



# Developing in the Cloud, for the Cloud

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Rational CLM Cloud Lead Architect

# Innovate2013

The IBM Technical Summit



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# The new development reality:

**Consumerization  
of technology**



*Developers making  
more decisions*

**Cloud & Mobile  
Revolution**



*Changing the types of  
software that gets built*

**Systems of  
engagement**



*Line of Business and  
marketing driving*

*New Development Reality*

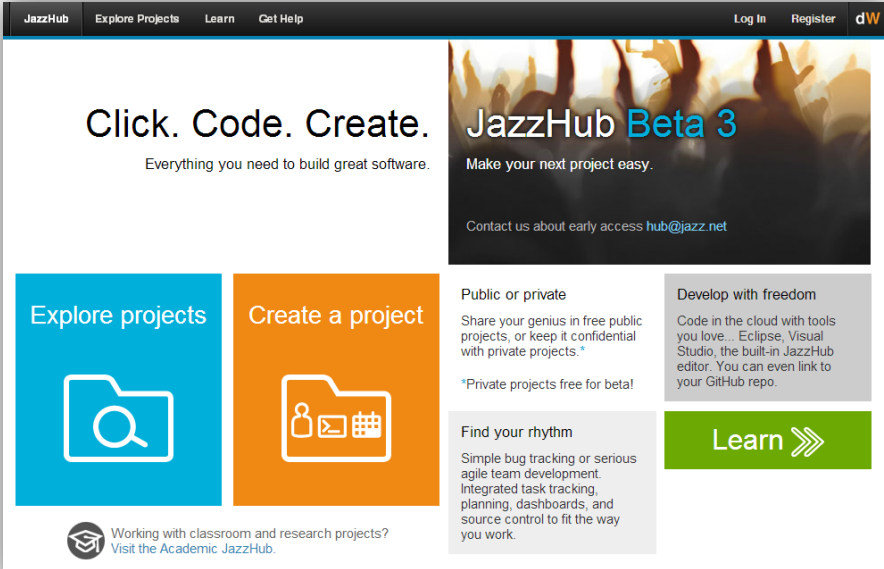
# The Case for Developing in the Cloud

- More and more applications have moved to the Web, to mobile devices, and are being run in Cloud environments
- Rational's Application lifecycle tools offer lifecycle capabilities in the Web
- But Development tasks are largely still done on the desktop in environment like Eclipse or Visual Studio
- Could we offer this experience in the Web, and integrate it into the software lifecycle?
- This is what we're delivering with JazzHub, using the Eclipse Orion technology

# JazzHub: your place to Developer for the Cloud, in the Cloud

## ■ What is JazzHub?

- JazzHub allows you to develop and collaborate on software projects in the cloud.
- Fully hosted task tracking, agile planning, and integrated source control so you have everything you need to develop your next app, feature or product.
- IBM's premiere hosted environment for Cloud application development, with built-in DevOps capabilities
- Free public and fee-based private projects (free during Beta)
- Explore and join existing projects



The screenshot shows the JazzHub website homepage. At the top, there is a navigation bar with links for 'JazzHub', 'Explore Projects', 'Learn', and 'Get Help'. On the right side of the navigation bar, there are links for 'Log In', 'Register', and a 'dW' logo. The main content area features a large banner with the text 'Click. Code. Create.' and 'Everything you need to build great software.' Below this, there are two prominent buttons: 'Explore projects' (blue) and 'Create a project' (orange). To the right of these buttons, there is a section titled 'JazzHub Beta 3' with the text 'Make your next project easy.' and a contact link 'hub@jazz.net'. Below the buttons, there are several informational boxes: 'Public or private' (Share your genius in free public projects, or keep it confidential with private projects.\*), 'Develop with freedom' (Code in the cloud with tools you love... Eclipse, Visual Studio, the built-in JazzHub editor. You can even link to your GitHub repo.), and 'Find your rhythm' (Simple bug tracking or serious agile team development. Integrated task tracking, planning, dashboards, and source control to fit the way you work.). A green 'Learn' button with a double arrow is also present. At the bottom left, there is a small icon of a graduation cap and the text 'Working with classroom and research projects? Visit the Academic JazzHub.'

# Do developers really want to move to the Cloud?

- Progression of desktop to cloud-based tools



- Shift in developer knowledge sharing



- Deploying to Cloud-based PaaS, IaaS, etc.



- *How enjoyable was your last IDE setup experience ???*

# What is Orion?

- Eclipse “platform” project initiated 2 years ago -- **Tools for the web, on the web**
- An evolution in tooling leveraging the impressive recent improvements in browser capabilities and availability of cloud services
- Embracing the shift to web-based application delivery and enabling cross site collaboration of “pluggable” services
- A community that benefits from compatibility between a common set of components and services to create richer cloud based tools than they might otherwise by themselves



# Orion Key Features

- Replaces need for a desktop IDE
  - Initially targeting needs of web developers (HTML, JavaScript, CSS, Ruby, Python)
- Enable “Core” Coding Activities in a Browser
  - Code editing, navigating source, search, integration with Source Control Management
- Speed / Responsive UI Design
- Extensibility and Community are what sets Orion apart





## Mobile Support

- Tablets such as the iPad, iPad mini and Android based platforms are fully supported by Orion
- Add a bluetooth keyboard for a mini workstation



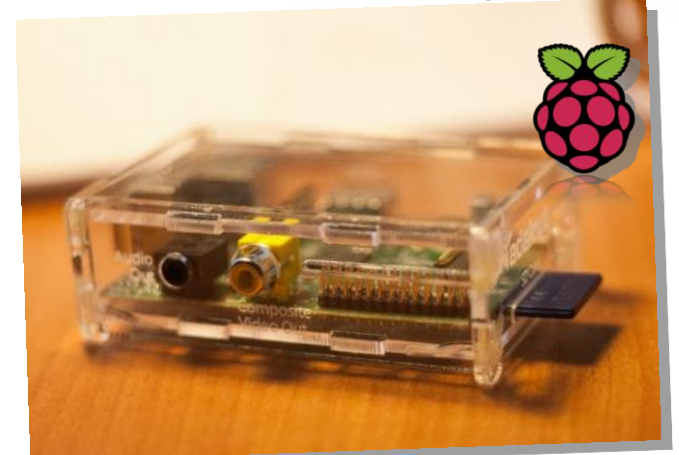
## Two sources of an Orion Server

- Multi-user Equinox based **Java** Server
- Great for reusing existing Eclipse plug-ins and exposing them REST-fully to an Orion client
- **Node.js** based single user NPM install
- Very portable and great performance and used anywhere Node is installed



YouTube demo

Also works on  
embedded  
boards like the  
Raspberry Pi



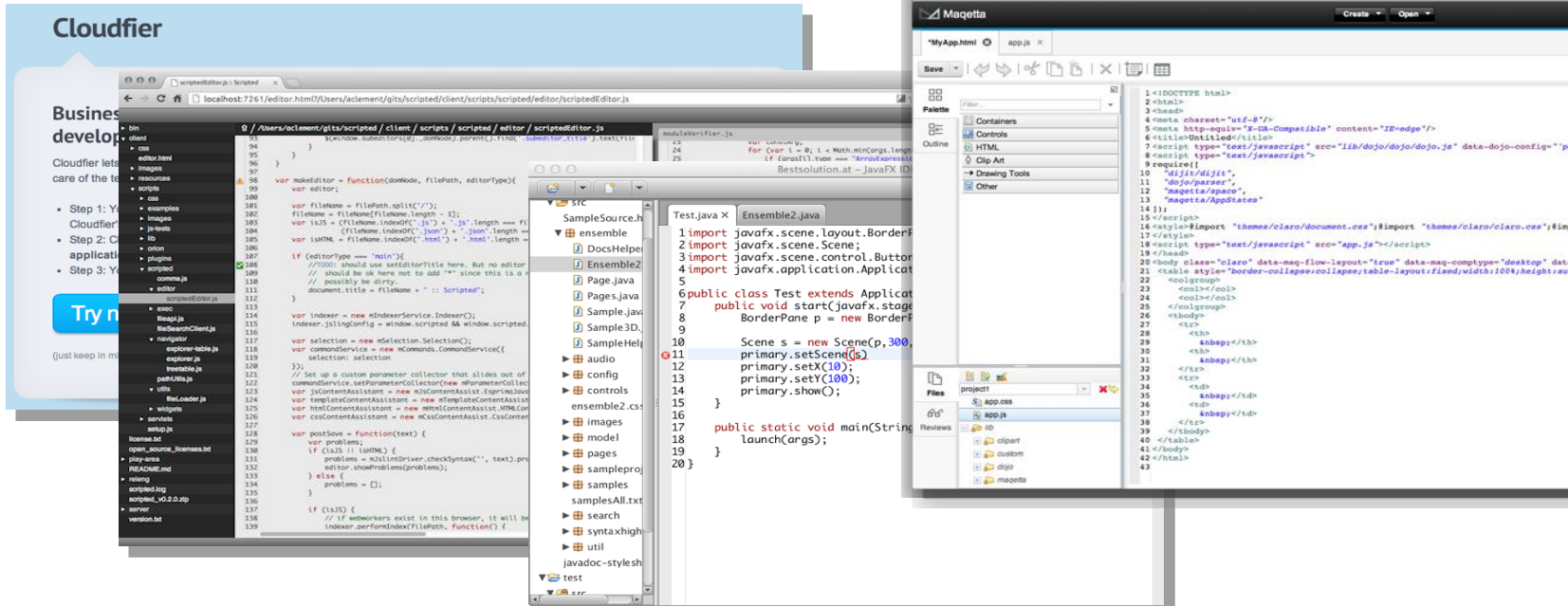
# Demo

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# What about the Community?

- VMWare JavaScript tooling editor named “Scripted”
- Firefox embeds Orion for the Scratchpad and Debug tools
- e(fx)clipse leveraging JavaFX, OSGi, Eclipse and Orion
- Maqetta leverages the Orion core and file system
- HP and SAP, ...



# So we've got a browser-based IDE, now what?

- Seems a little silly to run a Web server on my desktop to edit files
- Wouldn't it be ideal if there was a Cloud for Development where I could use Orion?
  - Integrated with hosted Software Configuration Management
  - Continuous Integration and Deployment
  - Tracking and Planning
  - Integration with Cloud runtimes...
- Introducing JazzHub for everyone
  - Expanding our Academic experiment from 2011 to welcome all public and private projects

# Introducing JazzHub Beta 3

## ■ What is JazzHub?

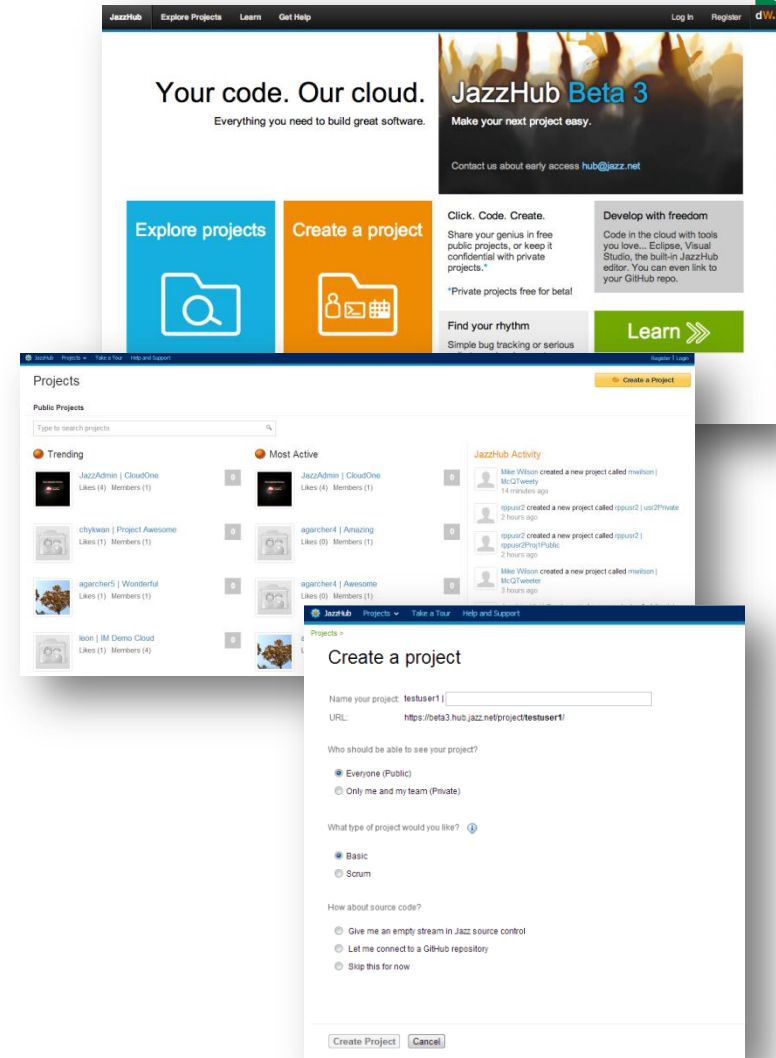
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- Explore and join existing projects

## ■ Start quickly. Simply.

- No downloads required!
- Create your first project in minutes

## ■ Work the way you want to work

- Browser-based development using integrated Eclipse Orion technology provided by JazzHub
- Full support for local development with Eclipse or Visual Studio
- Built in support for Jazz Source Control
- Connect to your existing GitHub projects



Browse Projects – JazzHub: Software development in the cloud

https://beta3.hub.jazz.net/projects

JazzHub Beta Explore Learn Get Help Log In Register dW.

## Projects

Create a Project

### Public Projects

Type to search projects

#### Trending

- JazzAdmin | CloudOne** 7  
Likes (6) Members (1)

#### Most Active

- srich | Hello World** 13  
Likes (2) Members (1)

#### JazzHub Activity

- JazzHub Team** There will be a 12 hour outage from 4:00 AM to 4:00 PM (EDT) on Wed, May 8 while we move JazzHub to its new home at [https://beta3.hub.jazz.net/projects](#)
- new project called mtonomczyk | Bran 19 hours ago
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#### Cloud

- Likes (2) Members (7)

#### Deux

- Likes (0) Members (1)

#### bbetz | BillB - Basic Project

- 7  
Likes (2) Members (3)

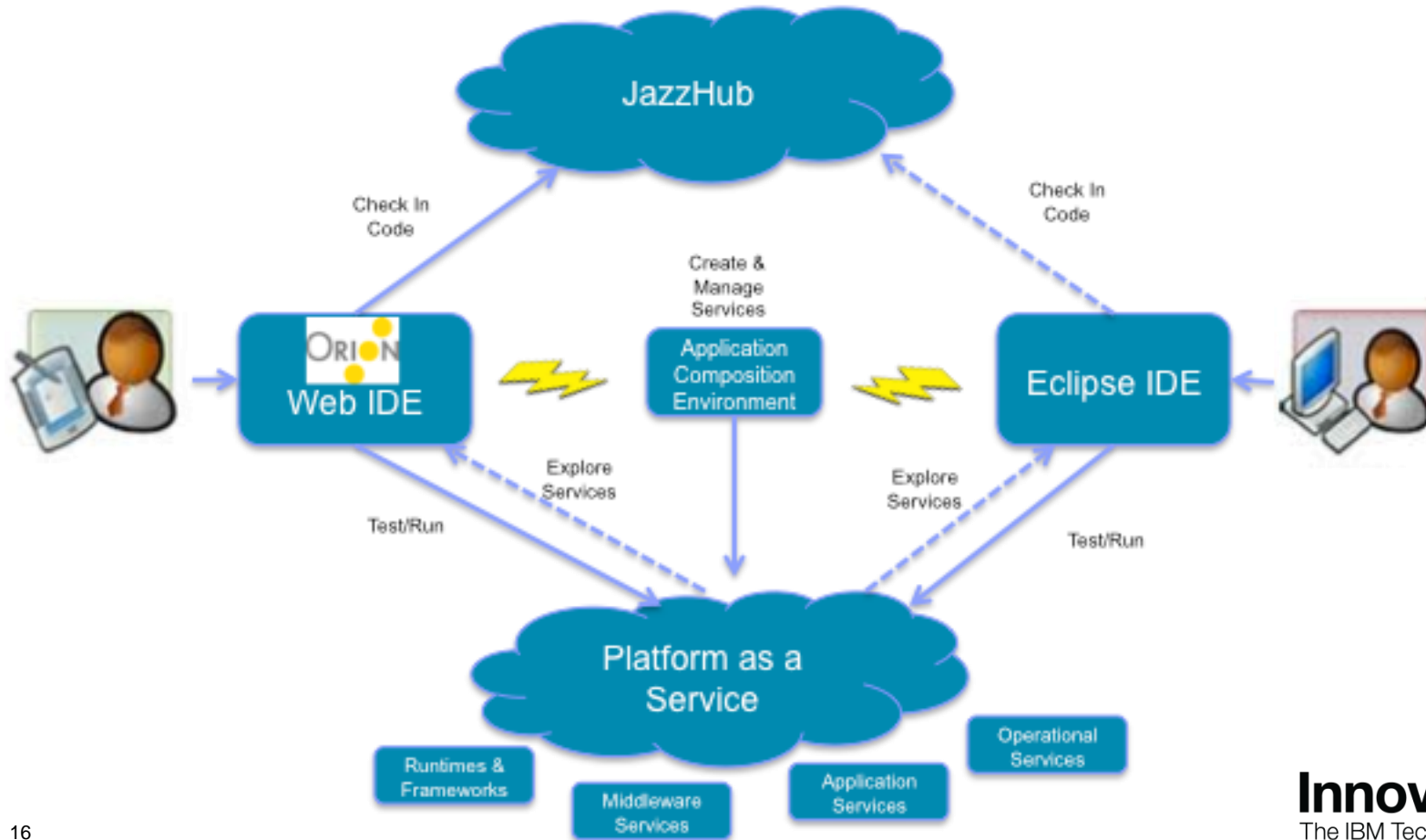
#### bbetz | Bill's scrum project

- 10  
Likes (0) Members (1)

DEMO

# Developing in the Cloud, for the Cloud

- So now I can edit my code in the Cloud, in the context of a hosted RTC project
  - Wouldn't it be cool if I could deploy my code right from there to a Cloud runtime?!?!?





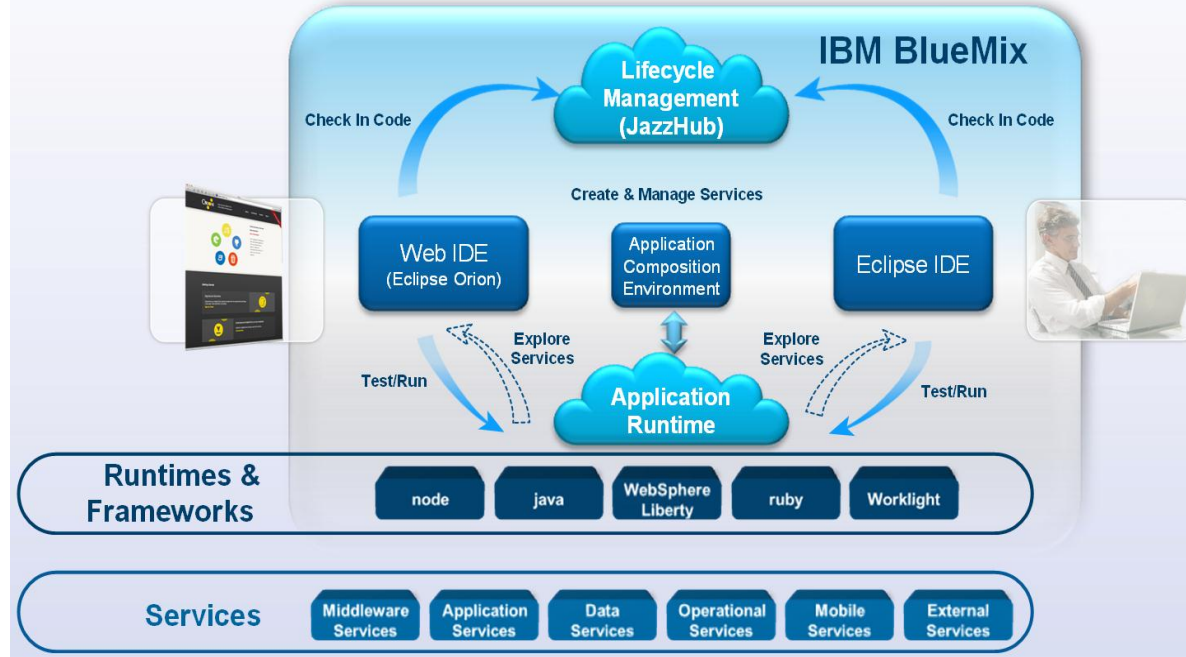


# Introducing IBM BlueMix

## Early Access Program\*

### What is IBM BlueMix?

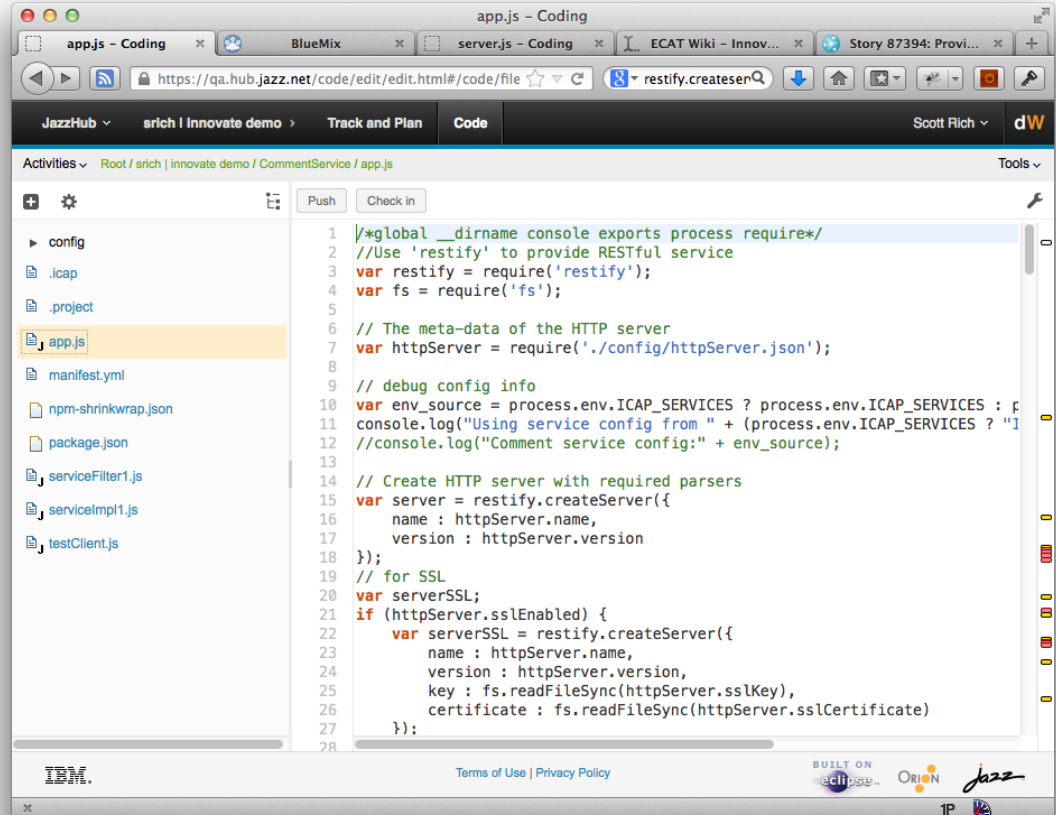
- An IBM initiative to develop an open cloud operating environment that encompasses runtimes, services, and tooling for "next gen" cloud application development
- Applications can be quickly composed from an extensible set of services from IBM and others
- Built-in support for Liberty and Worklight runtimes
- Streamlined rapid development and integrated DevOps with both Browser-based and Eclipse-based tools, backed by IBM's cloud-based developer offering, JazzHub
- We are inviting developers to join us and experiment with the Beta technology at [BlueMix.net](http://BlueMix.net)
- Cloud and on-premise offerings based on BlueMix are planned for 2014



\* Contact [jstart@us.ibm.com](mailto:jstart@us.ibm.com) for more information about the BlueMix.net early access program. See a demo at Integration Center peds IC-16 and IC-17. For more info on IBM's open cloud architecture see <http://www.ibm.com/developerworks/cloud/library/cl-open-architecture/>

# Developing Your Cloud Application in the Browser

- JazzHub developers can work on their code right in the browser
- Powerful Orion-based source code editor
- Integrated with JazzHub SCM
  - organize changes and accept and deliver with your team from the browser
- One click away from your JazzHub project's tracking and planning
- Integrated with the runtime Cloud
  - Push an update right from the editor
  - Or drop into the shell for more control



The screenshot displays the JazzHub Orion IDE interface. The browser window shows the URL `https://qa.hub.jazz.net/code/edit/edit.html#/code/file`. The IDE includes a file explorer on the left with a project structure containing files like `config`, `.icap`, `.project`, `app.js`, `manifest.yml`, `npm-shrinkwrap.json`, `package.json`, `serviceFilter1.js`, `serviceImpl1.js`, and `testClient.js`. The main editor area shows the following JavaScript code:

```
1 /*global __dirname console exports process require*/
2 //Use 'restify' to provide RESTful service
3 var restify = require('restify');
4 var fs = require('fs');
5
6 // The meta-data of the HTTP server
7 var httpServer = require('./config/httpServer.json');
8
9 // debug config info
10 var env_source = process.env.ICAP_SERVICES ? process.env.ICAP_SERVICES : '1';
11 console.log("Using service config from " + (process.env.ICAP_SERVICES ? "1" : "0"));
12 //console.log("Comment service config:" + env_source);
13
14 // Create HTTP server with required parsers
15 var server = restify.createServer({
16   name : httpServer.name,
17   version : httpServer.version
18 });
19 // for SSL
20 var serverSSL;
21 if (httpServer.sslEnabled) {
22   var serverSSL = restify.createServer({
23     name : httpServer.name,
24     version : httpServer.version,
25     key : fs.readFileSync(httpServer.sslKey),
26     certificate : fs.readFileSync(httpServer.sslCertificate)
27   });
28 }
```

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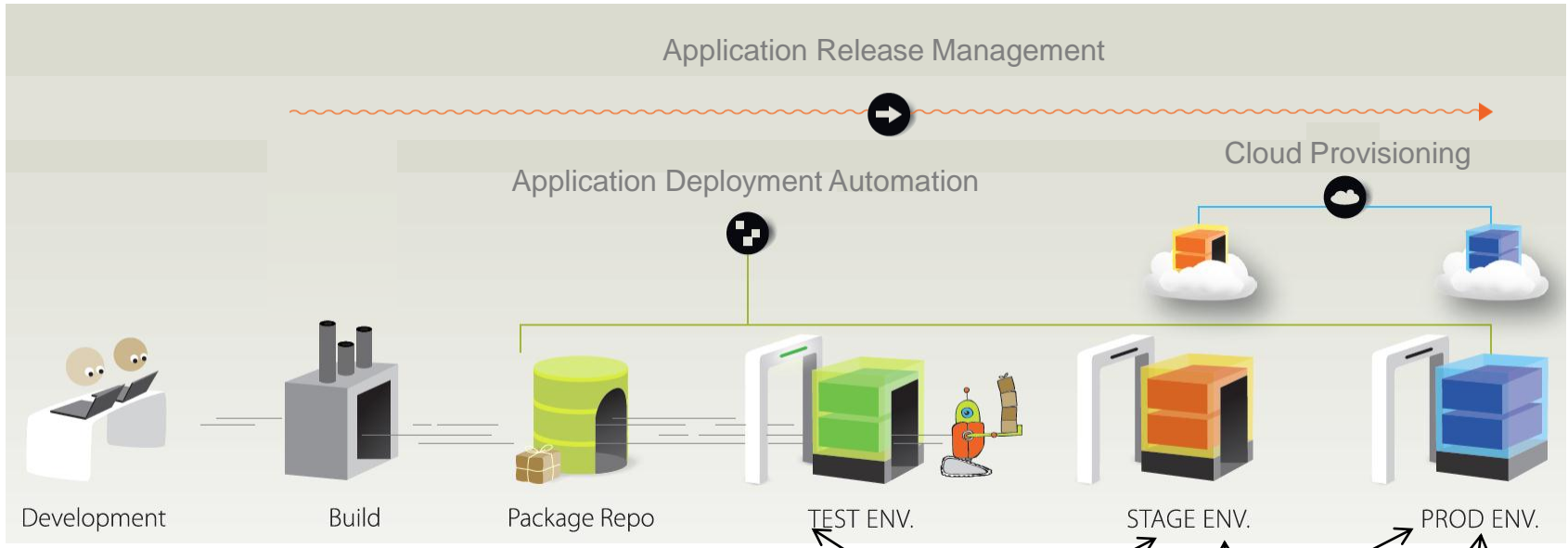
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DEMO

# Orion in a Future DevOps Tool Chain for the Cloud



Edit code

Edit infra as code

Deployment/Ops shell

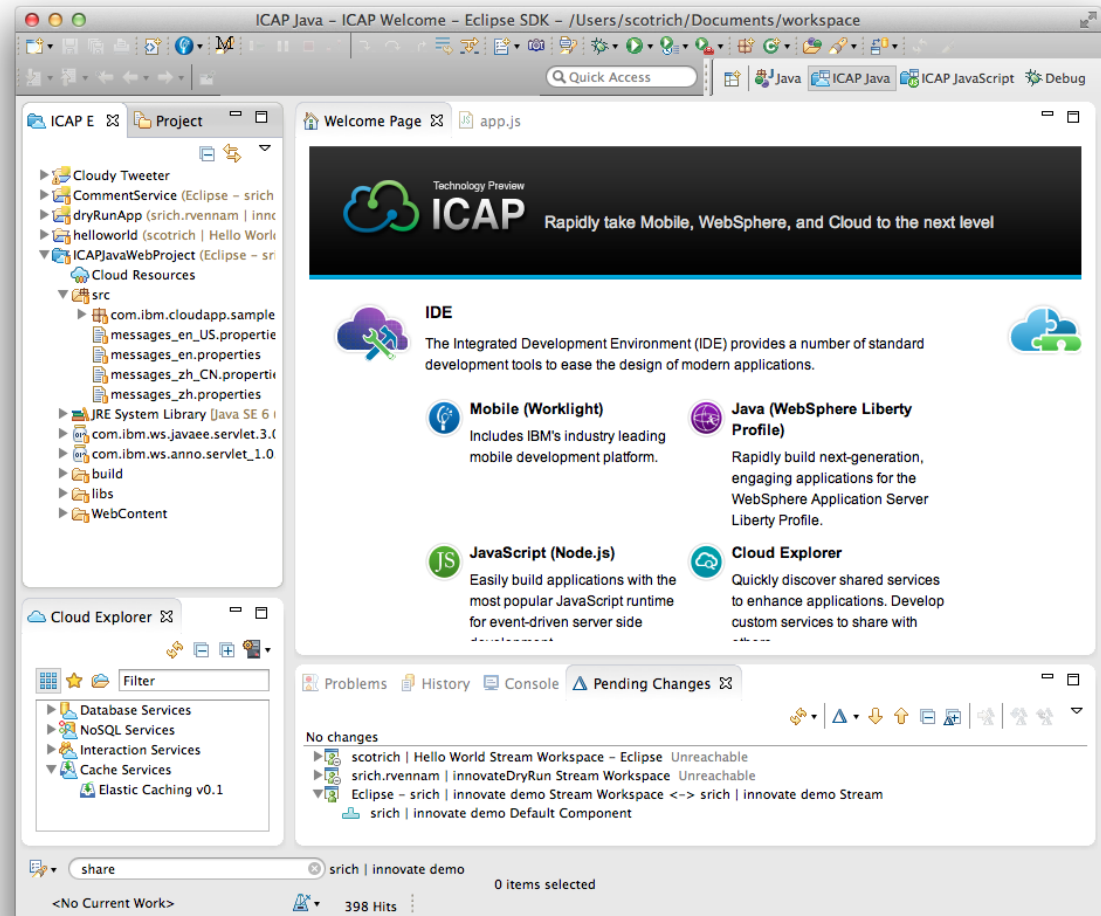
```
CloudyTweeter
├── public
├── routes
├── views
└── app.js
  manifest.yml
  npm-shrinkwrap.json
  package.json
  README.md

1 // Configure the Node.js dependencies to use the express web
2 // globals require console.process __dirname =/
3 var express = require('express');
4 var routes = require('./routes');
5 var user = require('./routes/user');
6 var http = require('http');
7 var path = require('path');
8 var twitter = require('express-twitter');
9 var redis = require('redis');
10
11 var app = express();
12 // Configure the app web container
13 app.configure(function() {
14   app.set('port', process.env.PORT || 3000);
15   app.set('views', __dirname + '/views');
16   app.set('view engine', 'jade');
17   app.use(express.favicon());
18   app.use(express.logger('dev'));
19   app.use(express.bodyParser());
20   app.use(express.methodOverride());
21
22 // NOTE: cookieParser() and session() must precede the tw
```



# Developing Your Cloud Application in Eclipse

- Eclipse developers can connect to JazzHub and develop using IBM's Icap tooling
- Cloud Explorer for application composition
  - Drag/drop service composition
- Local sandbox for debug and testing
- Local sample services
- (in progress) Deploy from local Development env to BlueMix cloud





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[sltrunzo@pointsourcellc.com](mailto:sltrunzo@pointsourcellc.com)

# WHY Develop in the Cloud?



- **Speed of time to market critical in mobility**
  - Get projects running in hours, not weeks
- **IT budgets often overspent, or mobile strategy owned by non-IT org (CMO office for example)**
  - Direct cost savings over traditional local systems
  - Indirect cost savings to us and client through better project management, lifecycle support
- **Supporting the full development lifecycle often not a priority... until it is**
  - SaaS tools enable us to deliver higher quality, and better ongoing support environments
- **Consulting/services with clients requires collaboration and hand-offs**
  - Collaboration improves when technology is frictionless
  - Solve distributed connectivity issues
  - Runs efficiently multi-tenant for different businesses or business units
  - Onboarding and handing off solutions far more efficient



## Why we Love JazzHub

- Transparent development and planning
- Up and running in 5 minutes
- Immediate collaboration
- Enable example code; point customers to see value
- Simple on-ramp to get clients started with development tools

### PointSource projects in JazzHub:

- PS Whiteboard
- Major retail B2C storefront
- Major insurance sales center B2B
- Internal development and design work
- PS.SDK



JazzHub partner for mobile  
development lifecycle

[www.PSWhiteboard.com](http://www.PSWhiteboard.com)



# PS Whiteboard



## Capabilities:

- Capture your ideas **elegantly in a free solution**
- Import or capture a photo or document and sketch on top of that to mockup drawings or wireframes and designs
- Save and share for continued collaboration

## Industry applications:

- Insurance claims adjusters may take photos of damage and take notes about the damage
- Doctors can make notes on x-rays
- Product engineers can quickly sketch on existing schematics
- Kids can even draw funny faces on their pets, or they can let their imagination go wild with freeform drawing

## Worklight:

- Created to aid in our own creative processes by a **small team of our talent using IBM Worklight**
- **Within 2 weeks from PoC we had a production-ready, cross device solution**
- Built in Worklight using jQuery, Backbone, and Bootstrap. Apache Cordova was used to integrate with the native device camera and photo album



**JazzHub**

@JazzHub

#JazzHub is a place where you can collaborate with others to seamlessly plan, track, and develop software in the cloud.

Worldwide · [hub.jazz.net](http://hub.jazz.net)



**Scott Rich**

@ScottRich

IBMer, evangelist for the Jazz platform

Zurich, Switzerland · [zuriches.shutterfly.com](http://zuriches.shutterfly.com)



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