Cloud computing using Openshift

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OpenShift supports your language & framework.

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Overview

- Cloud Computing Types
- RedHat's Offerings
- Problems with IaaS
- CloudForms
- OpenShift

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Cloud Types

- Infrastructure-as-a-Service (IaaS)
  - Compute, Storage, Networking
  - AWS, GoGrid
- Platform-as-a-Service (PaaS)
  - Environment
  - Google AppEngine, Engine Yard, Force.com
- Software-as-a-Service (SaaS)
  - Applications
  - Gmail, PayPal, Salesforce

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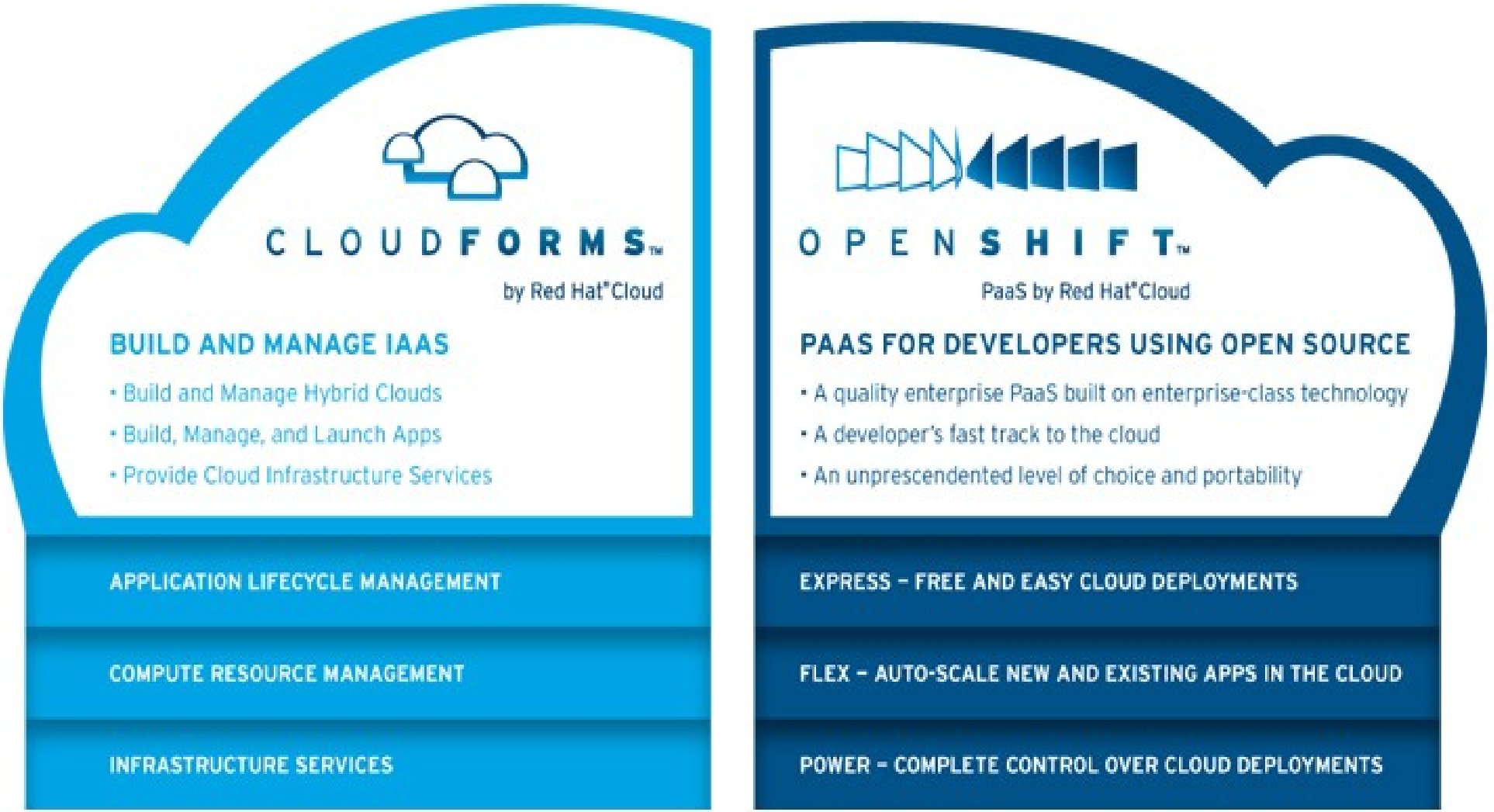
RedHat's Offerings



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IaaS : Problems

- Vendor Lockin
  - Many Providers = Many Interfaces
  - Images are not transferable between Vendors
- Deal with resources only
- No application management tools
- Difficult to manage Spending

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CloudForms

- Create your own IaaS
  - Share Current Infrastructure
  - Utilise public providers
    - Provider agnostic
  - Define Environments for specific applications
  - 1 central management hub and API

- Application Life Cycle Management
  - Pre and post runtime

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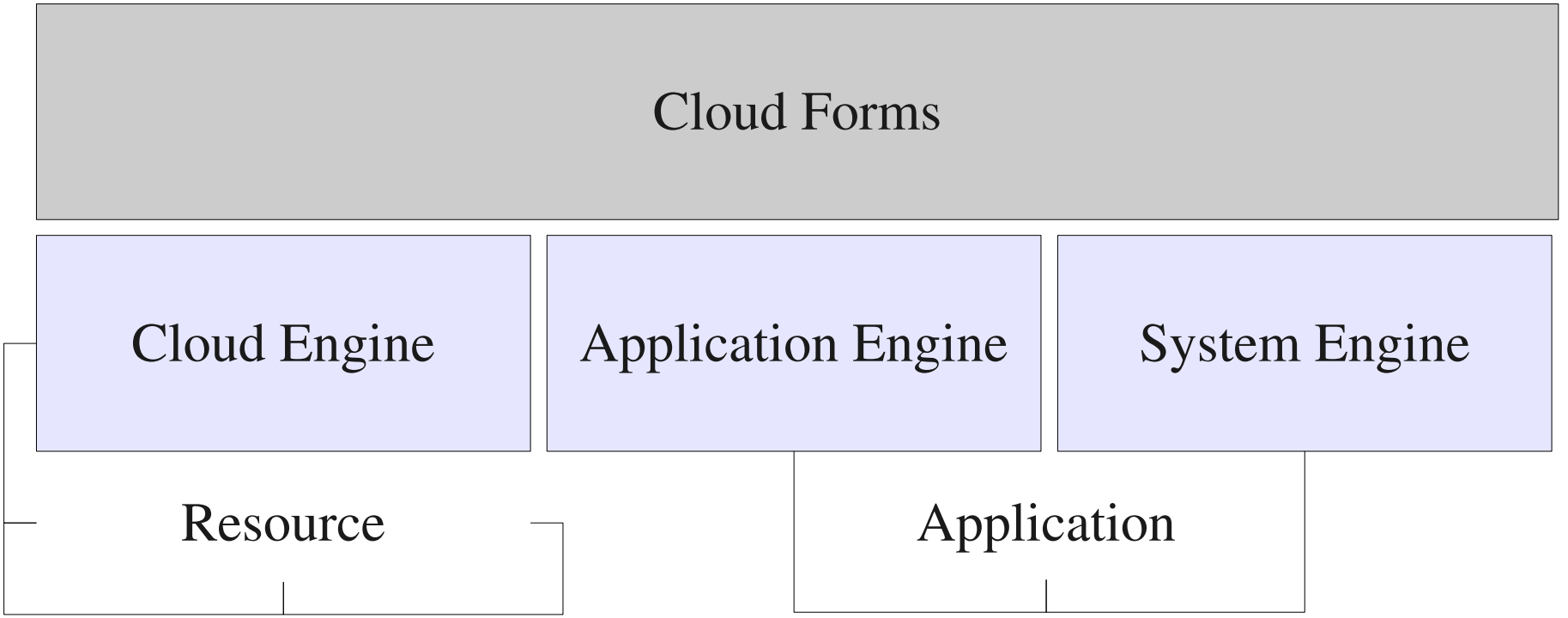
CloudForms



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Cloud Engine: control

- Central Hub for managing, configuring personal IaaS
  - Web Application
  - Admin configures
  - Users to consume resources
- Cloud Providers and Accounts
  - Shared, controlled
- Quotaing
- Pooled Environments
- Policies around Access and Geography
- REST API

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Cloud Engine: users

- Self-service
- Create their own images
- Deploy instances into specific environments
- User control instance life-cycle
- Access instances via SSH
- Resource usage logging for charge back

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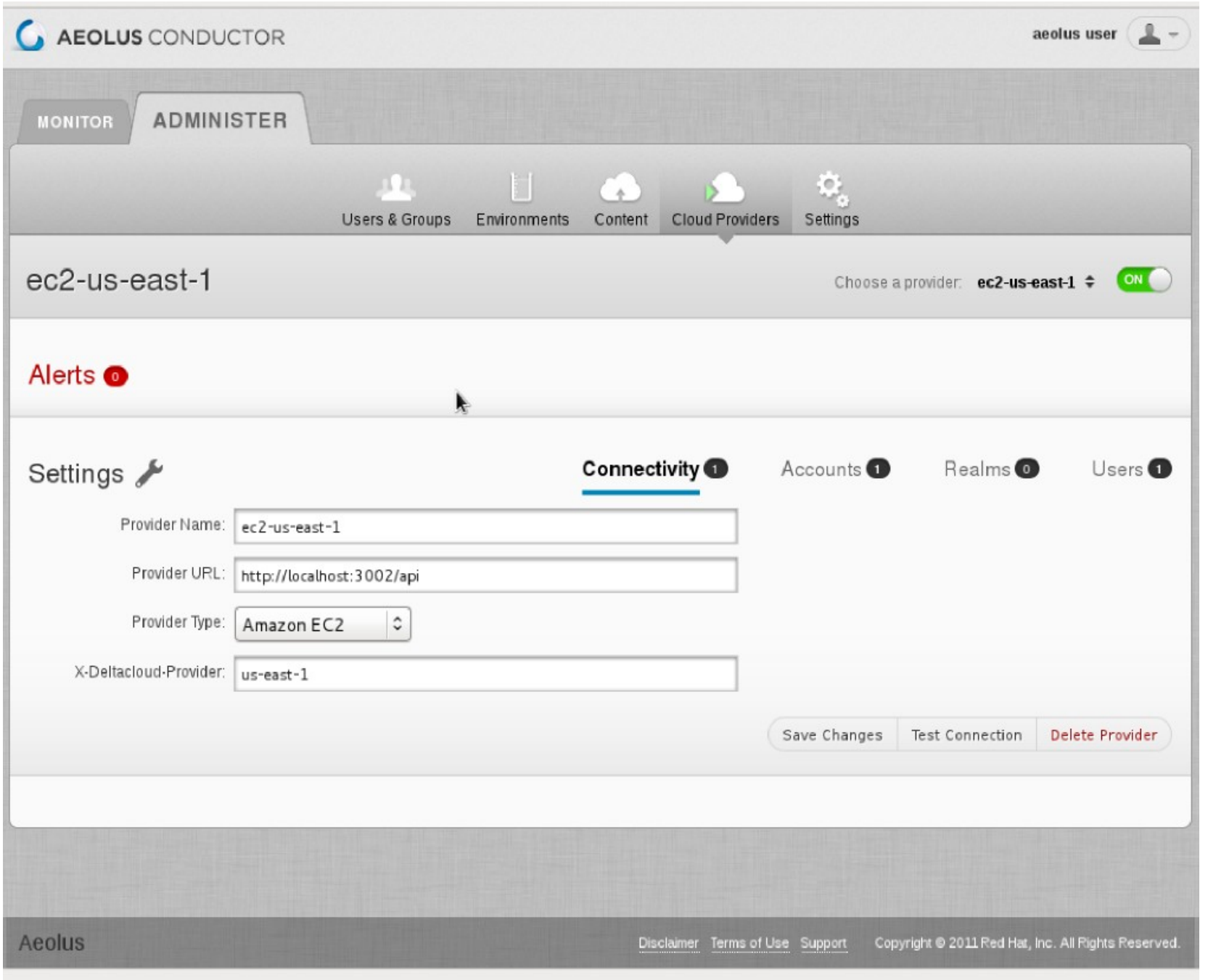
AEOLUS CONDUCTOR
aeolus user
MONITOR
ADMINISTER
Users & Groups
Environments
Content
Cloud Providers
Settings
ec2-us-east-1
Choose a provider:
ec2-us-east-1
ON
Alerts 0
Settings
Connectivity 1
Accounts 1
Realms 0
Users 1
Provider Name:
ec2-us-east-1
Provider URL:
http://localhost:3002/api
Provider Type:
Amazon EC2
X-Deltacloud-Provider:
us-east-1
Save Changes
Test Connection
Delete Provider
Aeolus
Disclaimer
Terms of Use
Support
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Application Engine

- Define application environments
- Image Builds
  - Build for multiple providers
  - Archives
- Post boot configuration
- Versioning
- Environment Tagging
- Access
- Image Uploads

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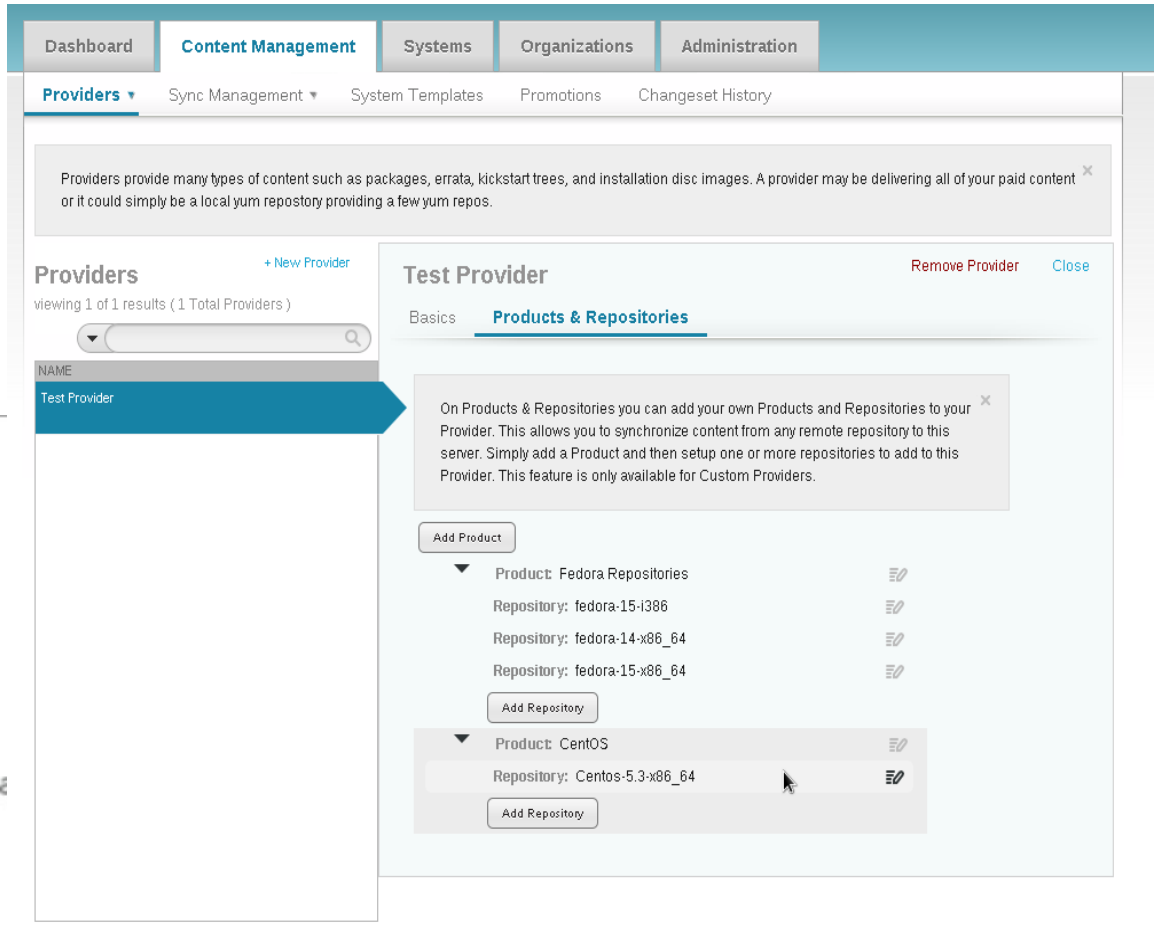
System Engine

- Builds on top of the Application Engines
- Continuous Content and configuration
- Live updates
  - Template defined
  - Instance defined

Application/System Engine




```
<template>
  <name>tmpl1</name>
  <description>foo</description>
  <os>
    <rootpw>password</rootpw>
    <name>Fedora</name>
    <arch>x86_64</arch>
    <version>14</version>
    <install type="url">
      <url>http://fedoraproject.org/fedora
    </install>
  </os>
  <repositories>
    <repository name="custom">
      <url>http://fedorapeople.org/repos/aeolus/demo/webapp/</url>
      <signed>false</signed>
    </repository>
  </repositories>
</template>
```

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CloudForms Summary

- Create your own IaaS
- Self-service
- Control access and usage of resource
- Define and build application environments
- Control where you applications are deployed
- Continuous content and configuration management
- Verbose logging for charge back

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How do I get CloudForms?

- Beta registration has finished :(

- CloudForms is combination of RedHat projects
  - www.aeolus-project.org
    - Minor release every 3 weeks
    - Testing repositories
    - Naming is a little different!
  - www.katello.org

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OpenShift

- Platform-as-a-service
- Java, Ruby, PHP, Perl and Python applications.
  Express
  - Free
- Flex
  - Auto-scaling
  - performance monitoring
  - application management
- Power
  - Create you own PaaS

- www.openshift.redhat.com

Demo