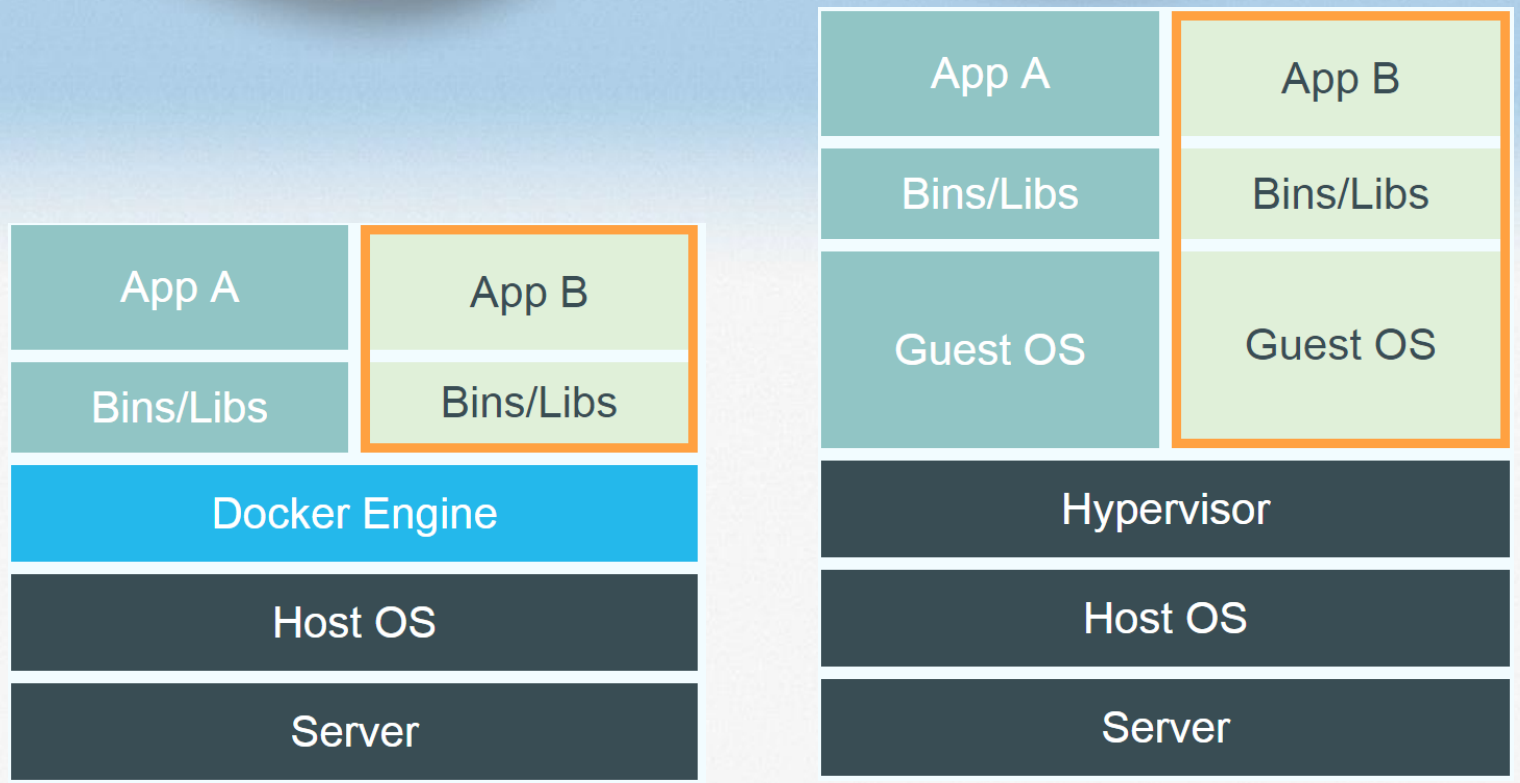
- Provides a uniformed wrapper around a software package
  Portable deployment across machines



•LXC (LinuX Containers)
•libvirt: Platform Virtualization
•Layered File System

•Linux distros (Ubuntu, Fedora, RHEL, Centos, openSUSE, ...)
•Cloud (Amazon EC2, Google Compute Engine, Rackspace)
•Microsoft with next release of Windows Server

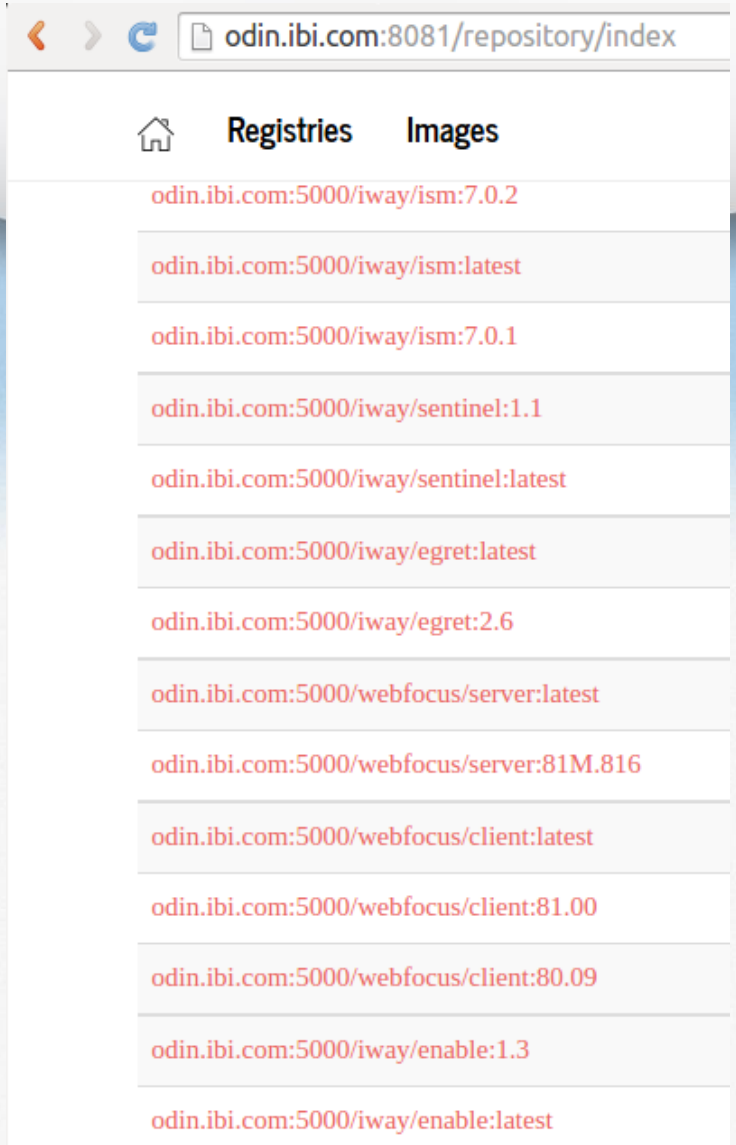
Docker vs. Virtual Machine



Source: https://www.docker.com/whatisdocker/

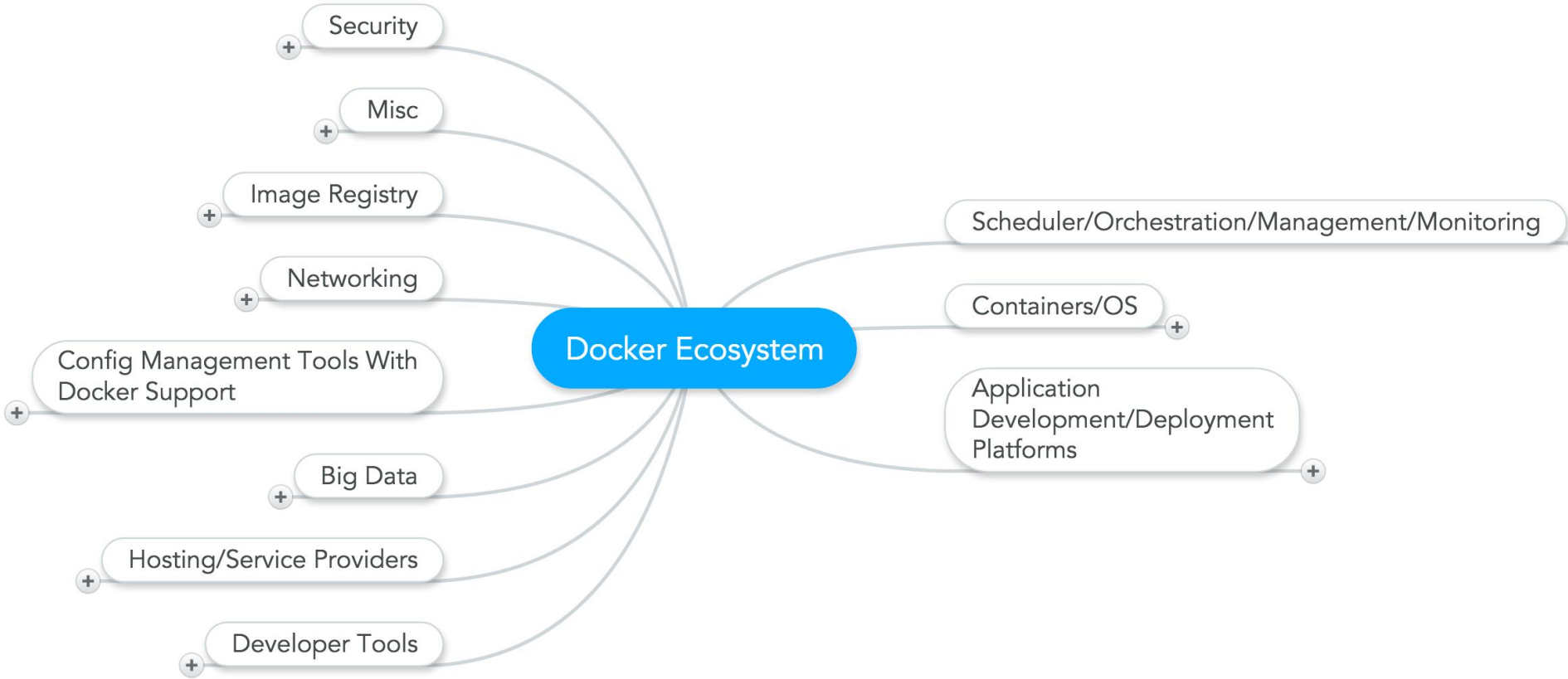
Docker Registry

- Docker image / version control: push, pull and tag images
- Private, Self Hosted - see odin.ibi.com
- Private 3rd Party Hosted, quay.io, jfrog, microsoft, and recently google
- Public / Private Official + Trusted Builds: https://registry.hub.docker.com/



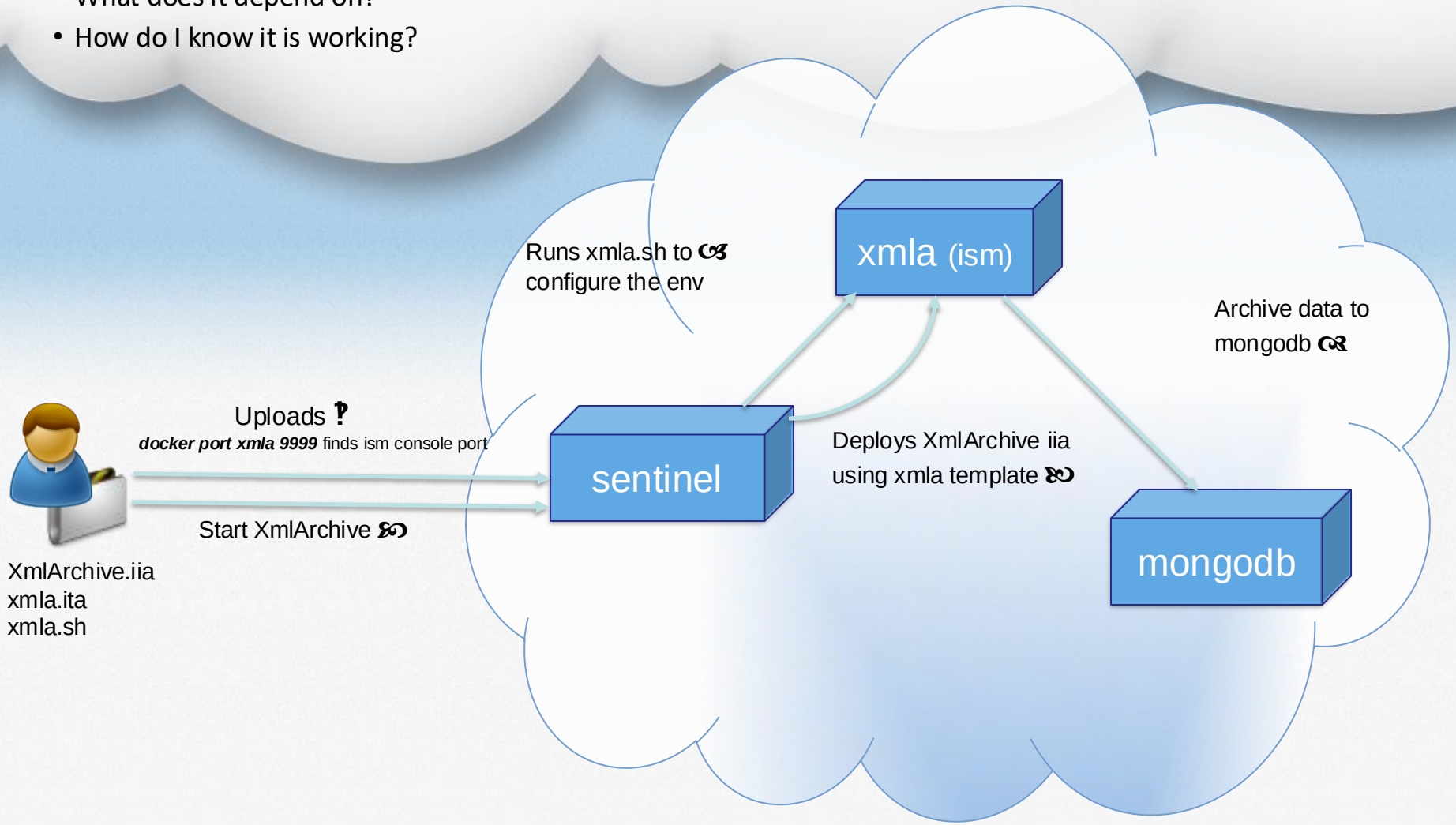
Docker Ecosystem

- www.mindmeister.com/389671722/docker-ecosystem

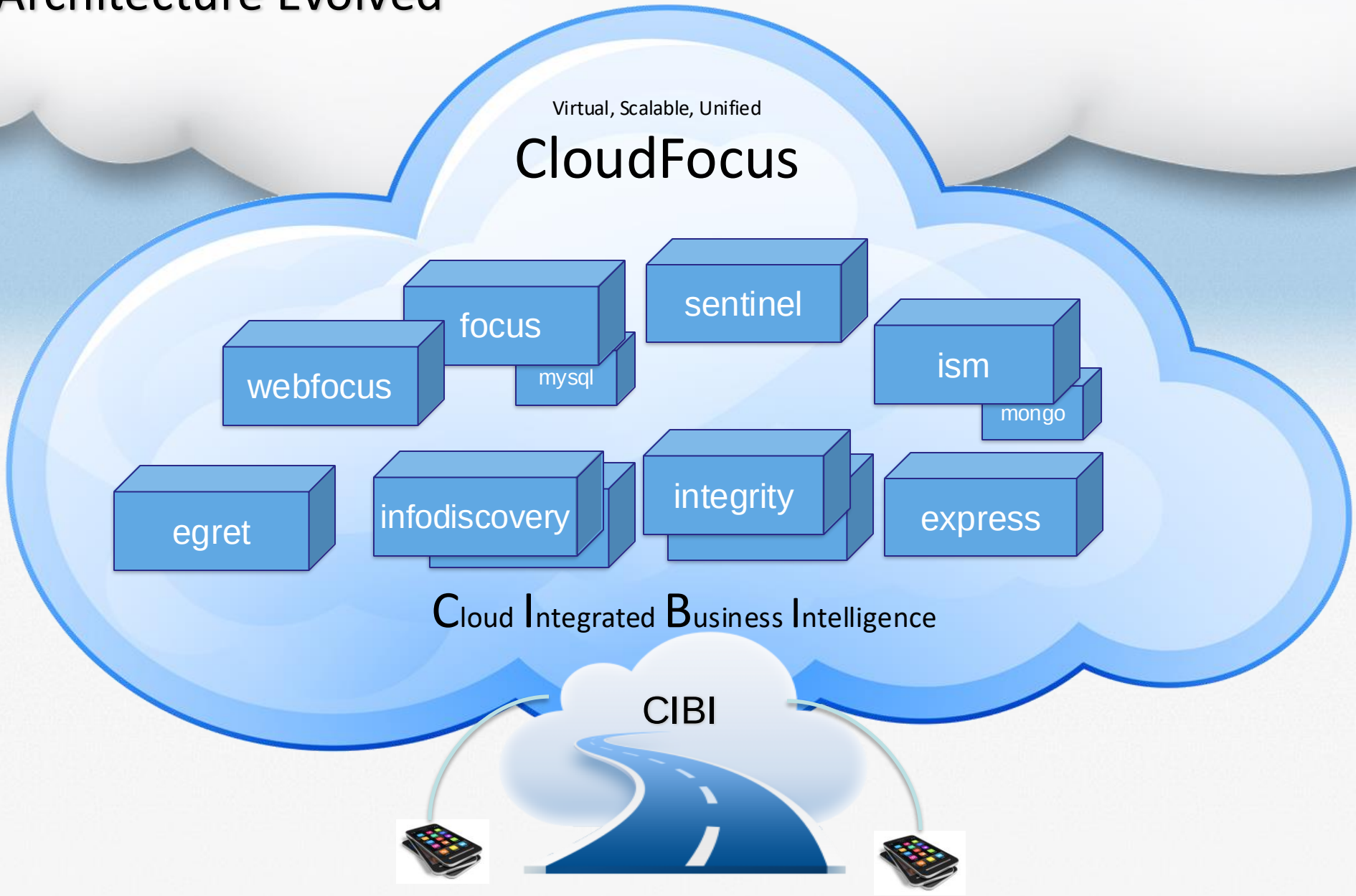


An Example - XmlArchive

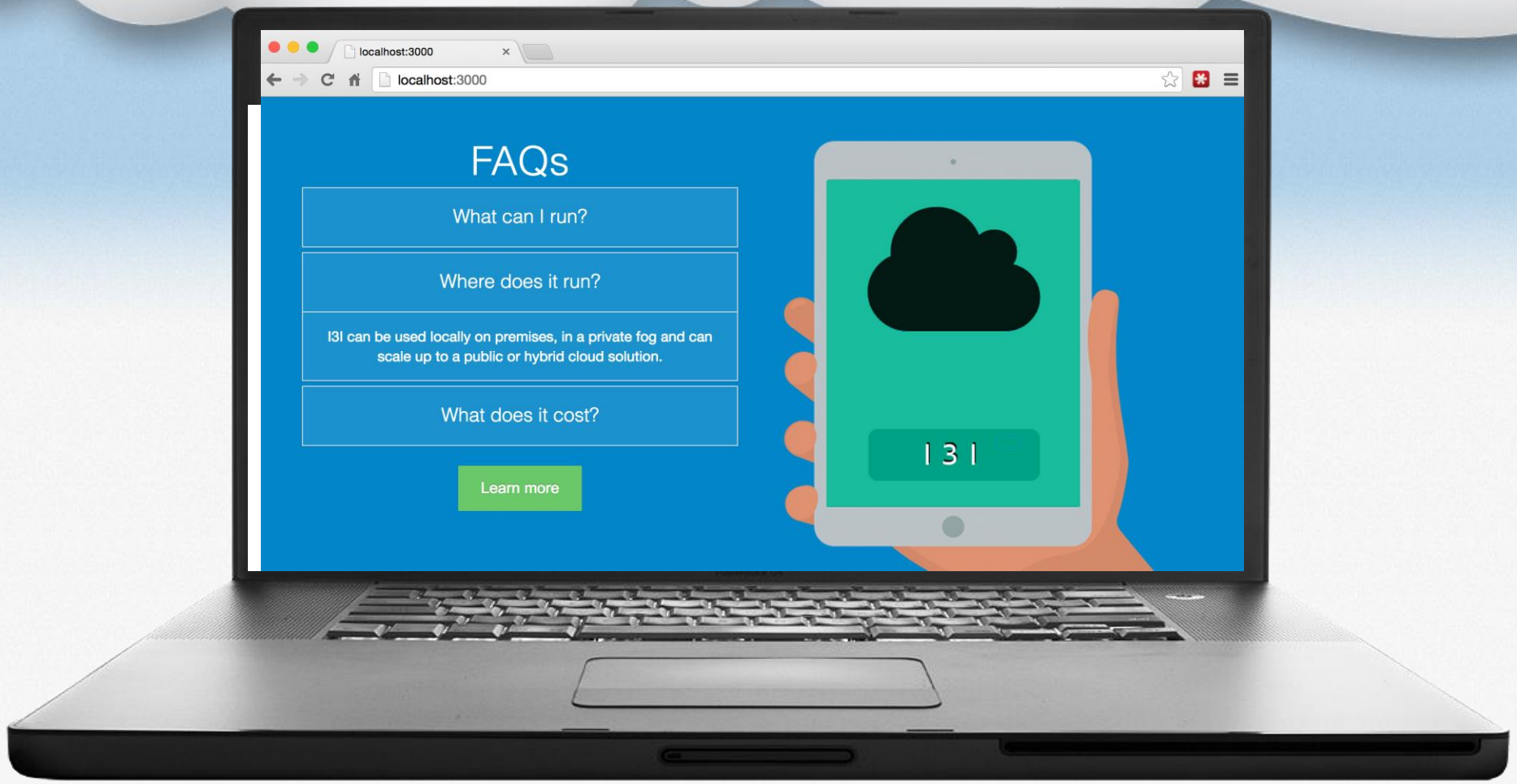
- What does it do?
- What does it depend on?
- How do I know it is working?



Architecture Evolved



I3I – Customer View

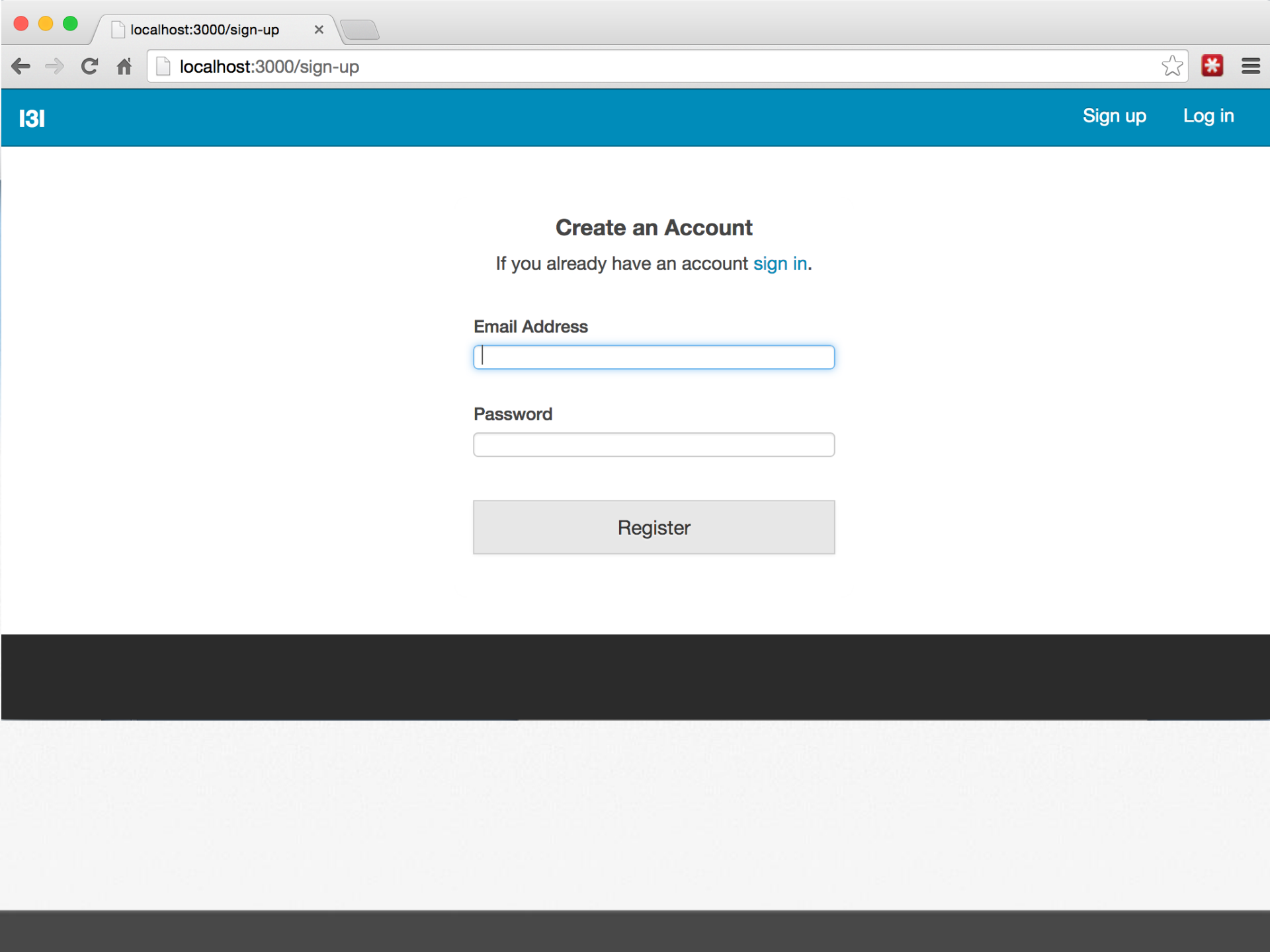


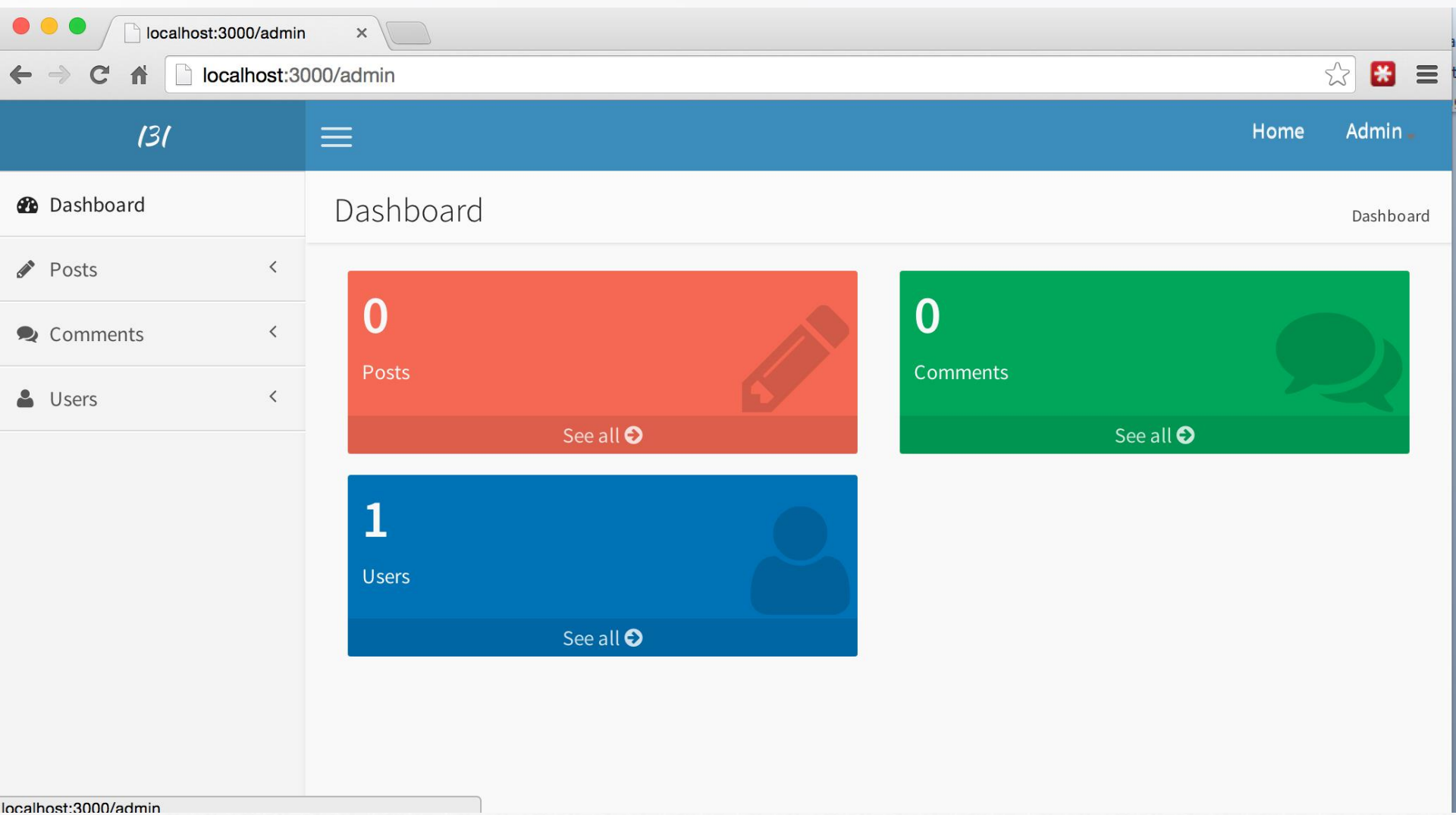
localhost:3000

localhost:3000

Your life will be instantly better.

Take a look


localhost:3000/sign-up
localhost:3000/sign-up
I3I
Sign up
Log in
Create an Account
If you already have an account sign in.
Email Address
Password
Register


localhost:3000/admin
localhost:3000/admin
131
Home
Admin
Dashboard
Posts
Comments
Users
Dashboard
Dashboard
0
Posts
See all
0
Comments
See all
1
Users
See all
localhost:3000/admin

Cloud Trends Uncovered

- You sell hardware you sell cloud,
  You buy hardware you buy cloud
- There are different classes of clouds
- Mult-instance over Multi-tenancy (security)
- IoT is driving cloud to endpoint integration
- The cloud has emerged as the future business platform