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OpenShift

From Origin to Enterprise



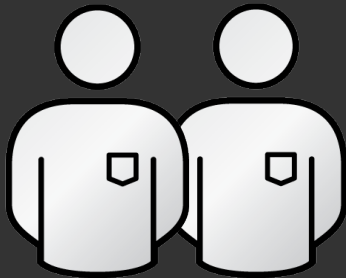
Steven Ellis
Solution Architect Red Hat NZ
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PRODUCTIVITY

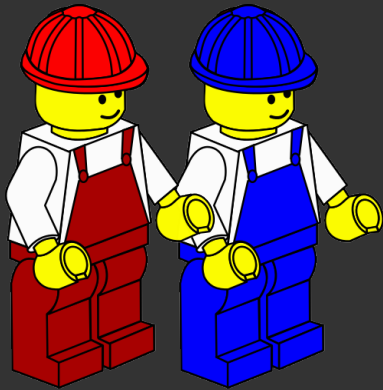




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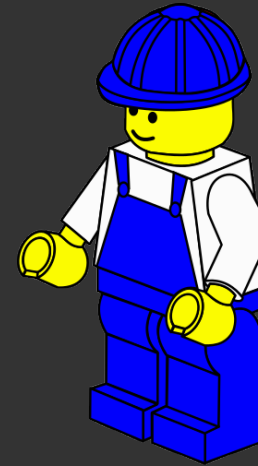
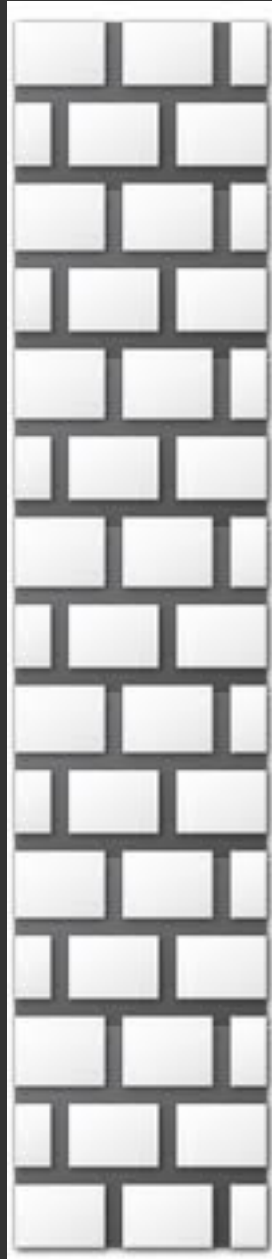


PRODUCTIVITY



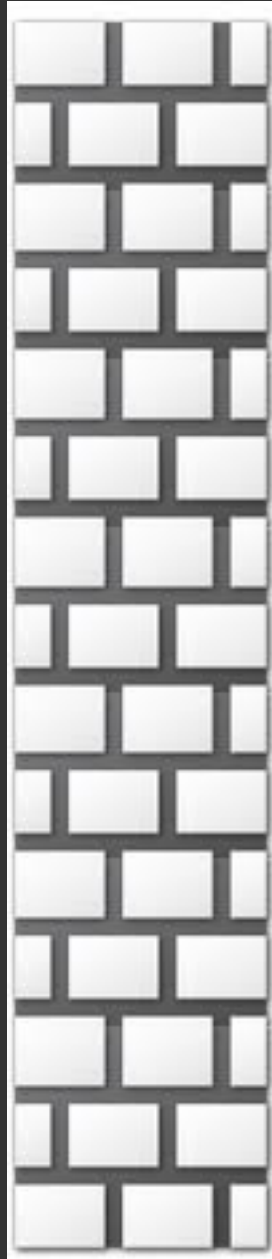
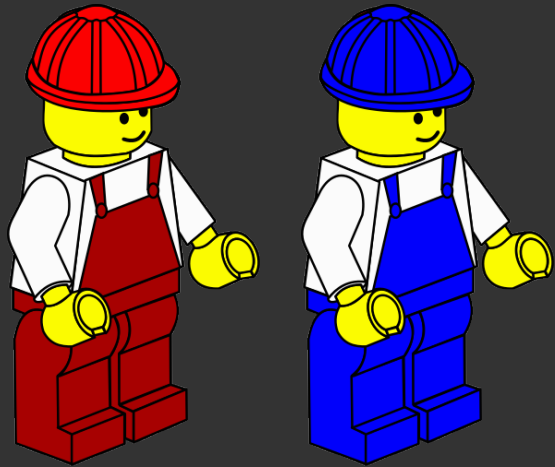


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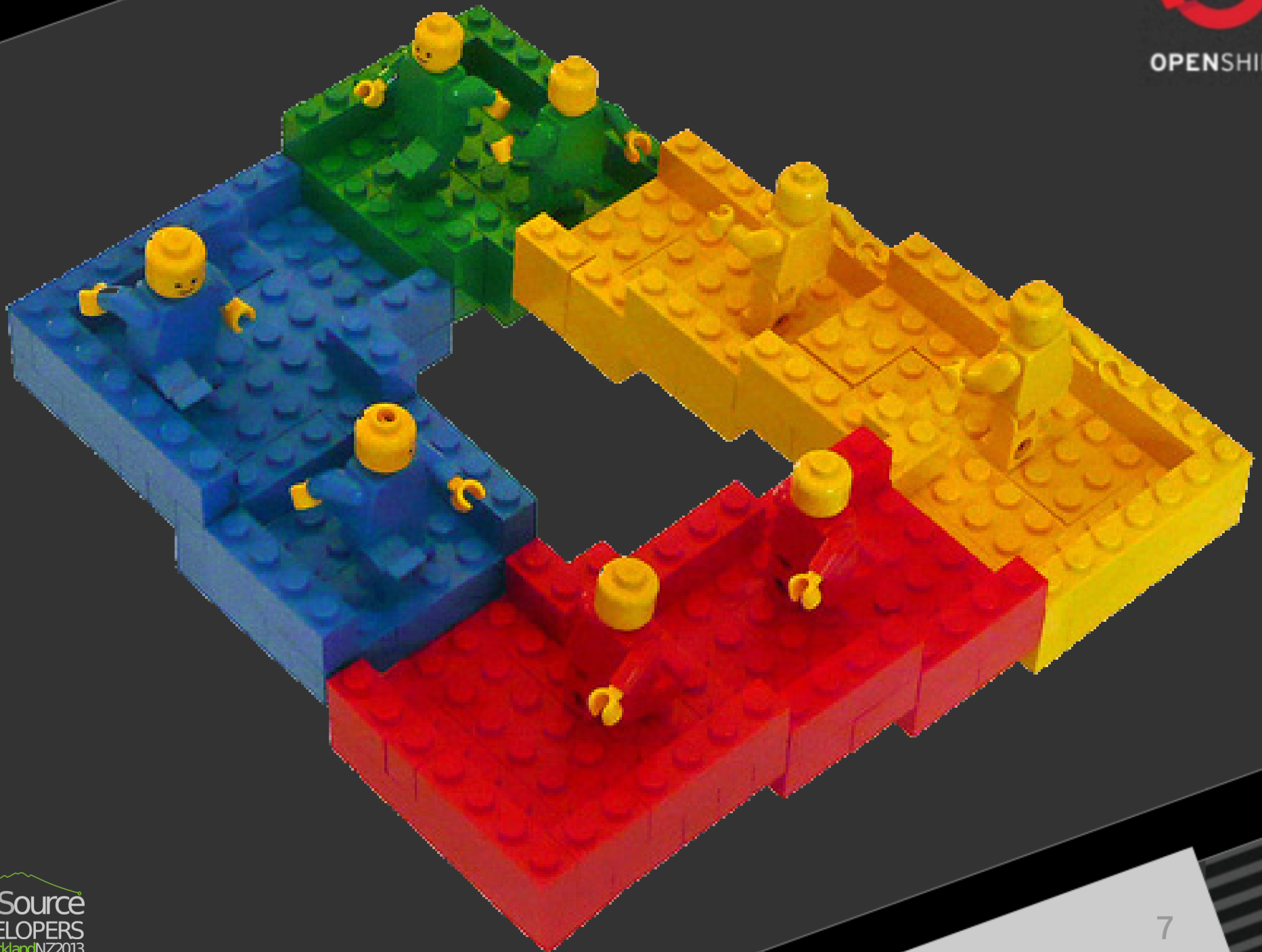


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PaaS = Platform as a Service



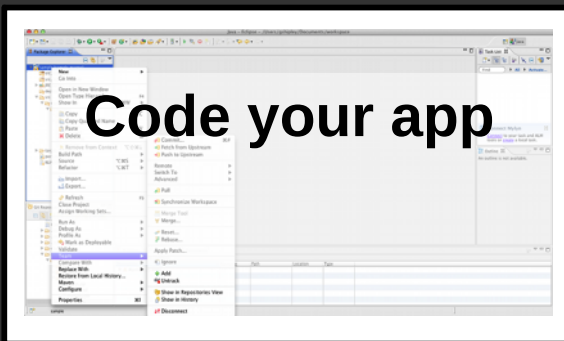
A Cloud Application Platform



Code

Deploy

Enjoy





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SaaS



YOUR APP

PaaS



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IaaS

THE CLOUD





Why OpenShift?

- Deliver apps quickly on your choice of platform
- Leverage the ease, scale and power of the Cloud
- Retain control over security, data locality, governance





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Open
Source
Project

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origin

Public
Cloud
Service

On-
premise or
Private
PaaS
Software

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So, how does OpenShift work?



AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



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OpenShift is built on instances of
Red Hat Enterprise Linux (RHEL)

RHEL

RHEL

RHEL

RHEL

AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



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Nodes are where user applications live.
Brokers manage OpenShift **nodes**.

RHEL

Brokers

RHEL

Node

RHEL

Node

RHEL

Node

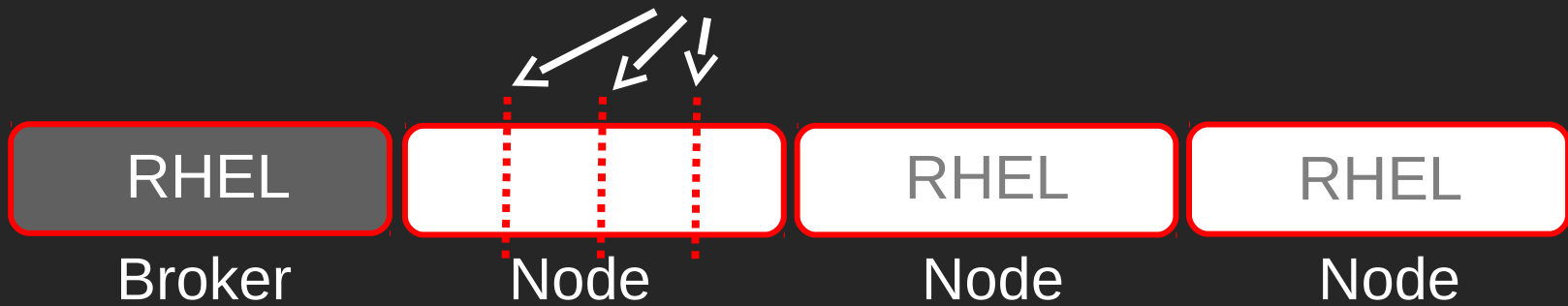
AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



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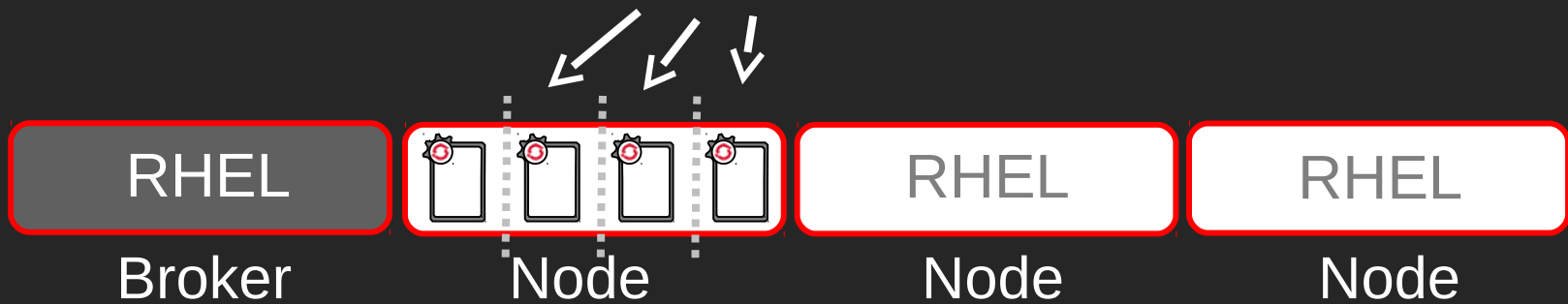
SELinux Policies securely subdivide the **node** instances.



AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



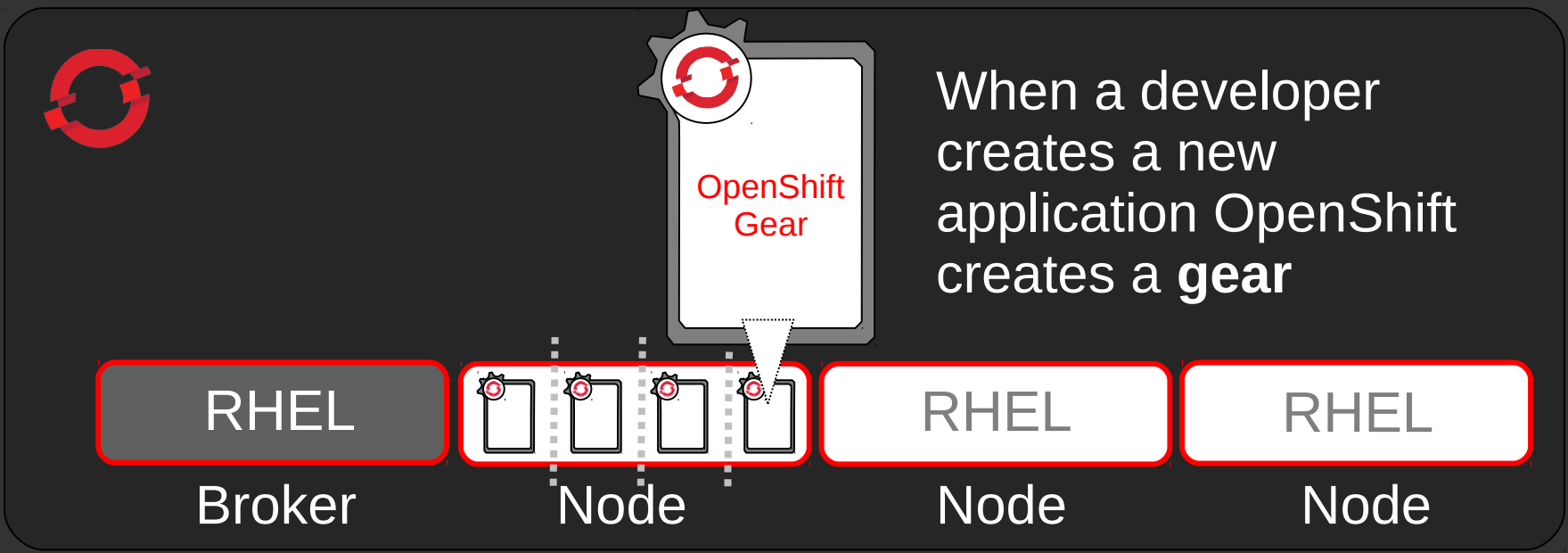
OpenShift **gears** represent secure containers in RHEL



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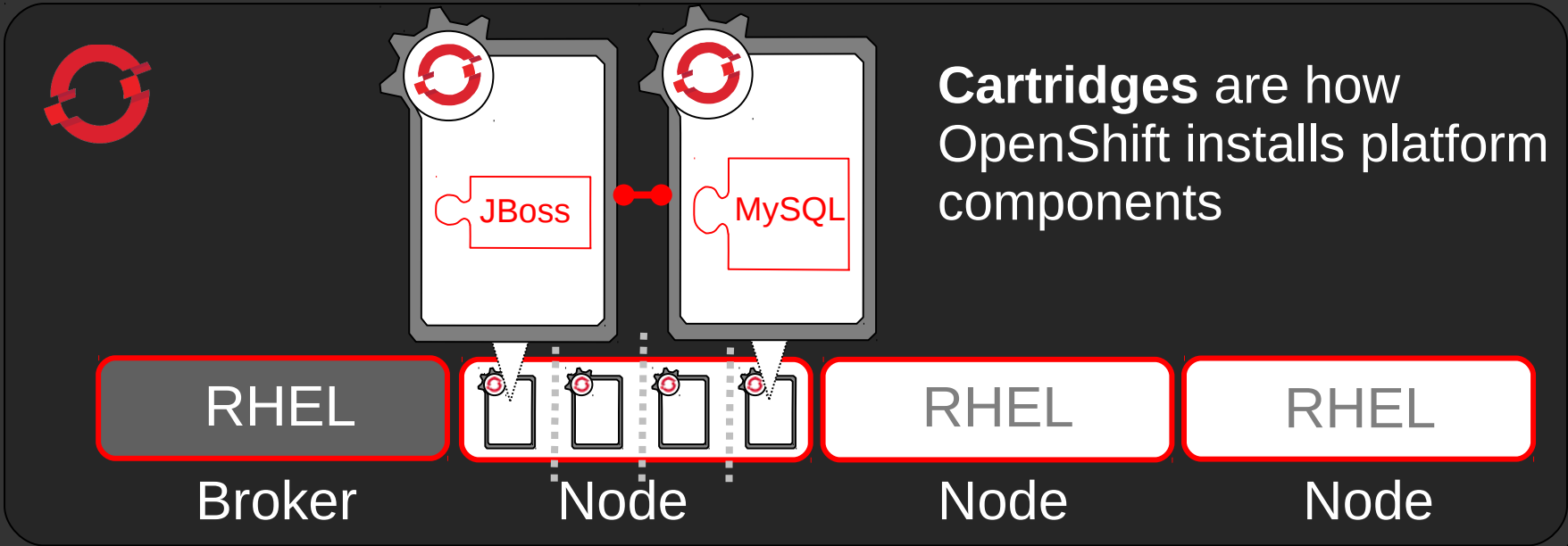
Web Console
Eclipse IDE
Command Line



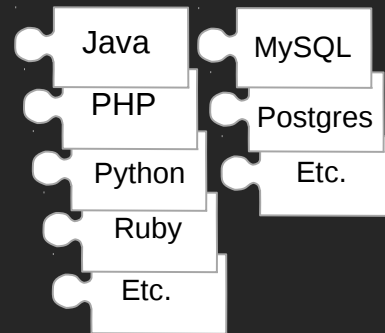
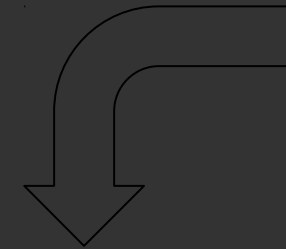
AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



Web Console
Eclipse IDE
Command Line



AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal

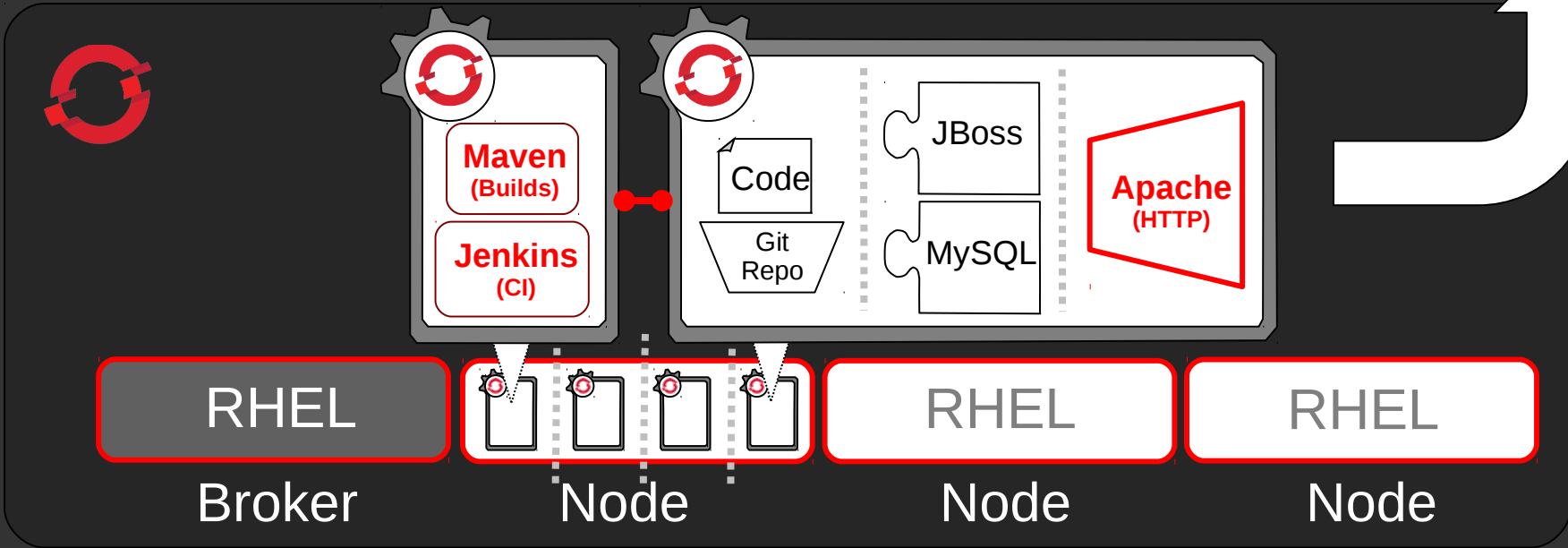
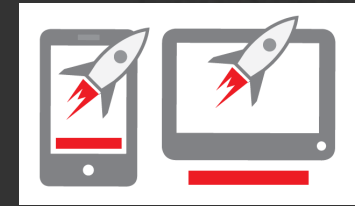


OpenShift default cartridges

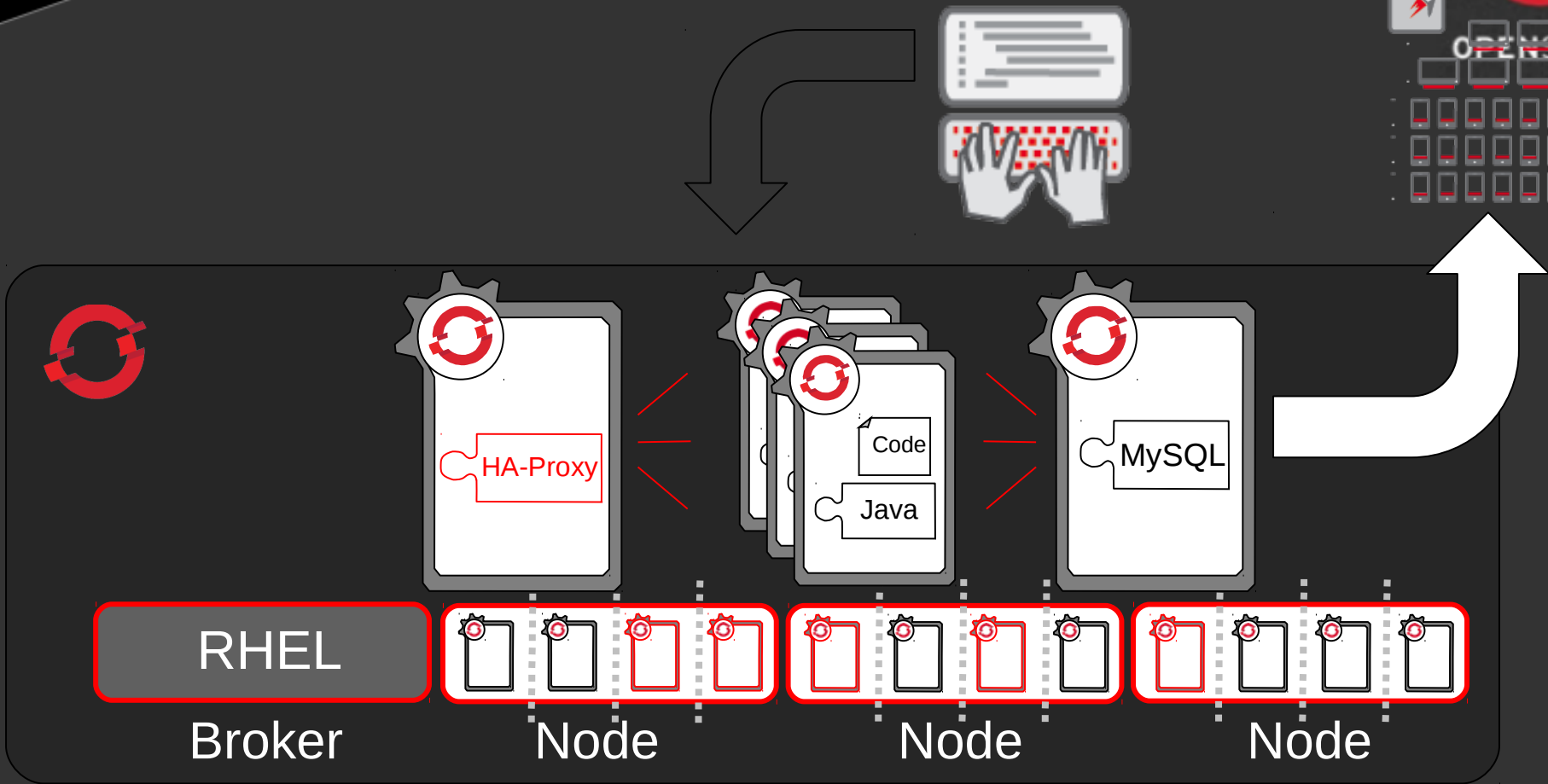


Developers can add additional platform components with a **custom cartridge**.

AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



AWS / CloudForms / OpenStack (IaaS) / RHEV (Virt) / Bare Metal



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origin



Broker

Node

Fedora

KVM / VMware / VirtualBox / Bare Metal



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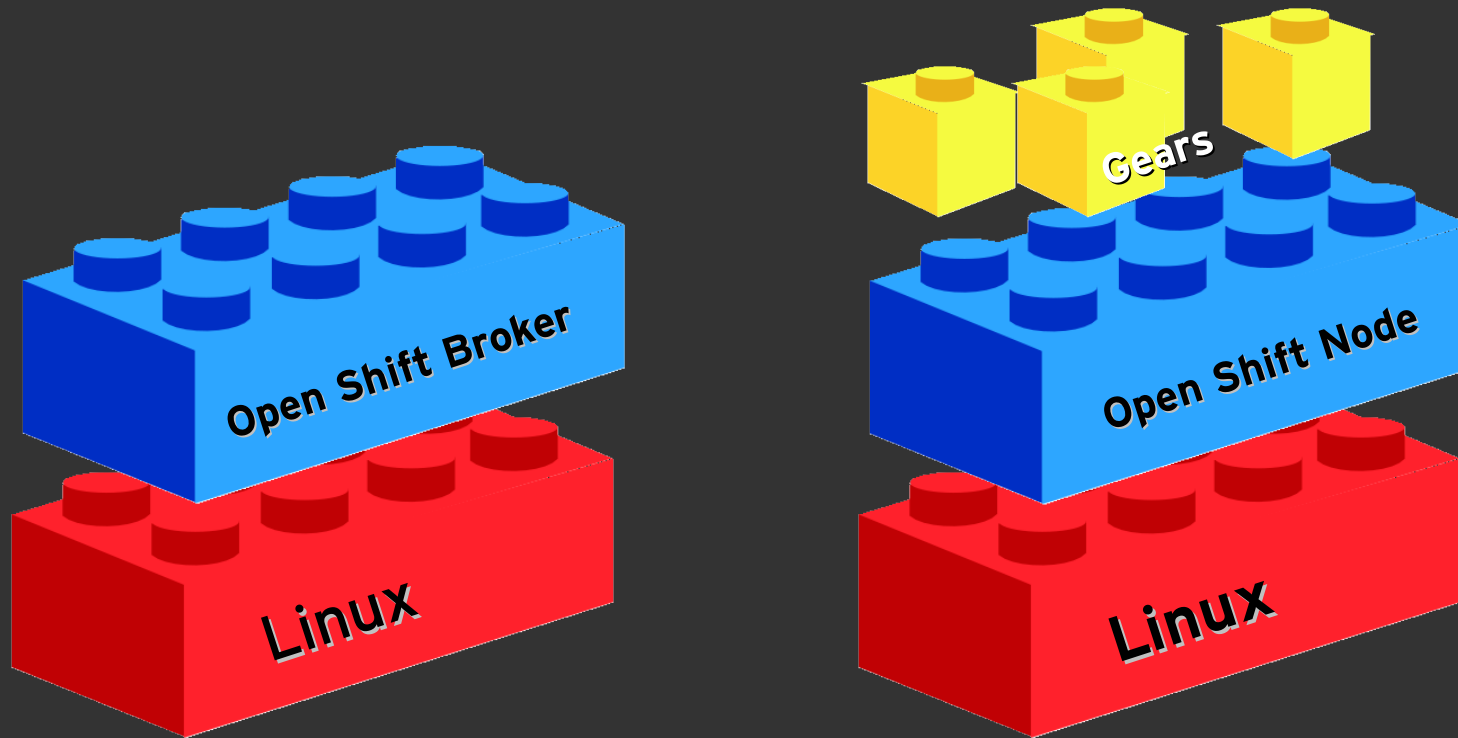
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Technology



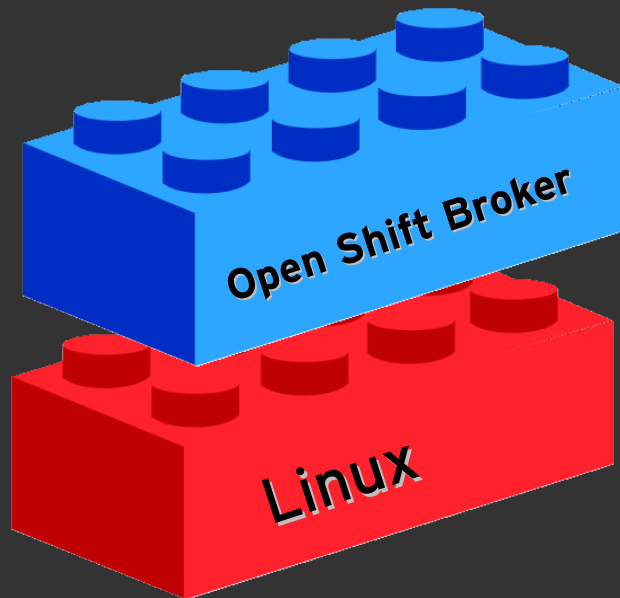
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Sample Environment





Broker Components



DNS Named / Bind

Datastore – MongoDB

Messaging – ActiveMQ

Orchestration - MCollective

Broker

Client Tools – RHC

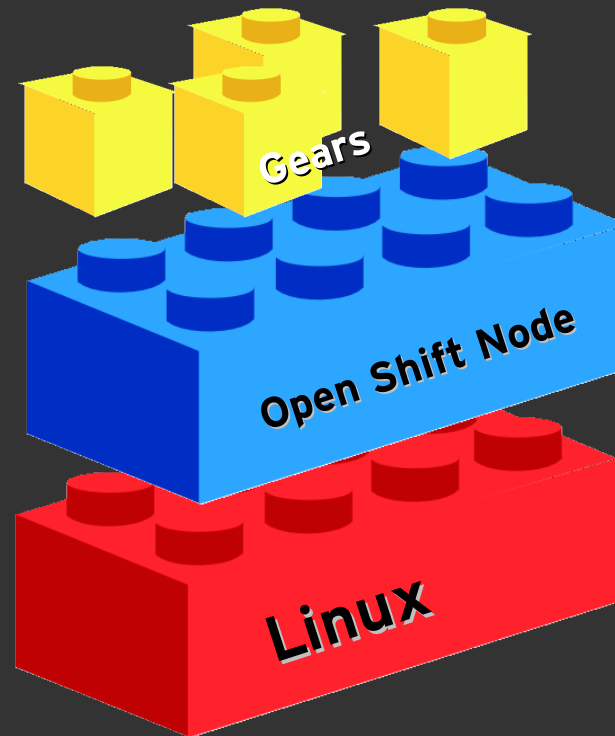
SELinux Policy



Node Components



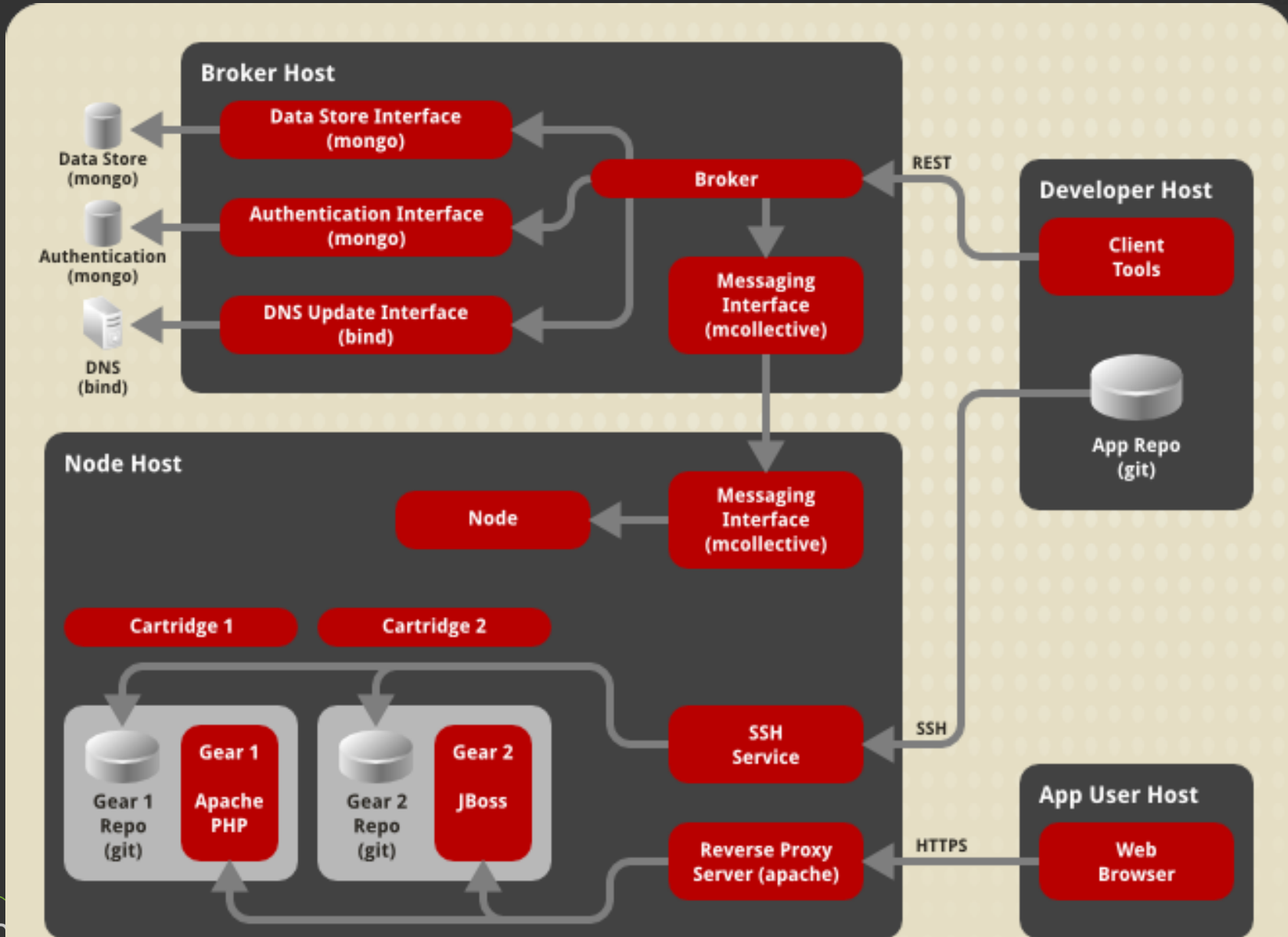
- MCollective
- Node
 - Apache
- Cartridges
- Configuration
 - Pam
 - Cgroups
 - Quotas
 - SeLinux Policy





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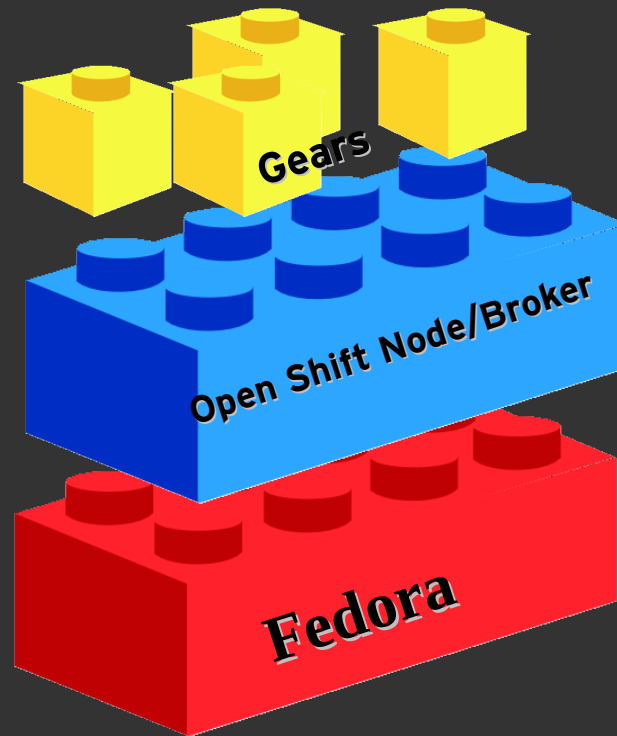
Architecture Overview





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OpenShift Origin





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Hands On



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Roadmap




OpenShift CY2013 Release Roadmap



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- Redundant Web Routing for HA
- Pluggable External Routers
- Updated Cartridges (Ruby, Python, PostgreSQL)
- New Node.js Cartridge
- Binary Deploy Enhanced, No Downtime Deploy
- User-Defined Environment Variables
- PaaS Administrator Console (v1)
- Team Collaboration/Access Control (v1)
- Easier Installation/Config Scripts
- OpenStack Integration (Heat)

2.0



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Enterprise

Online

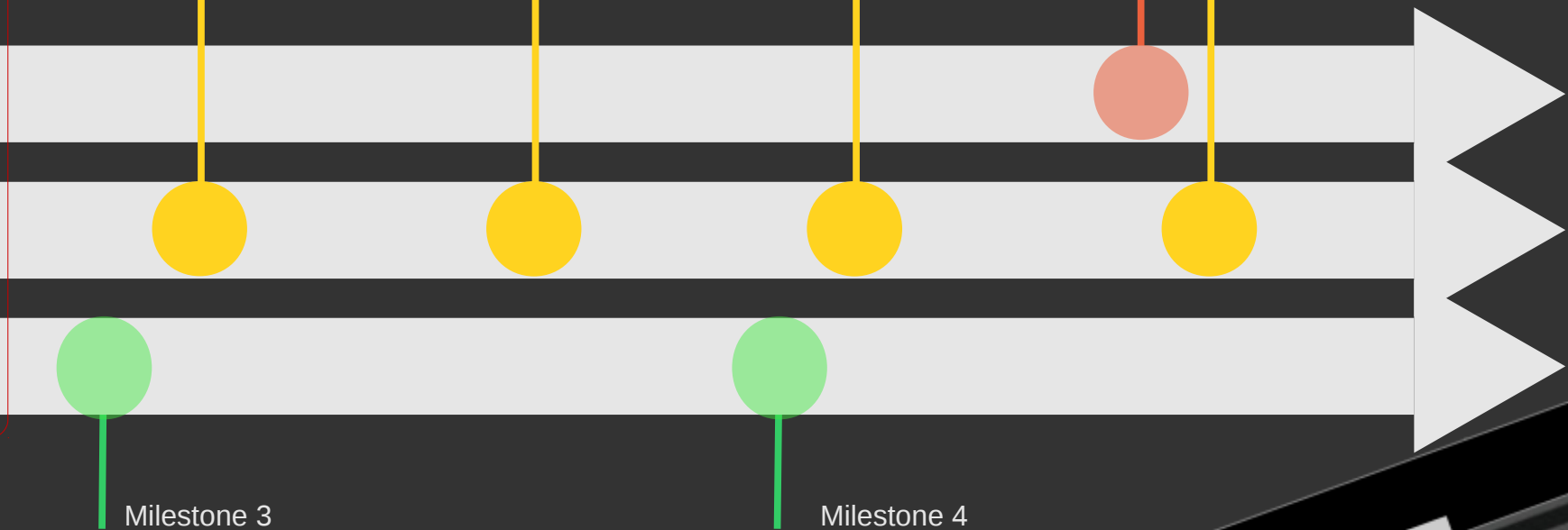
Origin

- User-Defined Env Vars
- PostgreSQL 9.2
- Python 2.7
- JBoss Performance Boost

- Ruby 1.9
- Node.JS 0.10
- Team Collab./ACL

- Binary Deploy Enhan.
- Easier 3rd Party Integ.

- Tech Preview Larger Gear
- Silver in More Geos
- Self Service Additions



Milestone 3

Milestone 4

August September October November December



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<http://openshift.redhat.com>



Image Credits



- Lego Pile of Bricks

<http://info.servertech.com/blog/bid/129599/Fun-Friday-Lego-Data-Center>

- Lego people and blocks

By OCAL @ <http://www.clker.com>

- Rocket

<http://nattyknitter.files.wordpress.com/2012/06/lego4.jpg>



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