

# 오픈 클라우드 엔진: Docker와 Mesos를 기반한 클라우드 플랫폼

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# PaaS가 해주길 기대하는 것들



\* 출처: IBM

# PaaS의 유형들

- Application PaaS: OSS서비스에 집중  
e.g. 클라우드 파운드리, 오픈시프트
- Business PaaS: BSS on OSS (OSS+BSS)  
e.g. 포스닷컴, IBM SmartCloud, GAE, OCE
- Monetization PaaS: BSS + 소비자분석  
e.g. Zuora, Aria Systems

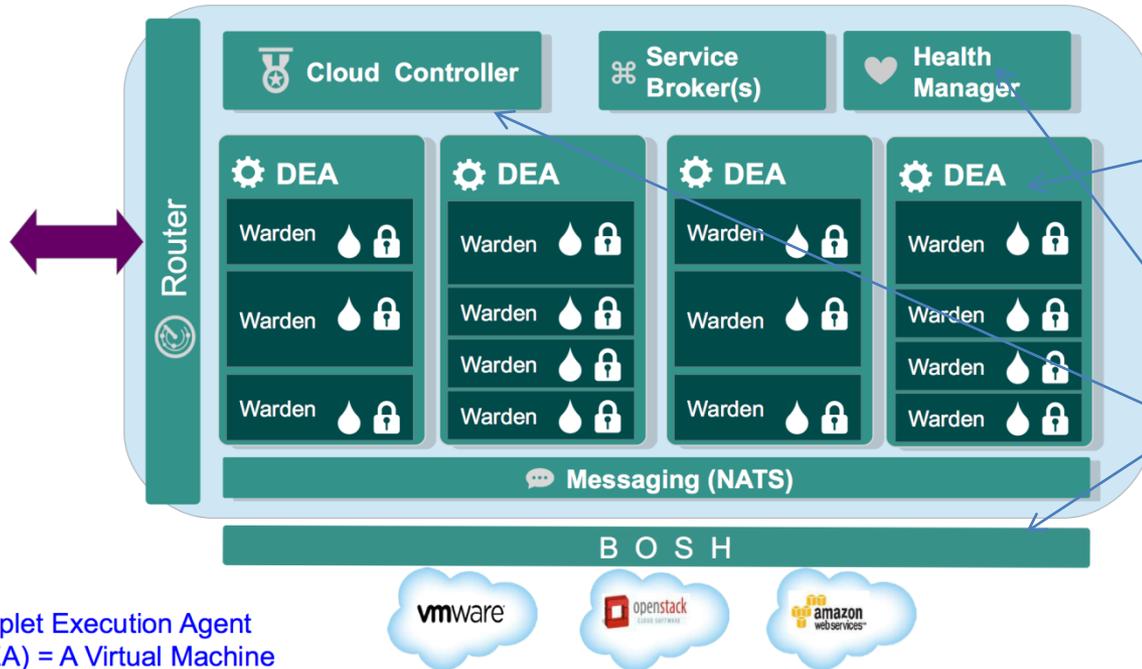


# 클라우드 파운드리

- 바이두
  - Heroku
  - IBM Bluemix
  - Intalio
- 
- 실습: [run.pivotal.io](https://run.pivotal.io)



# CF Features & Architecture



## FEATURES

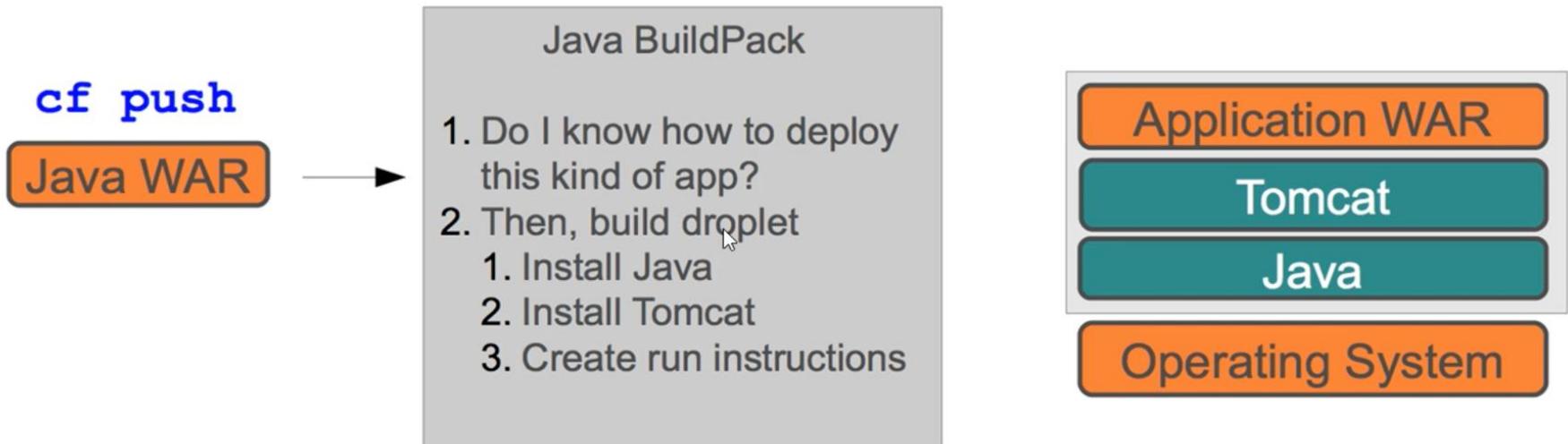
- Application Development
  - Development Spaces
  - Log aggregation
- Application Hosting
  - Infra hiding
- Business Continuity
- Scale in/out

Droplet Execution Agent (DEA) = A Virtual Machine



# Application Packaging

- **Buildpacks** define how assemble a droplet to run a specific kind of application
- Example:



- The Buildpack “builds” the “droplet” to run an app.
  - Called *staging* the application



# A BPaaS: Force.com

Salesforce apps

Sales Cloud<sup>2</sup>

Service Cloud<sup>2</sup>

Custom Cloud<sup>2</sup>

chatter  
Collaboration Cloud

Chatter social platform



Profiles



Status Updates



Groups



Feeds



Social Content



Social Apps



Security and Sharing Model



Chatter API's



Google



facebook

twitter

Social

Force.com development platform



Unlimited Real-Time Customization



Knowledge



Programmable Cloud Logic



Real-Time Workflow & Approvals



Programmable User Interface



Real-Time Mobile Deployment



Real-Time Web Sites



Integrated Content Library



Real-Time Analytics



800+ Integrated Applications

Force.com infrastructure



ISO 27001 Certified Security

>99%

Proven Reliability



Proven Real-Time Scalability

<300ms

Real-Time Query Optimizer



Real-Time Upgrades

>100 million API calls/day

Proven Real-Time Integration



Real-Time Sandbox Environments



Salesforce to Salesforce



3 Global Data Centers & Disaster Recovery

trust

Real-Time Transparent System Status



Multitenant Kernel



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# Google App Marketplace

- 기업용 g-mail 계정을 통한 도메인별 테넌트 계정을 기반으로 다양한 google business app과 third-party app 들을 지속적으로 제공

마켓플레이스 구매

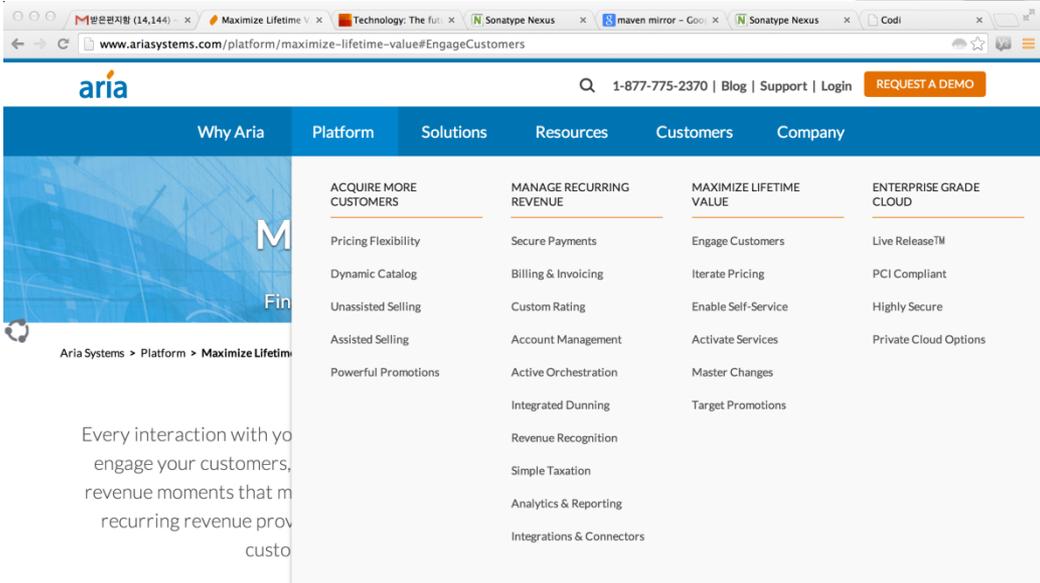
앱론처에 추가

사용자 권한 및 연동 정보 승인

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# Aria Systems : full-cycle monetization platform

- Customer acquisition
- Service activation
- Usage tracking/rating
- Invoicing (including Calculation, Presentment, Collection, Remittance, Reconciliation)
- Customer management
- Reporting



The screenshot shows the Aria Systems website interface. The top navigation bar includes the Aria logo, a search icon, the phone number 1-877-775-2370, and links for Blog, Support, and Login. A prominent orange button labeled "REQUEST A DEMO" is located in the top right corner. Below the navigation bar is a main menu with categories: Why Aria, Platform, Solutions, Resources, Customers, and Company. The main content area features a grid of service categories with sub-items:

Platform	Solutions	Resources	Customers	Company
ACQUIRE MORE CUSTOMERS	MANAGE RECURRING REVENUE	MAXIMIZE LIFETIME VALUE	ENTERPRISE GRADE CLOUD	
Pricing Flexibility	Secure Payments	Engage Customers	Live Release™	
Dynamic Catalog	Billing & Invoicing	Iterate Pricing	PCI Compliant	
Unassisted Selling	Custom Rating	Enable Self-Service	Highly Secure	
Assisted Selling	Account Management	Activate Services	Private Cloud Options	
Powerful Promotions	Active Orchestration	Master Changes		
	Integrated Dunning	Target Promotions		
	Revenue Recognition			
	Simple Taxation			
	Analytics & Reporting			
	Integrations & Connectors			

Below the grid, there is a breadcrumb trail: "Aria Systems > Platform > Maximize Lifetime Value". A large heading "Maximize Lifetime Value" is partially visible, followed by a paragraph: "Every interaction with you engage your customers, revenue moments that maximize recurring revenue provide custo".



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# Aria: a plan has services and rates

**Service and Rates**

**Services**

Search Services

All Services Monthly Seat Licenses

Early Termination Charge  
Hardware  
Meeting Pack  
Monthly Seat Licenses  
Monthly Training Subscription  
Platinum Support

Drag and drop Services for this plan here.

**Service Settings: Monthly Seat Licenses**

Service Name	Min. Quantity	Max. Quantity	Price
Monthly Seat Licenses	1	10	10
	11		8

Add tier

pricing too if you'd like. Here, after the first 10 seats, a volume discount is applied.

# Aria Solution

The screenshot displays the Aria Platform dashboard interface. The browser address bar shows the URL <https://secure.future.stage.ariasystems.net/ui/app.php/>. The dashboard features a left-hand navigation menu with categories: Analytics and Reporting, Accounts, Products, Marketing, Storefront, and Configuration. The main content area is titled "Workbook: Doug Hamm's Workbook" and contains an "Analytic Dashboard" section. This section includes a "Select a View" dropdown menu set to "Sales Manager" and a "Set As Default" button. Two charts are visible: "Revenue Over Time" (a line chart) and "Monthly Revenue by Service Type" (a 3D bar chart). A legend for the bar chart lists service types: per Month Fee, Monthly Seat Licenses, Canopy Product2, Annual Seat Licenses, Service Activation, Toll-Free, and Platinum Support.

Month	Revenue (K)
2012-05	1200.8K
2012-06	133.7K
2012-07	192.5K
2012-08	43.3K

Month	per Month Fee	Monthly Seat Licenses	Canopy Product2	Annual Seat Licenses	Service Activation	Toll-Free	Platinum Support
2012-06	~10K	~20K	~30K	~40K	~50K	~60K	~70K
2012-07	~10K	~20K	~30K	~40K	~50K	~60K	~70K

**Starting within the Aria Platform dashboard, first click on products, then click on Quick**

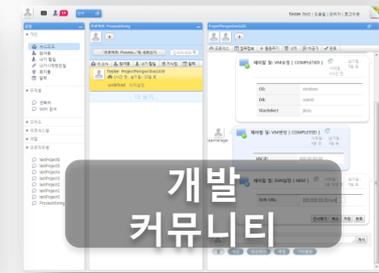
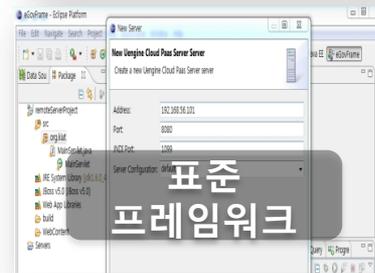
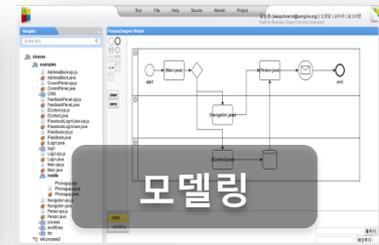
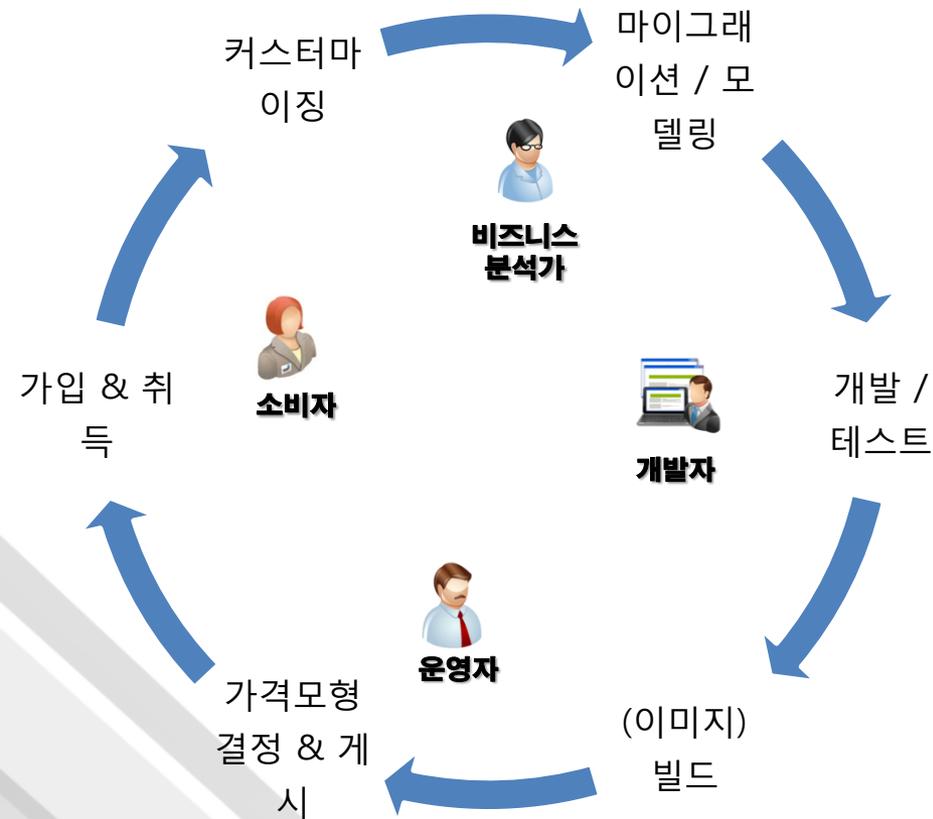
# OCE Garuda

- Has own OSS – OSGi-based, good for Java
- Tools for provider – Provider Portal, Cloud IDE and Process Modeler
- Multi-tenant support & Subscription management
- Recently, metering / billing module has been added.



# SaaS Application Lifecycle Management

제공자-운영자-소비자가 참여하여 개발~앱스토어까지의 생태계 사이클을 참여자가 IaaS의 직접적인 핸들링 없이 지원



# 클라우드 마이그레이터

레가시 시스템의 DB 카탈로그

DAO CRUD 리버싱

Model Access

Database Type: ORACLE

Driver:

URL: legacy.mycom.com:330

UserName: sa

Password: \*\*\*\*

Common Configuration

Root Package:

Package

Entities starting with goes to Package

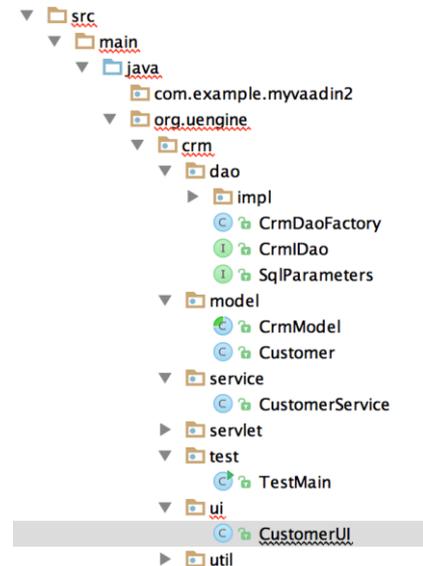
Add Package Remove Package

Choose Target

JPA2

Generate

DAO, Web Service, UI까지 생성함  
(minuteProject 사용)



# 클라우드 IDE

The screenshot displays a cloud IDE interface with the following components:

- Browser:** Shows the URL `localhost:8080/#`.
- File Navigator:** Displays a project structure for `myFirstApp` with folders like `src`, `main`, `java`, `com.example.myvaadin2`, `org.uengine`, `crm`, `dao`, `model`, `service`, `servlet`, `test`, `ui`, and `util`.
- Code Editor:** Shows the `CustomerUI.java` file with the following code:

```
package org.uengine.crm.ui;

import ...

/*
 * UI class is the starting point for your app. You may deploy it with VaadinServlet
 * or VaadinPortlet by giving your UI class name a parameter. When you browse to your
 * app a web page showing your UI is automatically generated. Or you may choose to
 * embed your UI to an existing web page.
 */
@Title("CRM Web Application")
public class CustomerUI extends UI {

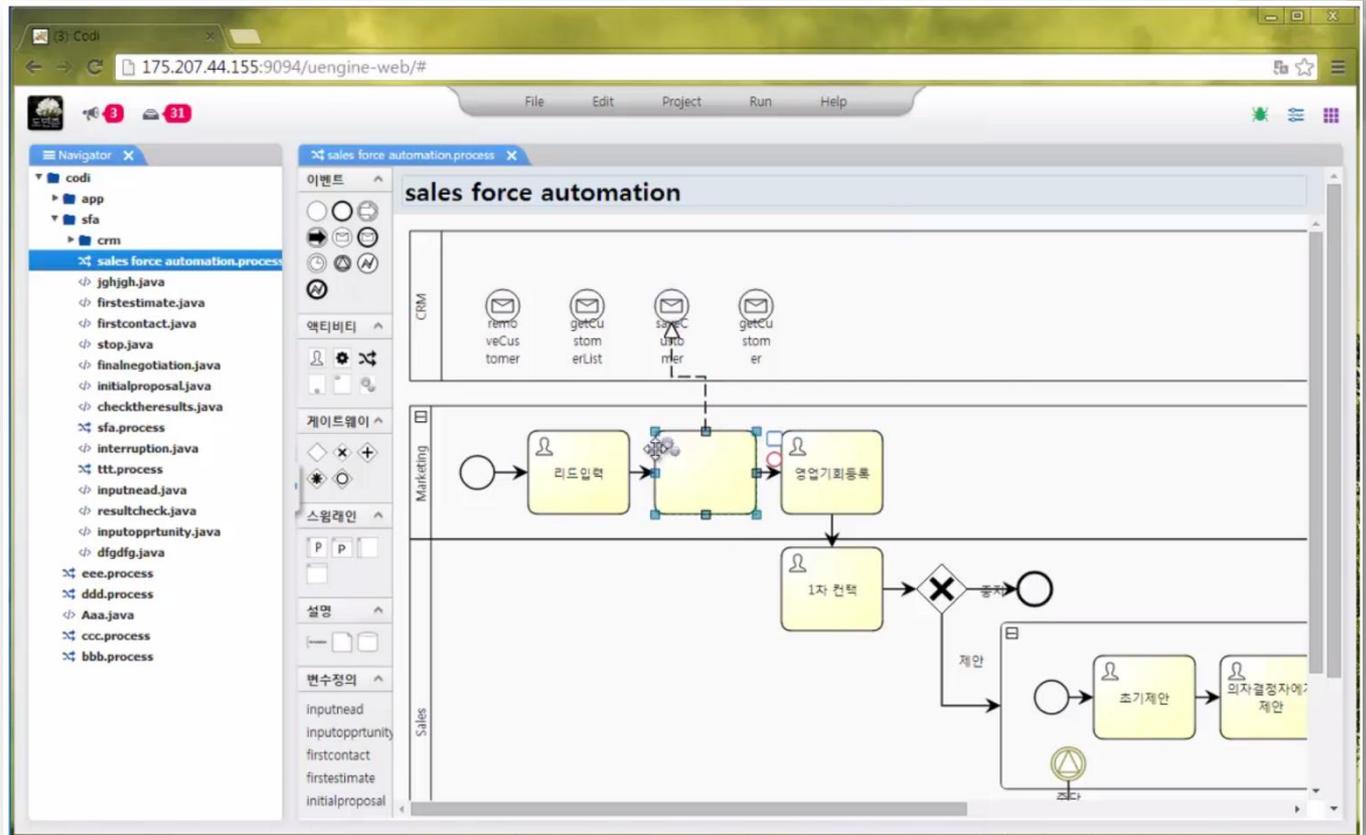
    private CustomerService customerService;
    private Customer selectedCustomer;

    /* User interface components are stored in session. */
    private Table contactList = new Table();
}
```
- Build Console:** Shows the output of a Maven build process:

```
Build
[INFO] BUILD SUCCESS
[INFO] Total time: 8.420s
[INFO] Finished at: Mon Jan 19 06:06:48 KST 2015
[INFO] Final Memory: 12M/132M
[INFO] Process finished with exit code 0
```

# 비즈니스 프로세스 관리

- ✓ 업무 전문가를 위한 실행가능 프로세스 언어 - BPMN
- ✓ GUI기반 비즈니스 룰 정의
- ✓ 웹서비스 통합 (\*CSB)
- ✓ 비즈니스 폼
- ✓ 데이터 매핑
  - DB 쿼리 자동화
  - SQL 틀



# 가격 모형 관리 / 시뮬레이션

## Plan Settings

Plan Settings form showing configuration options for a service plan.

**Description:** Ideal for early-stage applications with smaller d

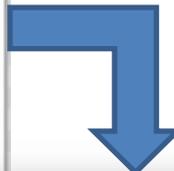
**BillingInterval:** Month

**OneTimeServiceAndRateList:**

- Service: Setup
- ContractDuration: Month
- Price: 0
- UnitOfMeasure: \$

**RecurringServiceAndRateList:**

- Service: Basic
- ContractDuration: Month
- Quota: 5
- Price: 0.5
- OveragePrice: 0
- UnitOfMeasure: \$



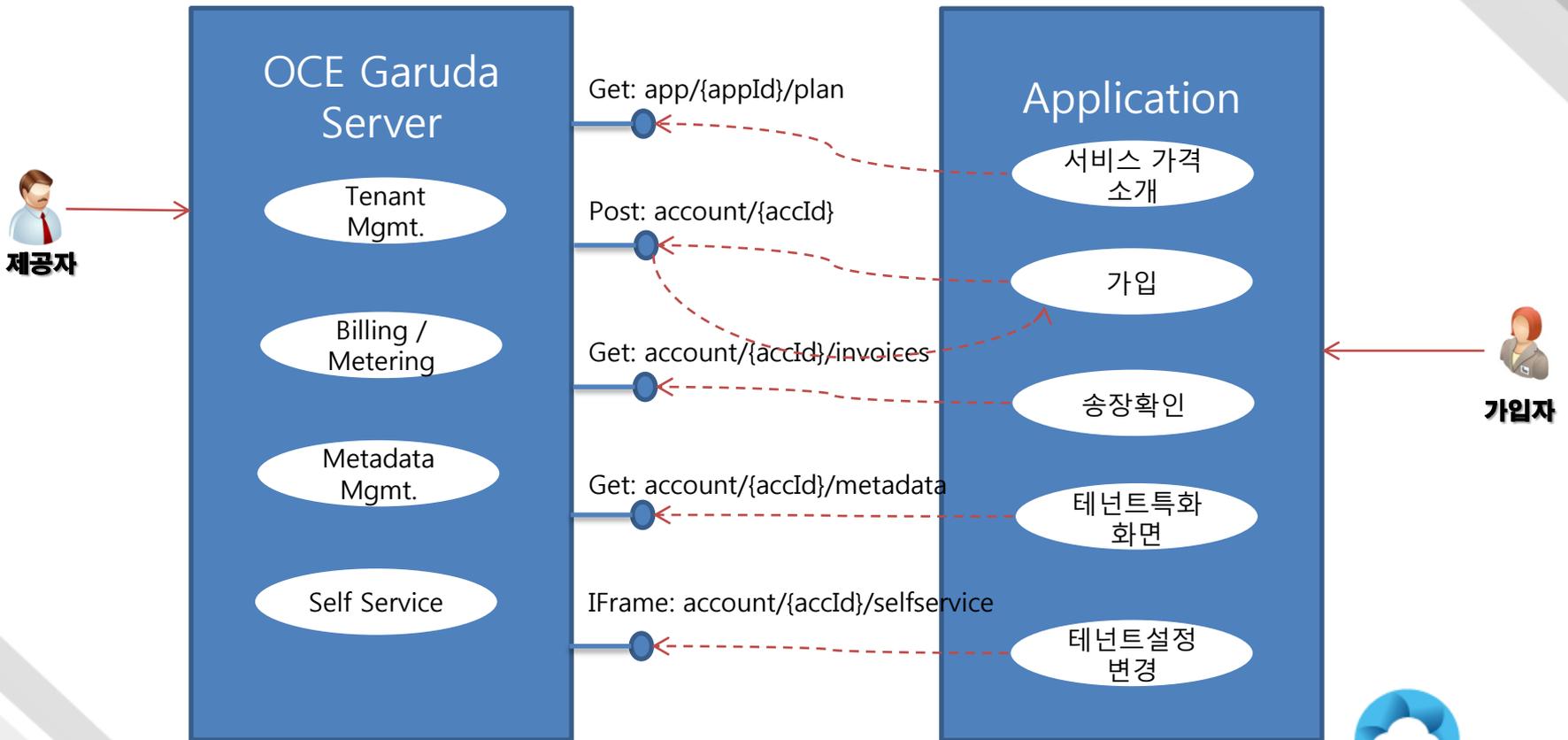
Sample Application Home Pricing Admin Login

### Welcome to Sample Application

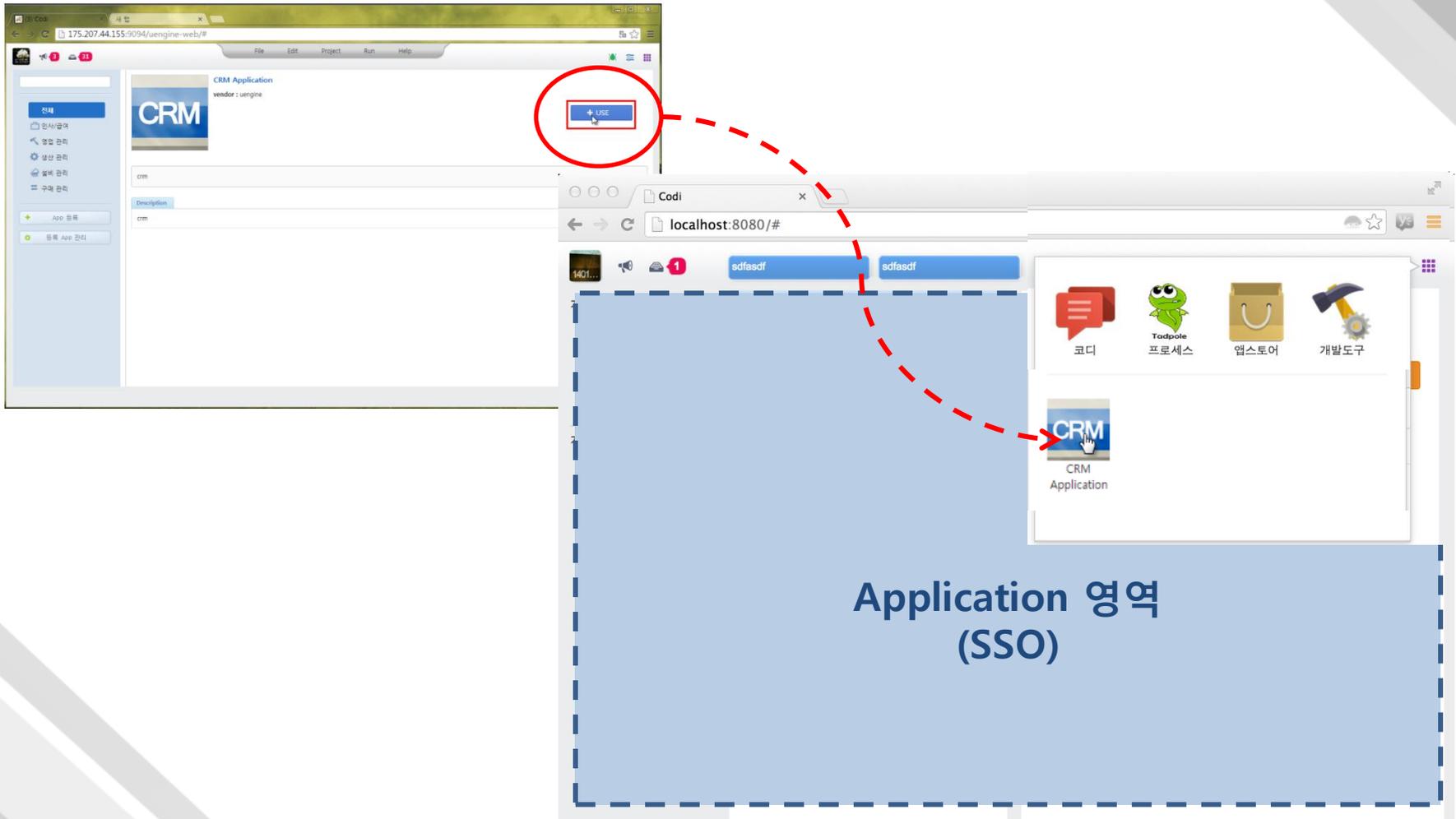
Sample Application helps cloud-centric organizations—organizations that build and manage cloud-facing applications—to solve operational problems faster. Our solution analyzes log data from virtually any application, system, or platform to answer your burning questions:

Standard	Enterprise
Ideal for early-stage applications with smaller data volumes. Starting at \$1/mo for 11GB/day 7-day retention	Ideal for advance-stage applications with large data volumes. Starting at \$1/mo for 1GB/day 7-day retention
<ul style="list-style-type: none"><li>Setting an application and provisioning - \$0.0 Once We provides setting an application and fast provisioning</li><li>Basic - \$0.5/month Calculate a minimum path price from one to another</li></ul>	<ul style="list-style-type: none"><li>Setting an application and provisioning - \$0.0 Once We provides setting an application and fast provisioning</li><li>Basic - \$1.0/month Calculate a minimum path price from one to another</li><li>Advance - \$0.2/call Calculate a minimum path price from one to many others</li></ul>
<a href="#">Subscribe</a>	<a href="#">Subscribe</a>

# 가입자 관리 / 멀티태넌시



# 마켓플레이스 / 앱 관리 / 앱 론처



# 2015 Roadmap for OCE Garuda

- Multi-platform support by **Docker** → Java, PHP, Windows!
- Single data center, multi-frameworks including Big Data, IoT using **Mesos**!
- **Monetization platform** – metering / billing / plan management (focus on BSS)
- Powerful Cloud IDE with **Eclipse Che**



# Roadmap 1: Docker

- "*Write once, Run anywhere*" - Docker is Java in the cloud world.
- Microsoft azure and Redhat's openshift decided to support and embed docker.
- So many PaaS open source projects are being developed: so many..



[Deis](#), [Flynn](#), [Tsuru](#), [Dawn](#) and [Octohost](#)



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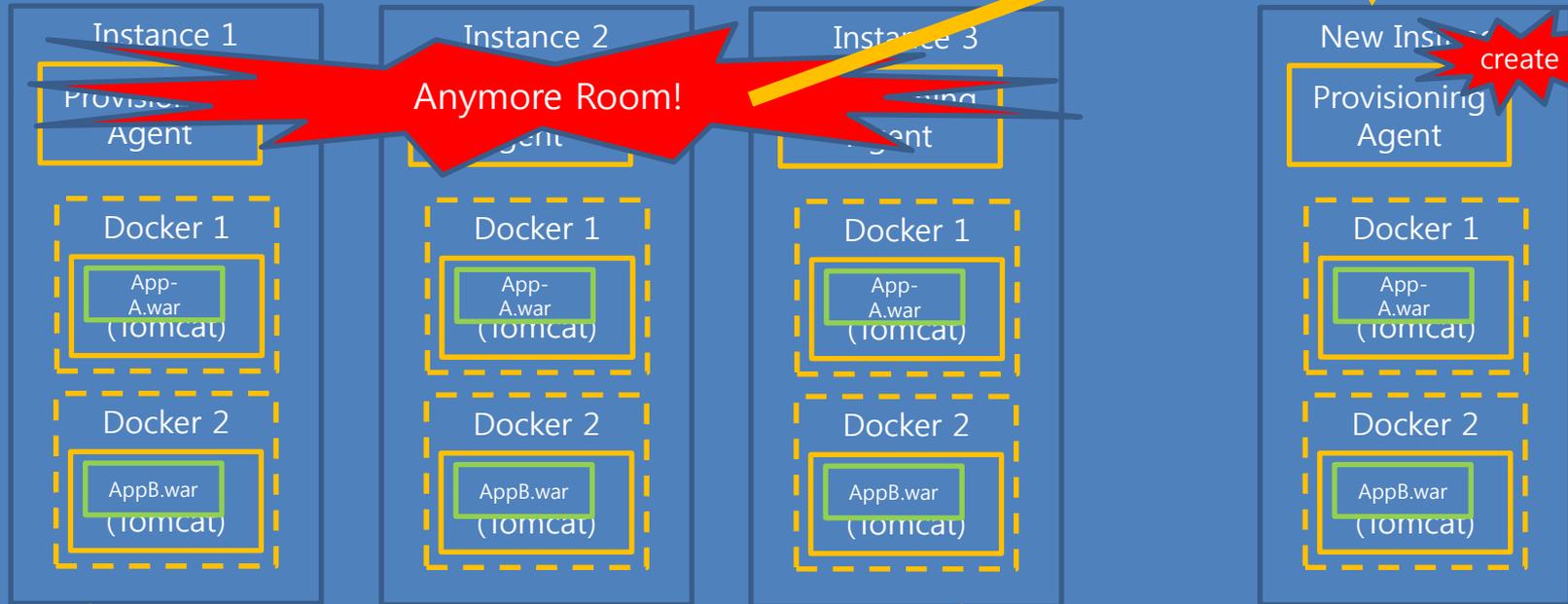
# Garuda 2015 – Docker based OSS

Bahama / Chef Server

Application Instance Zone

Router (HA Proxy)

Cloud Controller



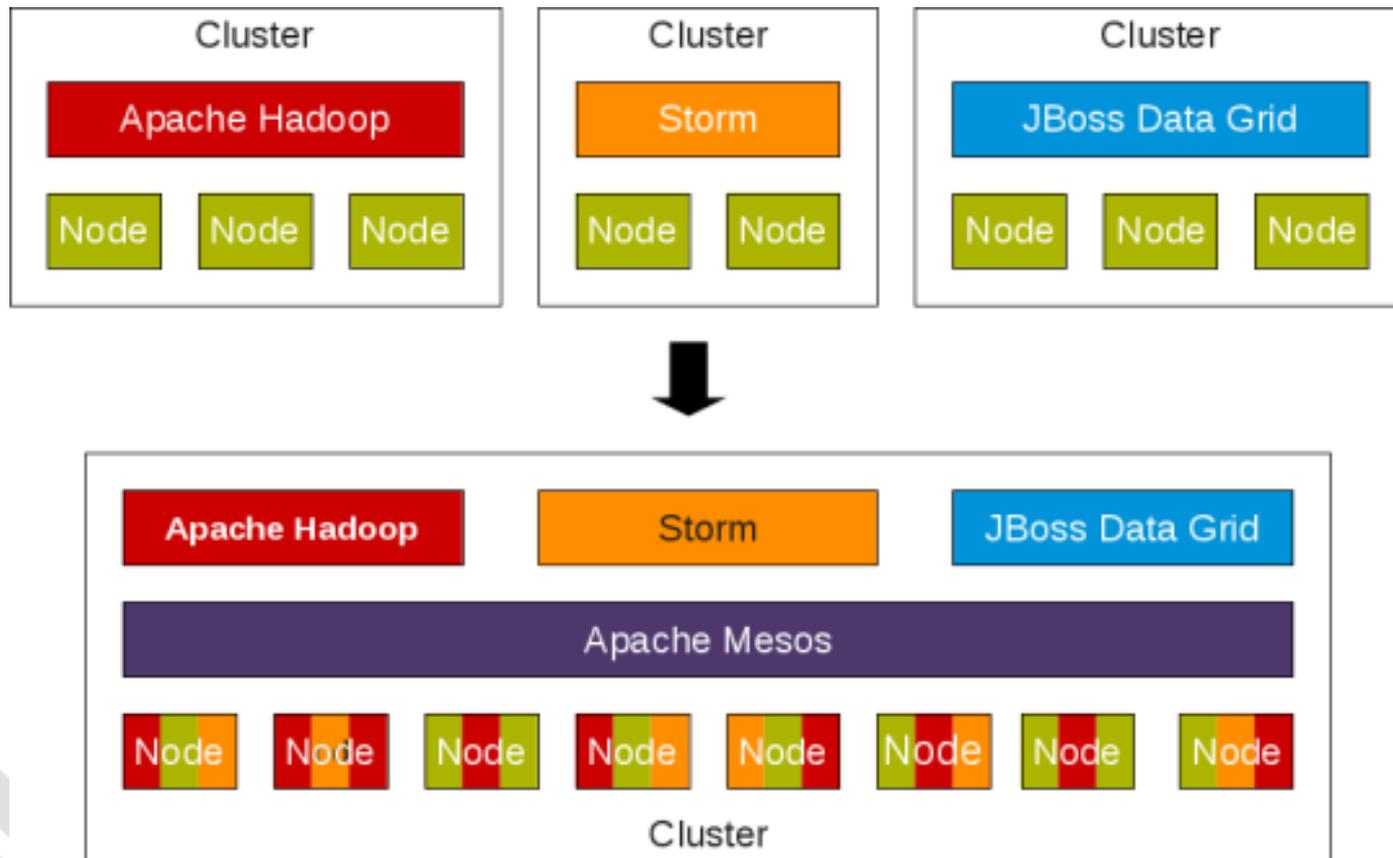
Min # of instance

MQ

Max # of instance

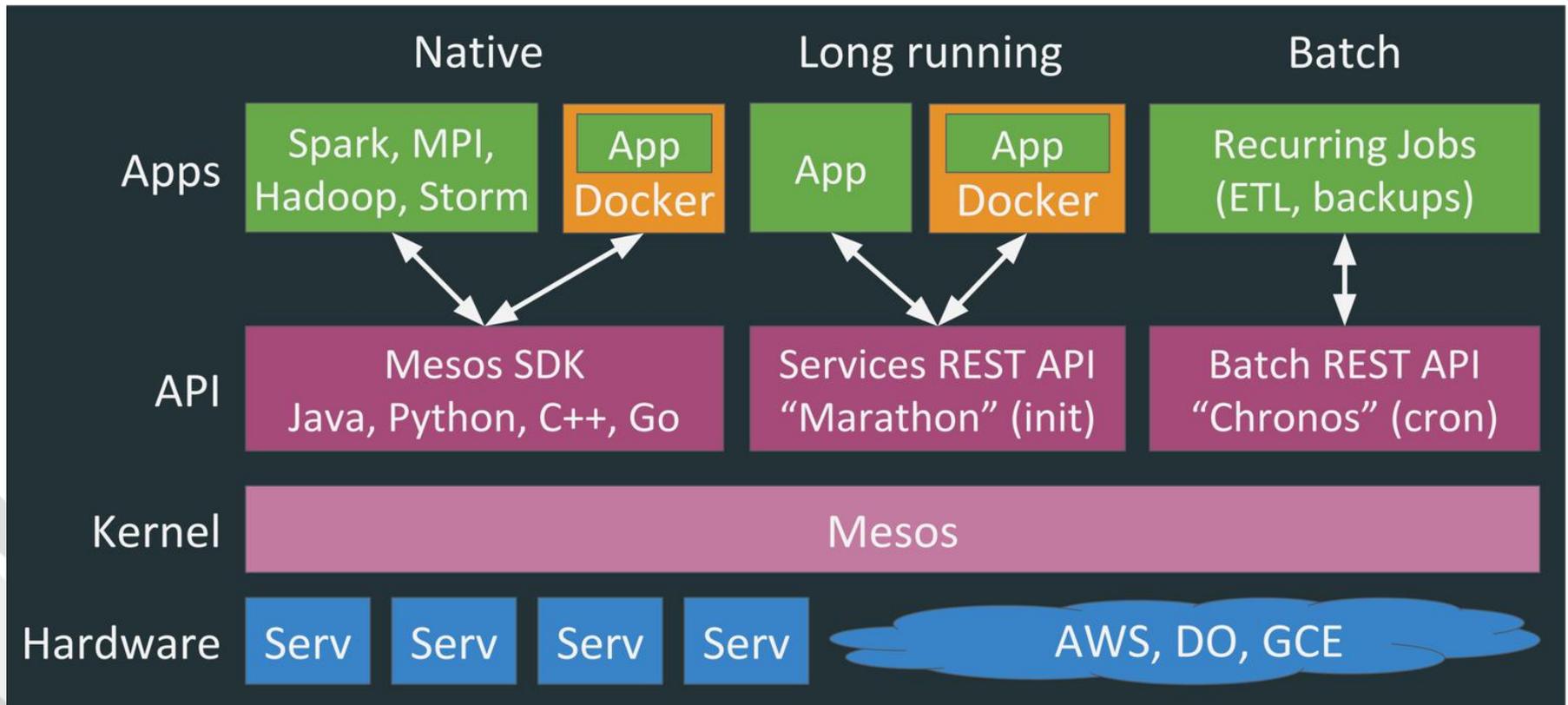
# Roadmap 2: Mesos

- Static Partitioning은 스케일과 장애대응이 어렵다.
- Mesos의 노드들은 모든 Task에 대해 공유된다.

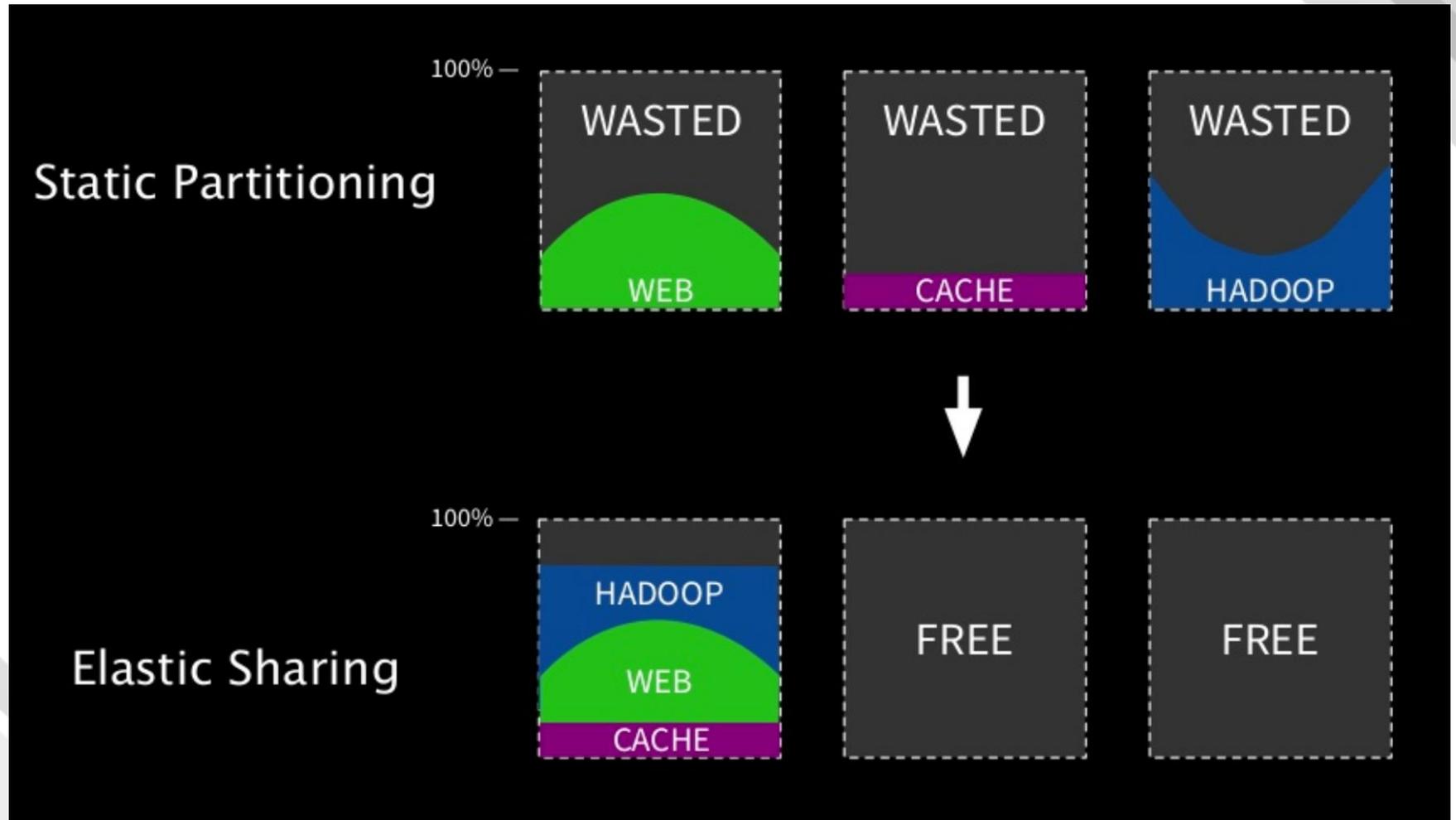


# Roadmap 2: Mesos

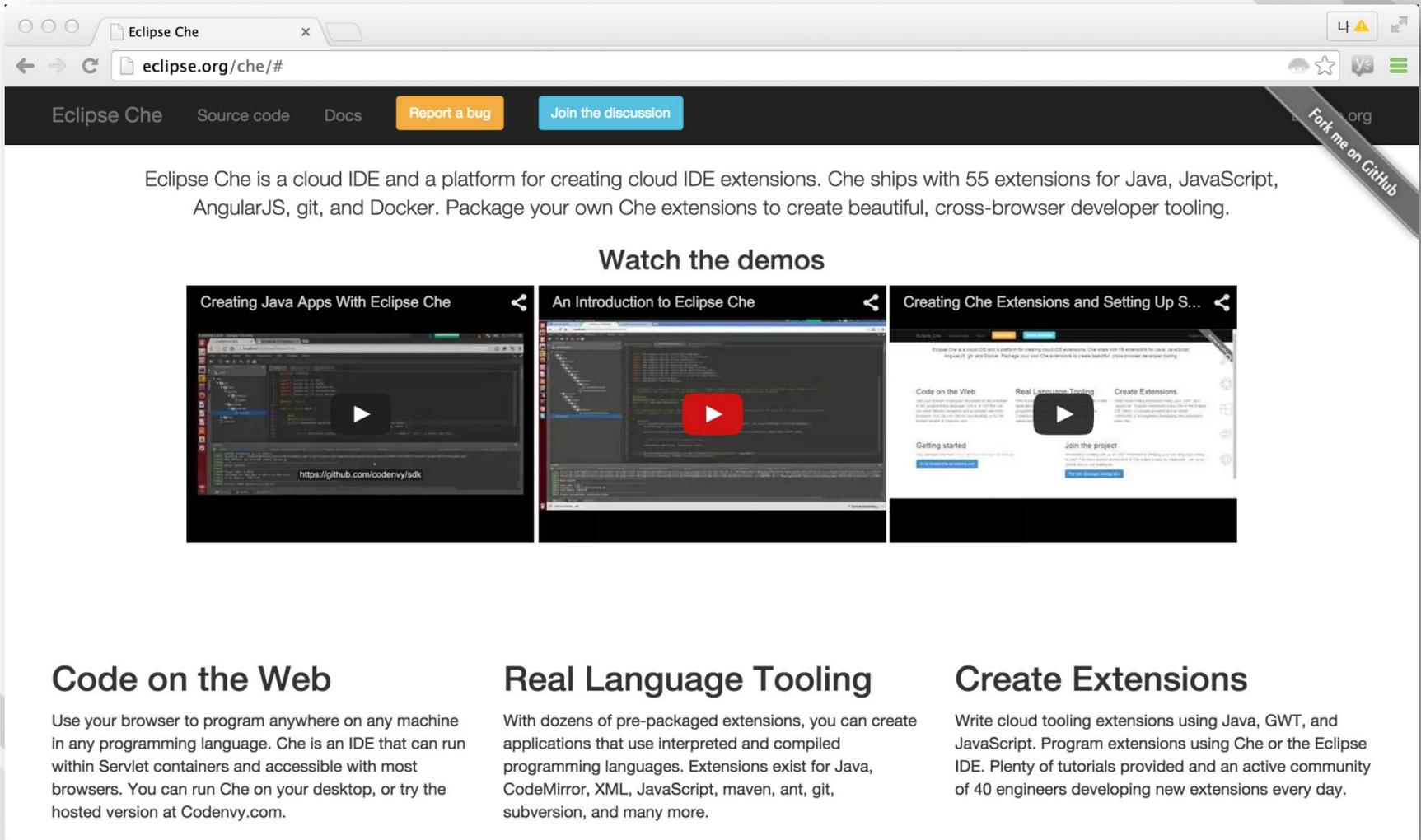
- 하이브리드 Cloud 구성가능
- Batch 작업은 Chronos로 지원



# Mesos: 도입효과



# Roadmap 3: Eclipse IDE



Eclipse Che is a cloud IDE and a platform for creating cloud IDE extensions. Che ships with 55 extensions for Java, JavaScript, AngularJS, git, and Docker. Package your own Che extensions to create beautiful, cross-browser developer tooling.

### Watch the demos

- Creating Java Apps With Eclipse Che
- An Introduction to Eclipse Che
- Creating Che Extensions and Setting Up S...

## Code on the Web

Use your browser to program anywhere on any machine in any programming language. Che is an IDE that can run within Servlet containers and accessible with most browsers. You can run Che on your desktop, or try the hosted version at [Codenvy.com](https://github.com/codenvy/sdk).

## Real Language Tooling

With dozens of pre-packaged extensions, you can create applications that use interpreted and compiled programming languages. Extensions exist for Java, CodeMirror, XML, JavaScript, maven, ant, git, subversion, and many more.

## Create Extensions

Write cloud tooling extensions using Java, GWT, and JavaScript. Program extensions using Che or the Eclipse IDE. Plenty of tutorials provided and an active community of 40 engineers developing new extensions every day.

# 2015 Garuda – Eclipse Che-integrated Cloud IDE and Process Modeling

The screenshot displays the Eclipse Che IDE interface. At the top, a browser-like address bar shows 'localhost:8080/#'. Below it is a menu bar with 'File', 'Edit', 'Project', 'Run', 'Help', and 'Tools'. The 'Tools' menu is open, showing 'Code Generator' and 'Eclipse Che Shell' (highlighted in blue). The main workspace is divided into three panes: Project Explorer on the left, a code editor in the center, and an Outline pane on the right. The Project Explorer shows a project named 'SampleApplication' with a 'Test' file selected. The code editor displays the following Java code:

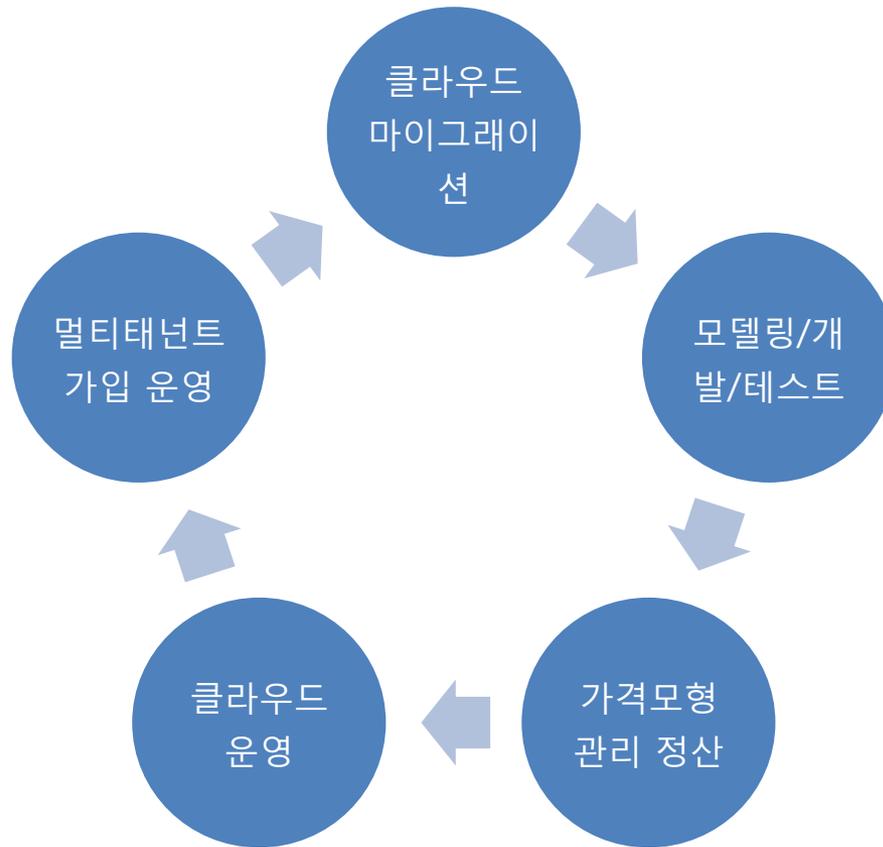
```
1 import org.metaworks.annotation.ServiceMethod;
2 import org.springframework.beans.factory.annotation.Autowired;
3 import org.springframework.transaction.annotation.Transactional;
4
5
6 public class Test {
7
8
9     public Test() {
10    }
11
12    @Transactional
13    @ServiceMethod()
14    public void aaa() {
15
16    }
17
18    String property;
19
20 }
21
```

At the bottom, the Builder console shows the following output:

```
[INFO] Copying validation-api-1.0.0.GA.jar to /java/codenvy-sdk-3.2.0/temp/builder/maven/builds/build-4389833945704071087/SampleApplication/target/dependency/validat
[INFO] Copying spring-context-3.0.3.RELEASE.jar to /java/codenvy-sdk-3.2.0/temp/builder/maven/builds/build-4389833945704071087/SampleApplication/target/dependency/sp
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.615s
[INFO] Finished at: Sun Jan 25 14:35:20 KST 2015
[INFO] Final Memory: 14M/118M
[INFO] -----
```

The bottom status bar includes tabs for 'Events', 'Builder', and 'Runner'.

# 2015 Garuda – Supporting Full Lifecycle of SaaS

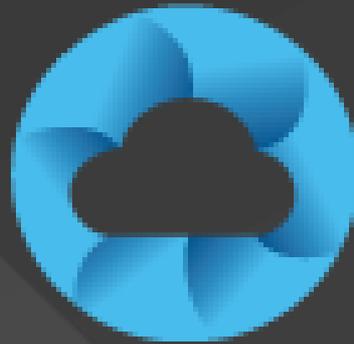


# 피드백을 주십시오!

- <http://www.slideshare.net/pongsor/2015-ocf-specification> 를 보시고,
- <https://www.facebook.com/groups/openc>  
[e](#)  
에 피드백을 주시면 스펙에 반영하겠습니다.



# Thank you



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