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System Integrators Interchange

September 17-19, 2014  The Lalit, Jaipur

Compete in
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SMART.



IBM

Experience Bluemix™



IBM Bluemix™ Experience Center

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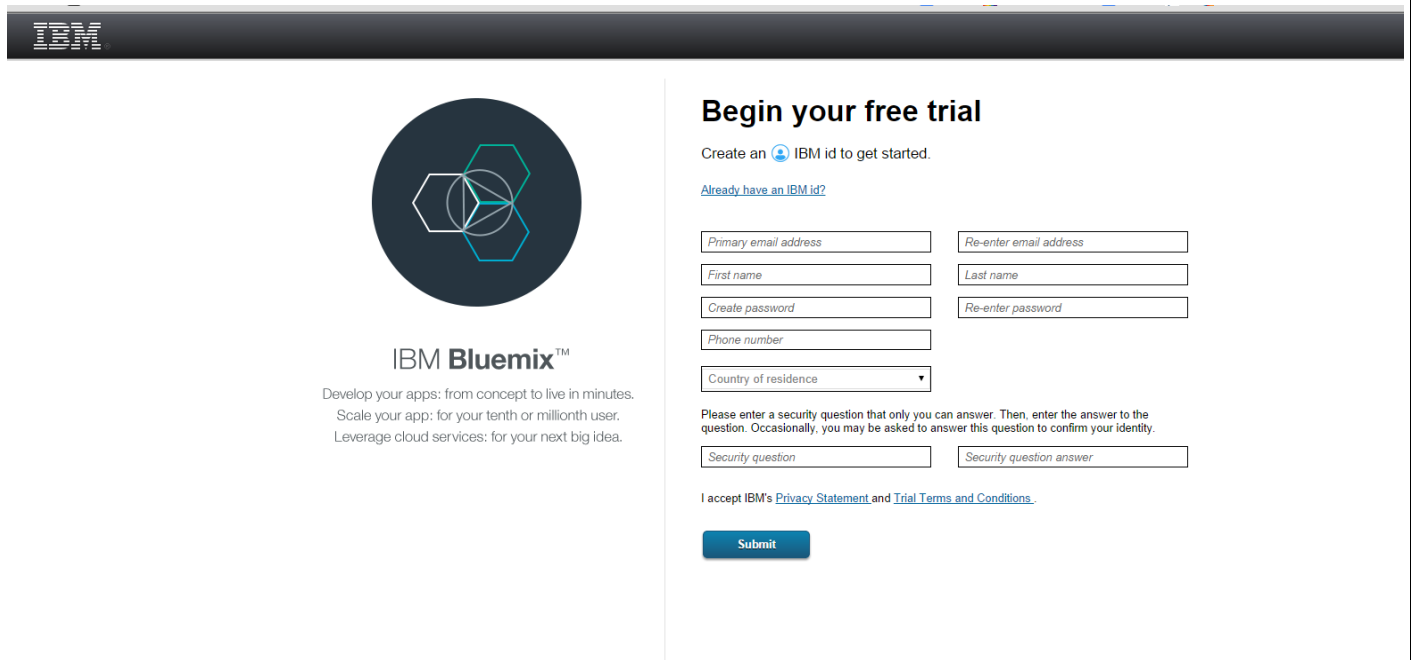
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Pre-requisites

You should have Bluemix login id and password to login into Bluemix. If you already have a IBM ID (your id to login to partnerworld or developerworks websites) , you can use the same id to login to Bluemix.

If you do not have your IBM ID, you can get it by registering it through the website.


<https://apps.admin.ibmcloud.com/manage/trial/bluemix.html>



IBM

IBM Bluemix™
Develop your apps: from concept to live in minutes.
Scale your app: for your tenth or millionth user.
Leverage cloud services: for your next big idea.

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Create an  IBM id to get started.

[Already have an IBM id?](#)

Primary email address Re-enter email address

First name Last name

Create password Re-enter password

Phone number

Country of residence

Please enter a security question that only you can answer. Then, enter the answer to the question. Occasionally, you may be asked to answer this question to confirm your identity.

Security question Security question answer

I accept IBM's [Privacy Statement](#) and [Trial Terms and Conditions](#).

Fill in your personal details (please use your organization's mail id) and submit.

The signup process may take upto 24 hours. Hence please be ready with your IBM ID/Bluemix ID to experience Bluemix.

Bluemix Exploration



The first step is to experience Bluemix and its capabilities, before we go and deploy applications to it. Lets get started with it.

If you are familiar with Bluemix and interested in only doing the lab, please jump to the 3rd section on page 14.






There are many things you can do without logging into Bluemix. Lets first explore those.

SOLUTIONS CATALOG PRICING DOCS COMMUNITY SIGN UP LOG IN

IBM® Bluemix™ is now open!

A platform where developers can act like kids in a sandbox—
except this box is enterprise-grade.

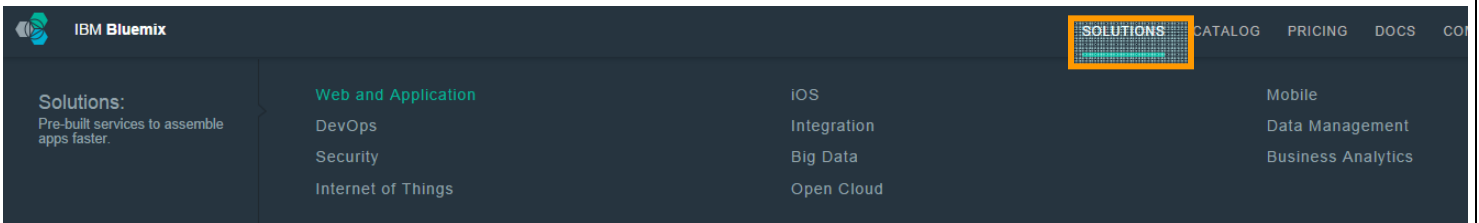
Sign up for a free trial

with Bluemix:     

Notice the menu items at the right top corner. Explore each of those menu items to get valuable insight about various aspects of the Bluemix solution.

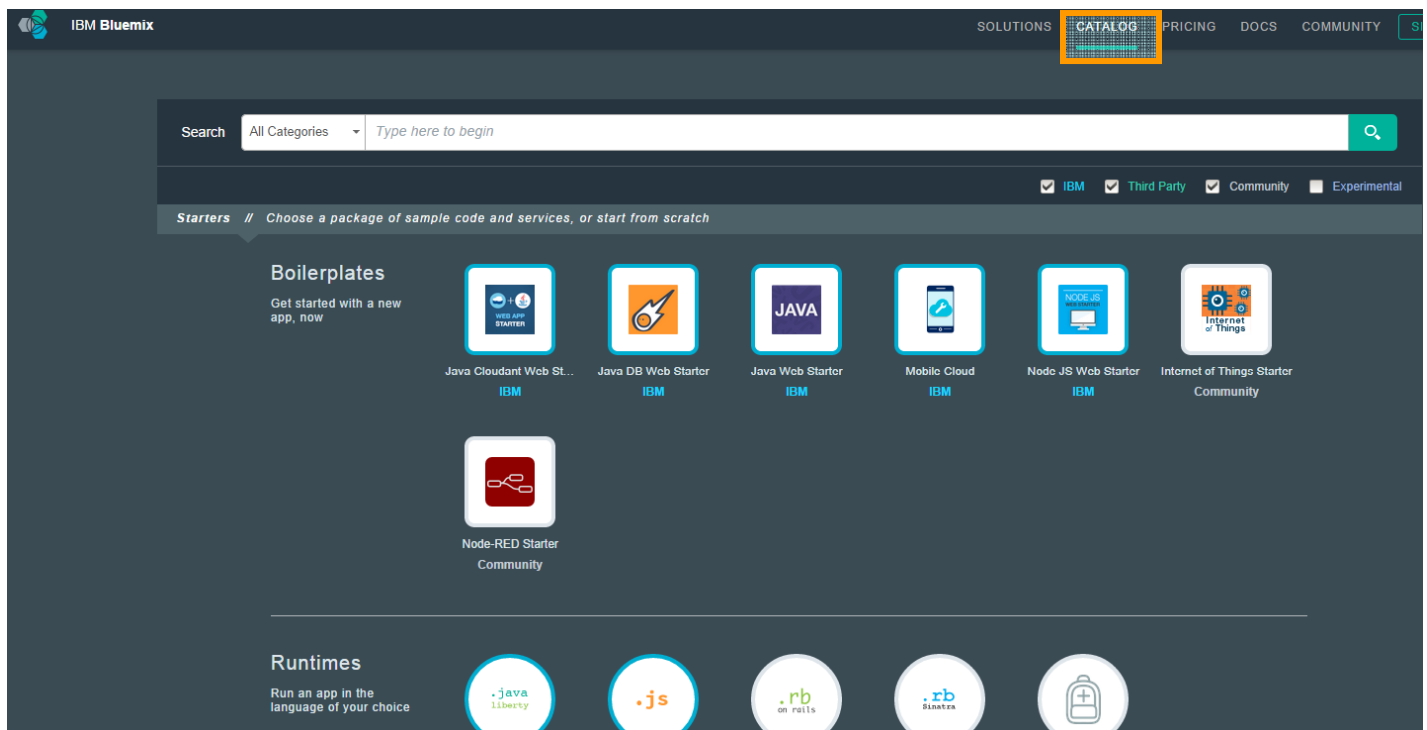
Solutions

Lists the kind of solutions you can build using Bluemix. DevOps, Integration, Big Data, Mobile are some of the solutions people are building using Bluemix.



Catalog

Get a complete list of offerings that constitute of Runtimes, Services, Boilerplates and Add-Ons.



Boilerplates

In Bluemix, a boilerplate is a container for an application and its associated runtime environment and predefined services for a particular domain. You can use a boilerplate to quickly get up and running. For example, you can select the Mobile Cloud boilerplate to host mobile and web applications and accelerate development time of server-side scripts by using the mobile app template and SDK.

Services

A service is a cloud extension that is hosted by Bluemix. The service provides functionality that is ready-for-use by the app's running code. The predefined services provided by Bluemix include database, messaging, push notifications for mobile apps, and elastic caching for web apps.

Runtimes

A runtime is the set of resources that is used to run an application. Bluemix provides runtime environments as containers for different types of applications. The runtime environments are integrated as buildpacks into Bluemix, and are automatically configured for use.

Add-ons

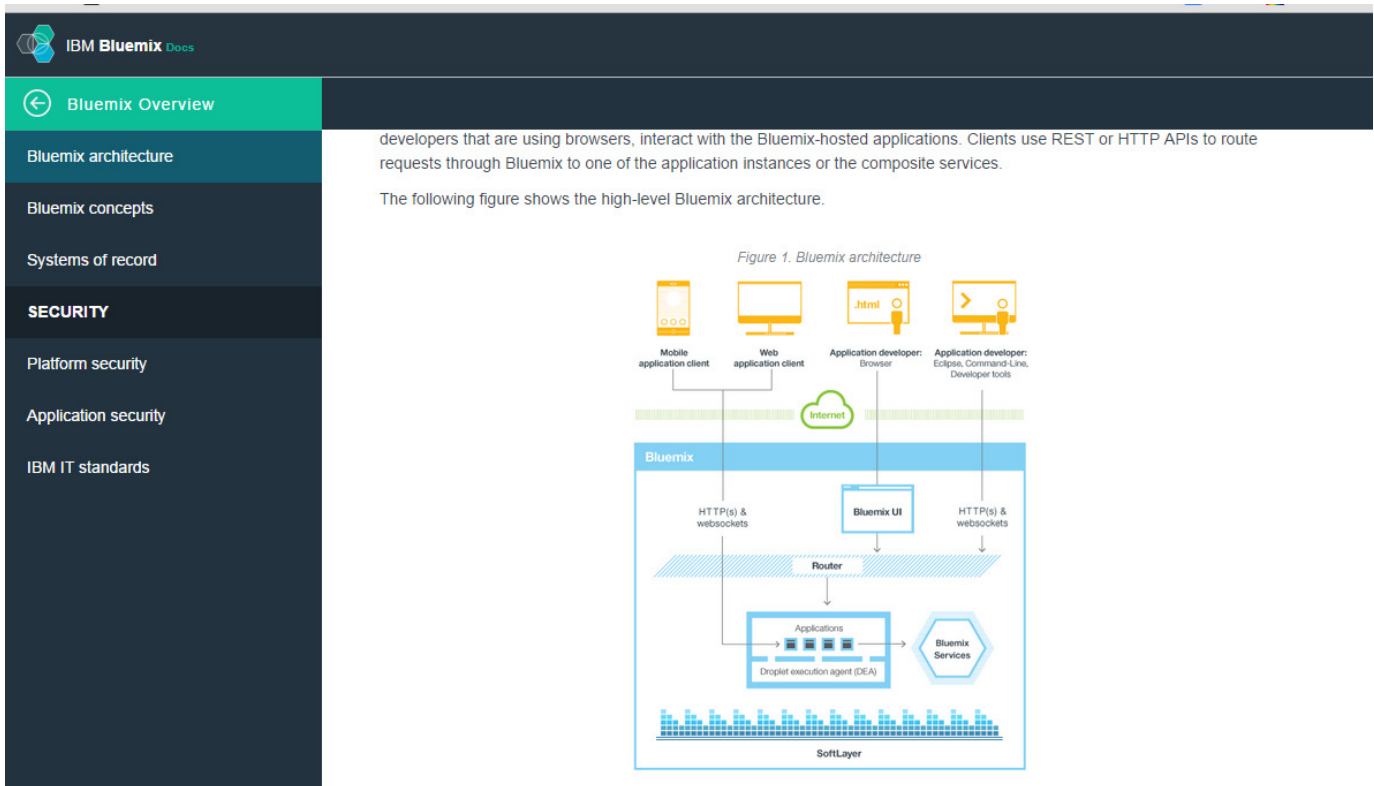
An add-on is a Bluemix extension that manages and monitors applications. Add-ons are not used by the running code, but provide functions to manage the application. You can use add-ons to provide many application

management functions that you might otherwise have to code into an application yourself. Some of these functions include:

Auto scaling to automatically increase or decrease the platform capacity by adding more application or service instances, Monitoring response time, performance, and availability, Agile application development planning, Secure integration with on-premises systems, Continuous delivery through automatic building, testing, and deployment.

Docs

This section provides a comprehensive documentation about the Bluemix platform and its architecture.

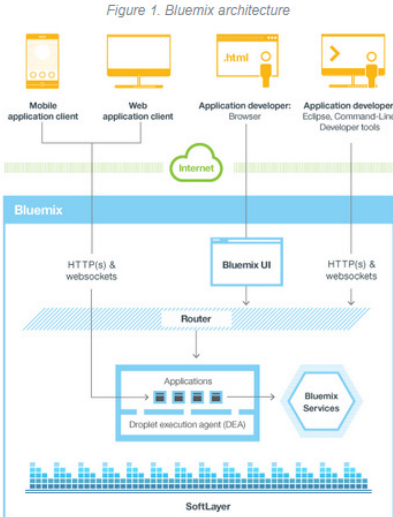


The screenshot shows the IBM Bluemix Docs interface. On the left is a dark navigation sidebar with the following items: 'Bluemix Overview' (highlighted in green), 'Bluemix architecture', 'Bluemix concepts', 'Systems of record', 'SECURITY', 'Platform security', 'Application security', and 'IBM IT standards'. The main content area contains the following text:

developers that are using browsers, interact with the Bluemix-hosted applications. Clients use REST or HTTP APIs to route requests through Bluemix to one of the application instances or the composite services.

The following figure shows the high-level Bluemix architecture.

Figure 1. Bluemix architecture



The diagram illustrates the Bluemix architecture. At the top, four client types are shown: 'Mobile application client' (mobile phone icon), 'Web application client' (desktop monitor icon), 'Application developer: Browser' (HTML editor icon), and 'Application developer: Eclipse, Command-Line, Developer tools' (IDE icon). These clients connect to the 'Internet' (cloud icon). The 'Bluemix' platform is shown as a central layer containing 'Bluemix UI', a 'Router', and 'Applications' (with a 'Droplet execution agent (DEA)' below them). 'Bluemix Services' are also shown. The entire Bluemix layer sits on top of the 'SoftLayer' infrastructure (represented by a server rack icon). Arrows indicate the flow of traffic from clients through the Internet, Bluemix UI, Router, and Applications to the underlying infrastructure.

Pricing

Checkout how much it costs. Good news for developers. There is enough free quota available even after the trial period is over to continue experiencing the awesome Bluemix platform and building cool applications.

How it works:

Runtimes

You are charged for the time that your apps run and the memory that is used, calculated as **GB-hours**.

Runtime is free during the 30 day free trial.
(Up to 2GB maximum in total instance memory.)

Up to 1125 GB-hours are free each month after the trial.
(Enough to run multiple apps each month. Allowance varies depending on runtime.)

Services and Add-Ons

Some services have plans, with **flat-rate pricing**. Select a plan and pay the plan price.

Some services have **metered pricing**. Pay based on your consumption of the service.

Many services provide **free allowances** every month.


Highlights

1. 30 days of free trial
2. Upto 1125 GB-Hours free each month after the trial period is over
3. Many service provide free allowances every month

Get access to the complete pricing sheet by clicking on the PRICING SHEET link.

Runtime Charges

Charged by the **GB-hour**.

Plan	Price	Monthly Usage
 Liberty for Java™		
Default		
<ul style="list-style-type: none">Run one or more apps free for 30 days (375 GB-hours free).	\$0.07 USD / GB-Hour	
	Instances	

Community

Get access to one of the largest developer community at developerworks and get your questions answered by experts and fellow developers. E

IBM developerWorks

IBM Bluemix™ Dev RESOURCES SUPPORT FORUM EVENTS BLOG

VIEW Bluemix

It's all about the answers

Questions Tags Users Badges Ask a Question

All Unanswered Unresolved Search Bluemix forum Search tips

All Bluemix questions

Sort by: Active Newest Likes

1977 questions
3672 answers

Answers	Likes	Views	Question Title	Tags	Author	Time
0	0	2	DataFormatException while loading data through Data Studio in BLU database	BLUEMIX DB2 STUDIO RSTUDIO DATA CSV	FFiE_soumitr... 11	1 hour ago
3	0	165	Fail to run blueList-mobiledata-mobileweb. --"Cannot retrieve the items at this time"	BLUEMIX BLUELIST WEB JAVASCRIPT MOBILECLOUD MOBILEDATA	deerstalker 11	1 hour ago
2	0	12	What can We do with Bluetooth & Bluemix?	BLUEMIX	6zQN_Robert... 3	2 hours ago
1	0	12	Can Bluemix help iOS be Java and Flash compatible?			

Top dW users

Tags

Bluemix Insight



Can't wait to get inside Bluemix?

Lets get inside Bluemix to explore more some of its awesome features and capabilities.

Go to [http://www.ibm.com/bluemix.net](http://www.ibm.com/bluemix)

SOLUTIONS CATALOG PRICING DOCS COMMUNITY SIGN UP LOG IN

Bluemix™ is now open!

Platform where developers can act like kids in a sandbox—
except this box is enterprise-grade.

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1. Click on LOG IN



One key, many possibilities.

Your IBM id provides access to services, communities, support, online purchasing, and much more.

Create IBM id

Sign in

debasis.das@in.ibm.com

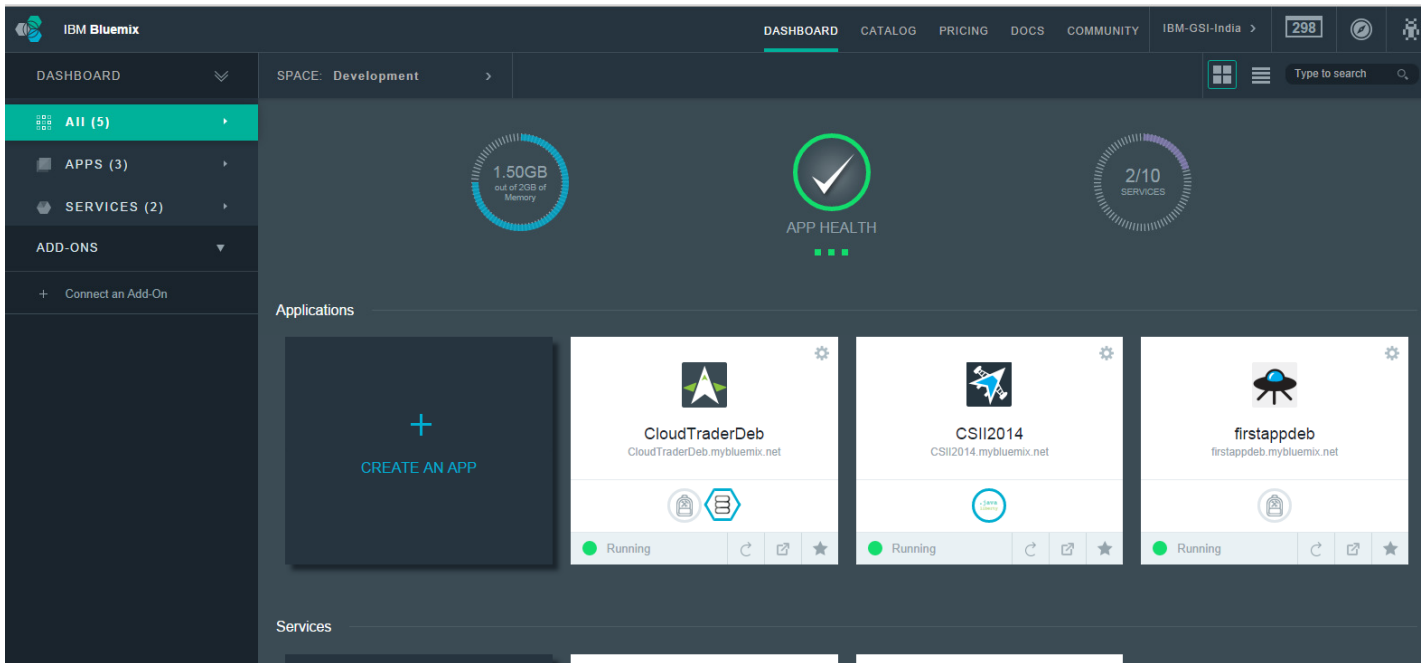
[Forgot password?](#)

Sign in

[Help and FAQ](#)

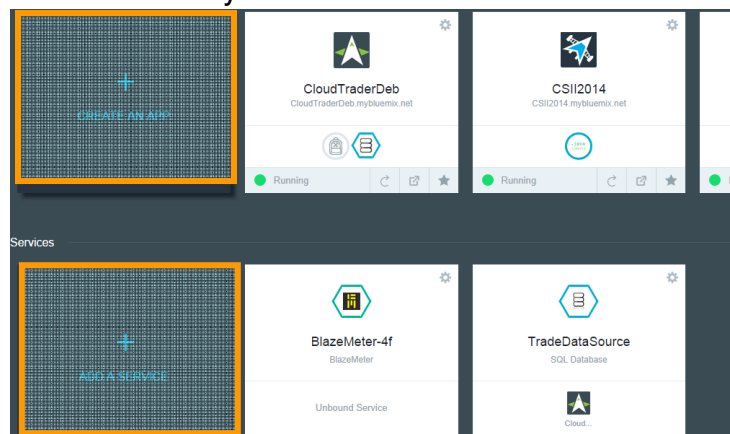
IBM Employees:
[Sign in with your intranet ID.](#)
[Link your Intranet ID and IBM id](#)

2. Enter your IBM ID and Password.
3. Welcome to Bluemix dashboard.



- Here you can view all your existing applications, status of those applications, Services that you are consuming, overall health of your application and memory consumption etc.

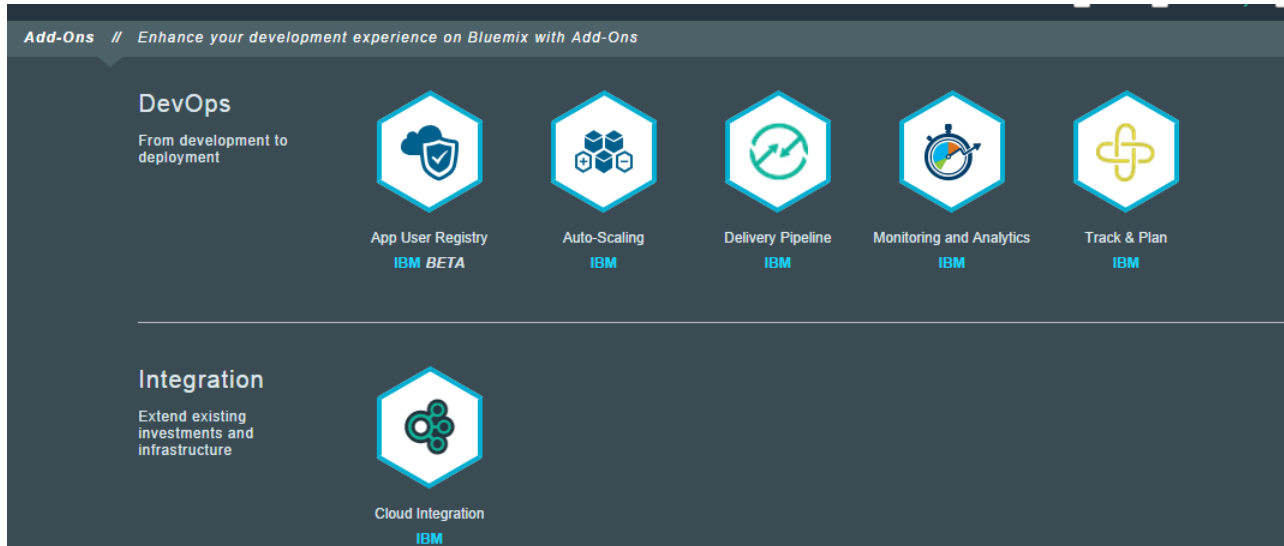
You can CREATE AN APP by clicking on the CREATE AN APP link. Similarly you can create a service instance by click on “ADD A SERVICE” link.



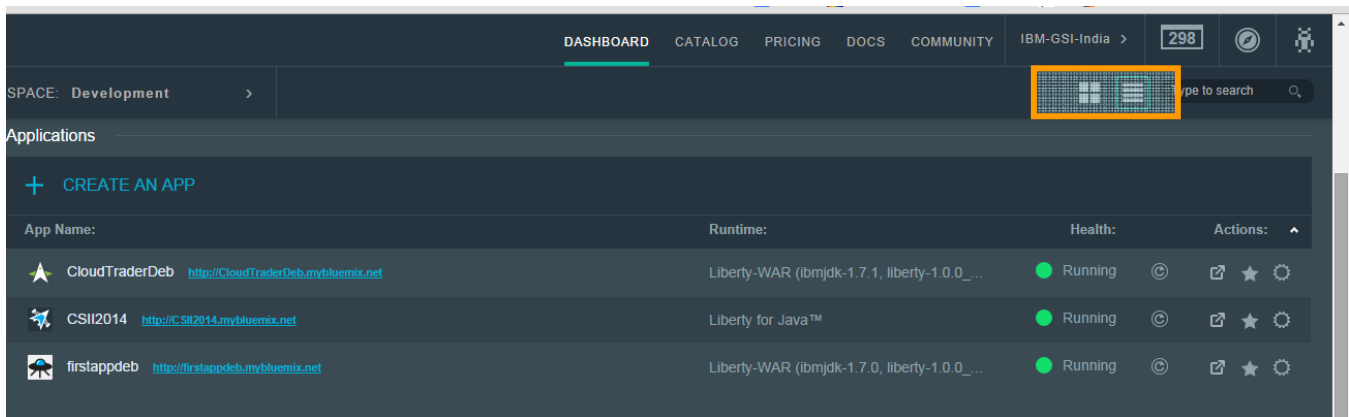
Navigate the left side menu to see only APPS or only SERVICES.

5. You can connect to an ADD ON by clicking on the Connect an Add On link on the left hand side menu.

See the available ADD ONs



6. Switch between Grid View and List View. List View can give a little bit more detail about your Apps and Services.

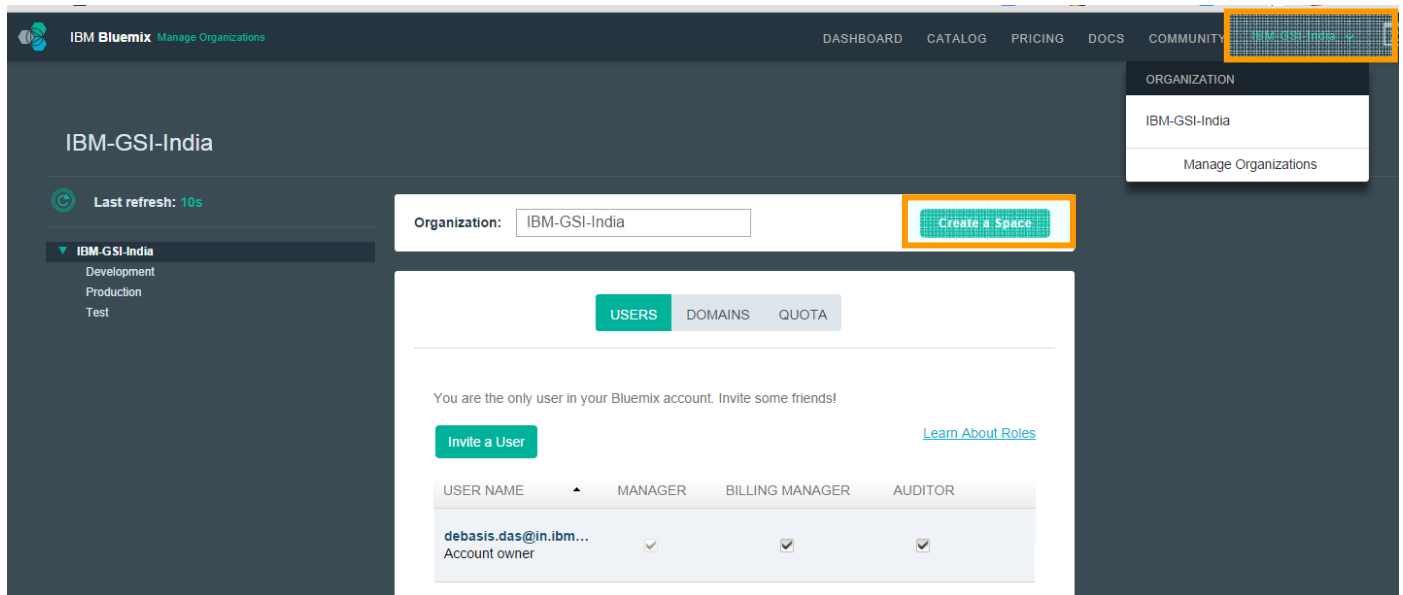


7. Manage your Bluemix environment by creating Organizations, spaces, domains, and inviting users to develop, manage and monitor your applications.

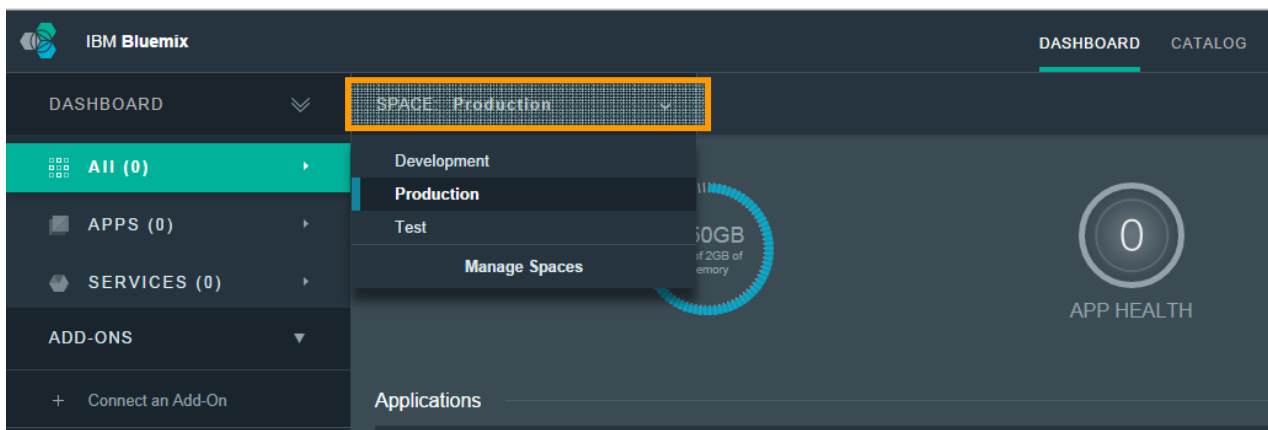
Setup your Organization and Spaces, users, domains etc by clicking on the link next to “Community”.

Learn more about Organizations and Spaces at

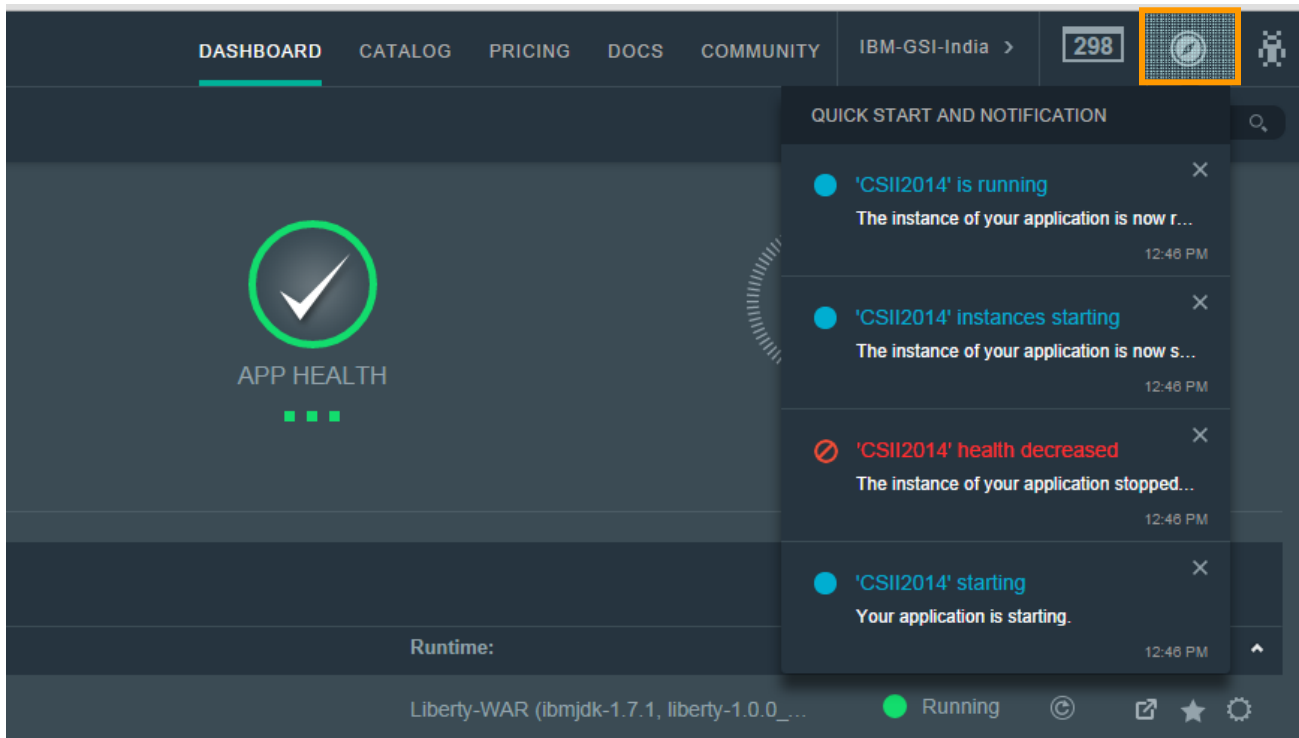
<https://www.ng.bluemix.net/docs/#acctmgmt/index.html#acctmgmt>



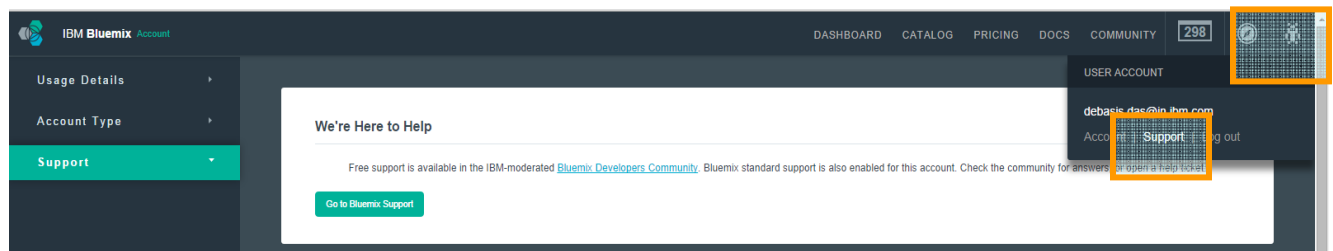
8. Go back to dashboard at any point in time by clicking on the DASHBOARD link at the top.
9. Move between spaces by clicking on the “SPACE” link as shown below.



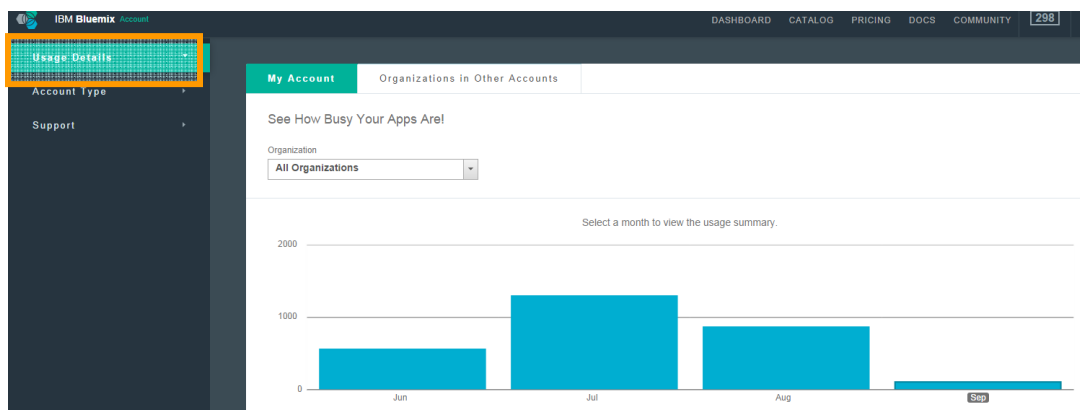
10. Get access to various Notifications by clicking on the Notification link at the top.



11. Get support by clicking on the Support link as show below.



12. Also explore Usage Details



Bluemix Experience



Lets build something cool using Bluemix.

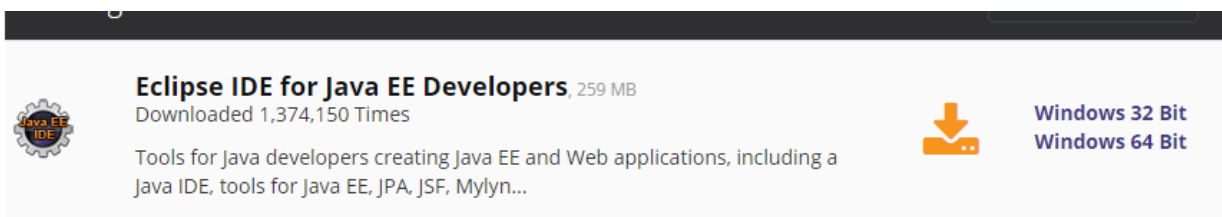
Most of the developers like to develop the application from the comfort of their own development environment and once the application is ready, deploy it on Bluemix. We will follow the same approach.

Background work

(ONLY READ. THESE STEPS 1-4 HAS ALREADY BEEN DONE FOR YOU).

1. Download and install the latest eclipse environment. This is already done for you. You can download your own copy of eclipse at

<http://www.eclipse.org/downloads/>



2. You can also interface with Bluemix through the Cloudfoundry **cf command line tool**. You can download and install the cf tool from <https://github.com/cloudfoundry/cli>

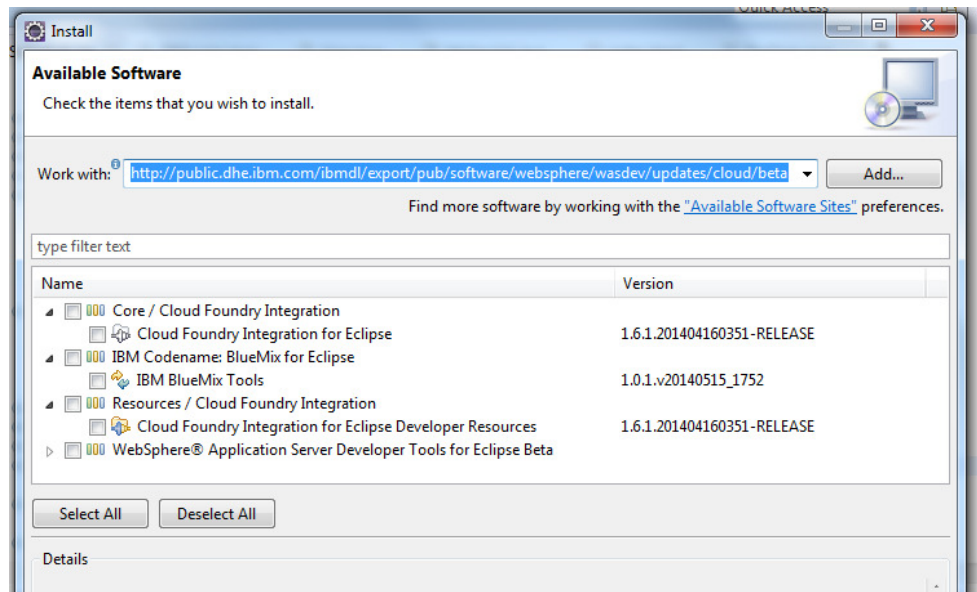
Scroll down to the Downloads section and select the appropriate binary based on your OS.

Windows installer can be downloaded from <http://go-cli.s3-website-us-east-1.amazonaws.com/releases/v6.5.1/cf-windows-amd64.zip>

Get detailed information about configuring cf for Bluemix at https://www.ng.bluemix.net/docs/#starters/BuildingWeb.html#install_cf

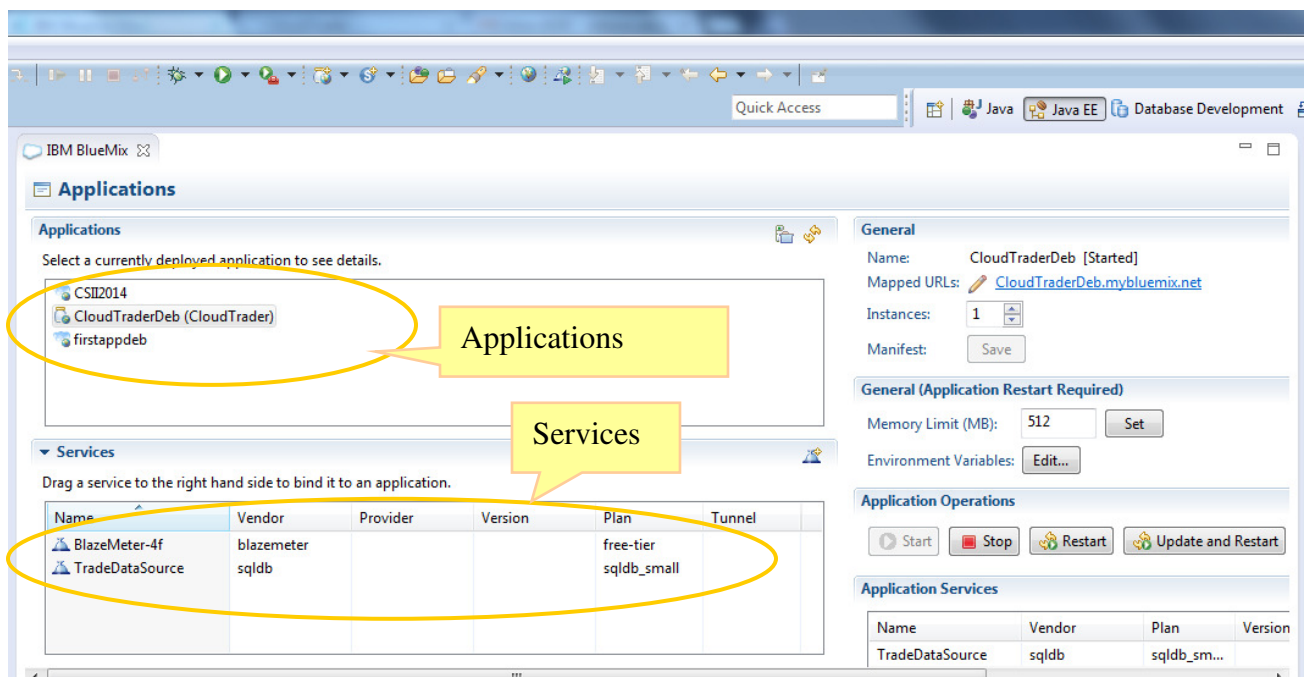
3. Install cloudfoundry and bluemix plugins from the below by clicking on Help->install New Software from inside eclipse.

<http://public.dhe.ibm.com/ibmdl/export/pub/software/websphere/wasdev/updates/cloud/beta>



4. Install the Liberty Profile if you want to work with IBM Liberty Profile. Follow the instructions from this website to install IBM Liberty profile.
https://developer.ibm.com/wasdev/docs/getting_started_with_the_was_liberty_profile/

You can deploy applications, and control the life cycle of your applications running on Bluemix from inside eclipse.



Lab Exercise

Lab Objectives

In this lab you'll learn how to create a Java EE benchmark application that runs on IBM Bluemix and makes use of the SQLDB Bluemix service. Once you create and use the application you'll also be able to use performance analysis capabilities provided as services on Bluemix.

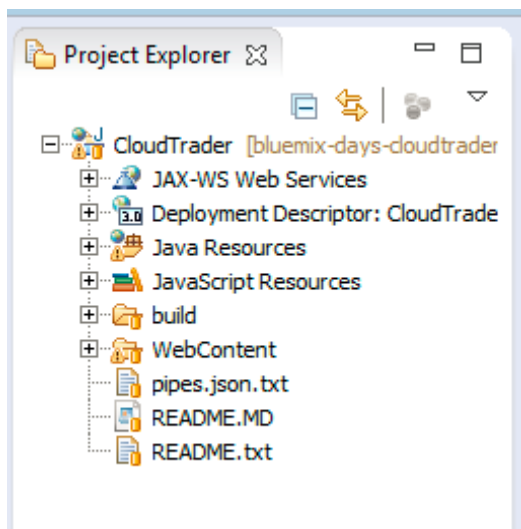
CloudTrader is a Java EE application which simulates an online stock trading system. This application allows users to login, view their portfolio, lookup stock quotes, and buy or sell stock shares. It is built primarily with Java Servlets, JSPs and JavaBeans. To showcase migrating existing applications to Bluemix and revitalizing them with services,.

Starting Eclipse

In this section you'll start Eclipse and load the workspace that will be used for this lab.

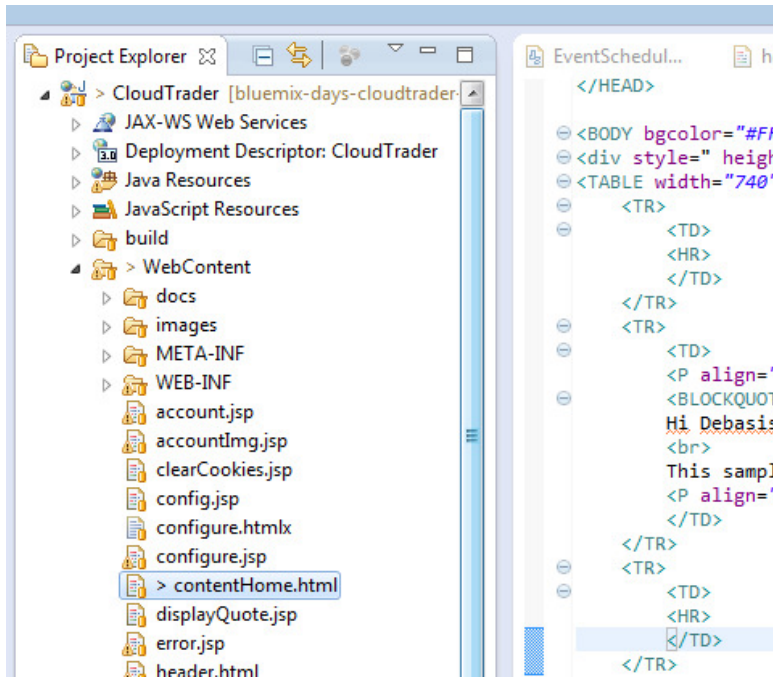
Step 1. Launch Eclipse from the desktop eclipse icon.

Step 2 Select the workspace \BluemixLabs\workspaces\CloudTrader when prompted and click OK. You should be able to see the project in the project explorer window.



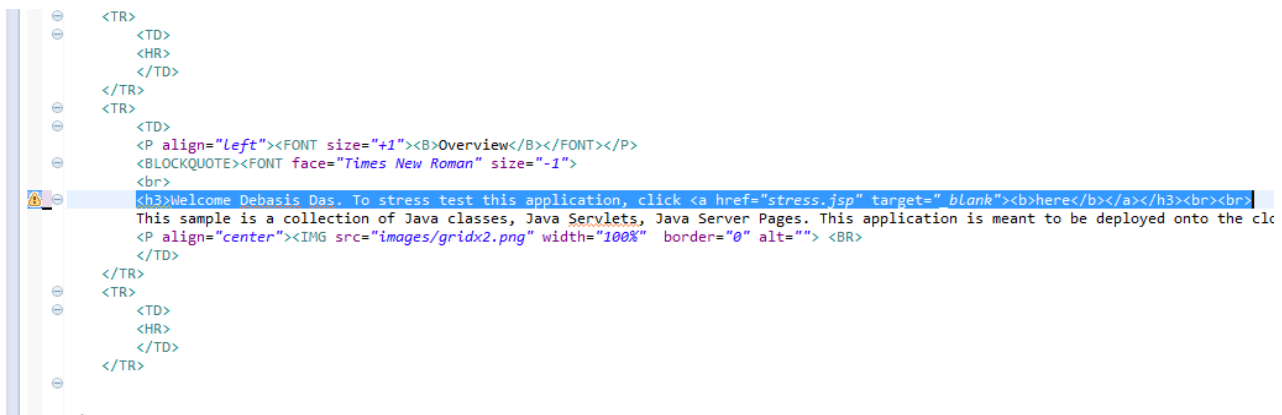
Modify the application a little bit.

Step 1 Expand the project and go to WebContent and open ContentHome.html.



Step 2 Replace the text "YOUR_NAME" with your name in the below text. Add the below text to the ContentHome.html file as shown below.

```
<h3>Welcome YOUR_NAME. To stress test this application, click <a href="stress.jsp" target="_blank"><b>here</b></a></h3><br><br>
```

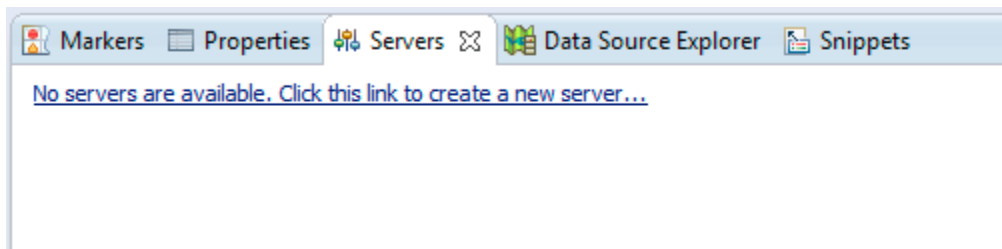


Step 3 Save the file.

Define the Bluemix Server

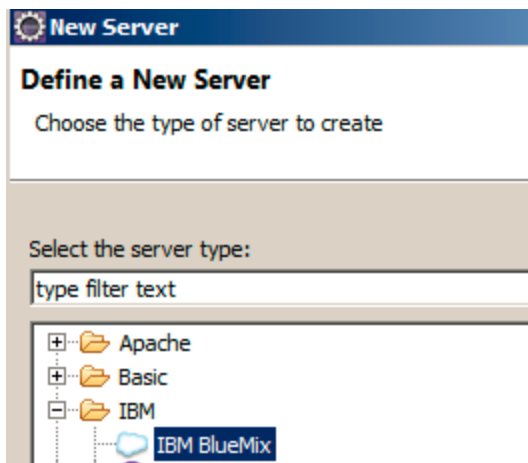
In this section you'll define the Bluemix server so you can automatically push your Eclipse code out to Bluemix when needed.

Step 1 Click on the **Servers** tab at the bottom of the Eclipse UI as shown below.

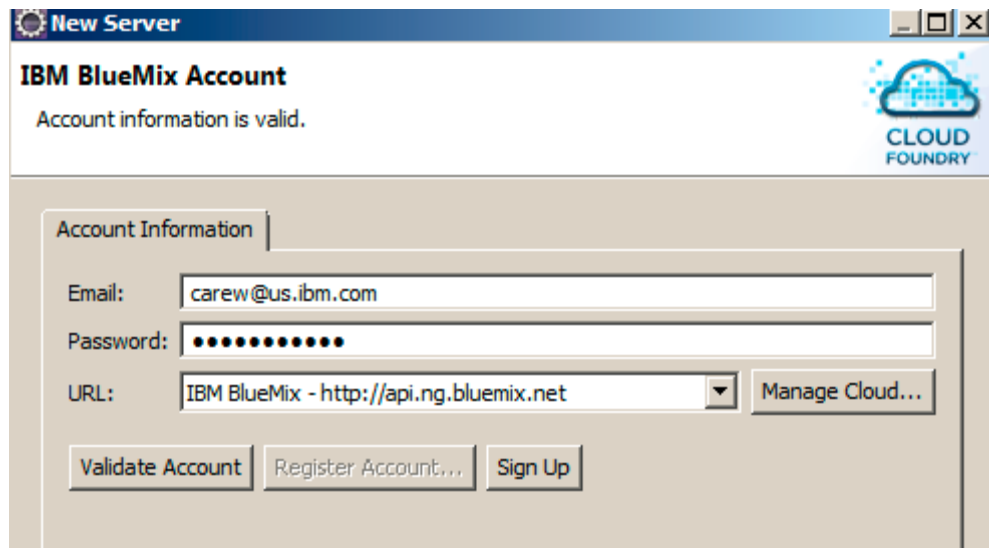


Step 2 Click the link labeled **...Click this link to create a new server.**

Step 3 Expand the **IBM** category and select **IBM Bluemix**. Click **Next**.

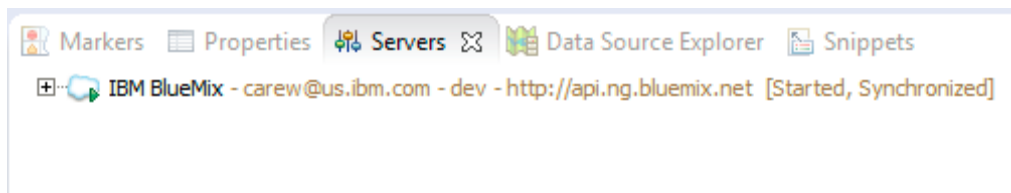


Step 4 In the next dialog enter your Bluemix credentials and click on **Validate Account**



Step 5 Verify that the dialog reports that your account is valid and then click **Finish**.

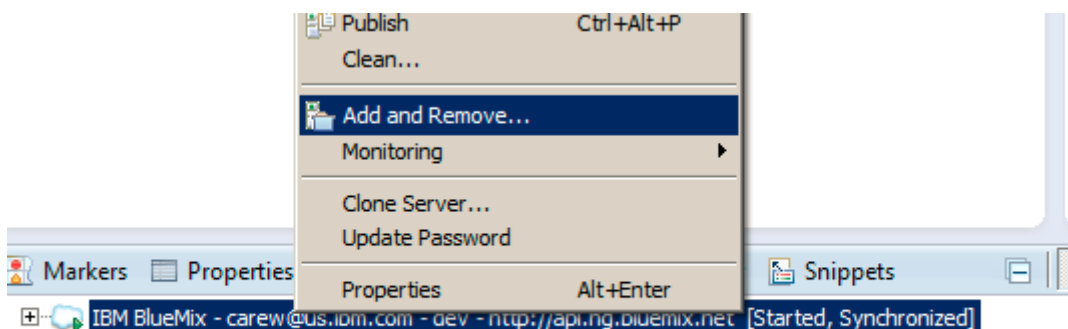
Step 6 Your server definition should now appear in the **Servers** tab



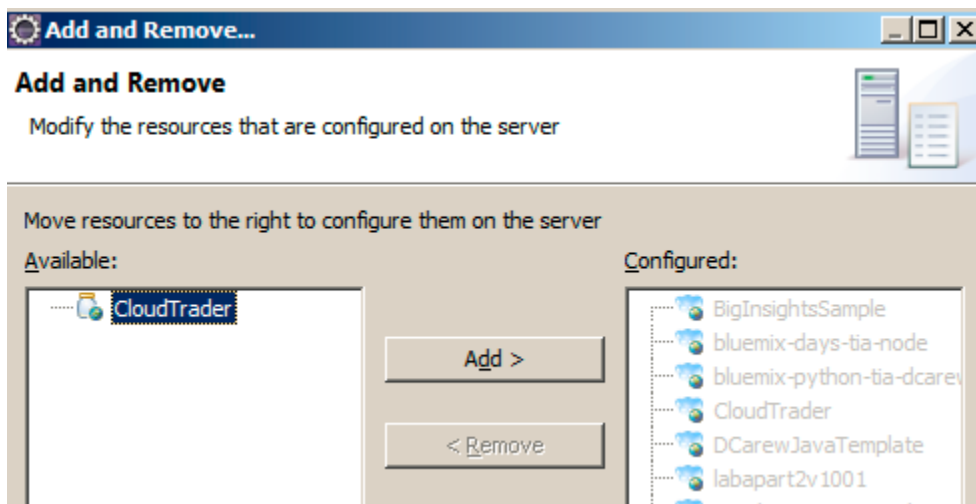
Push the application from Eclipse

In this section you'll push, create services and start your app all from within the same UI in Eclipse .

Step 1 Go back to Eclipse and from the **Servers** tab select your server, right click and select **Add and Remove** from the context menu



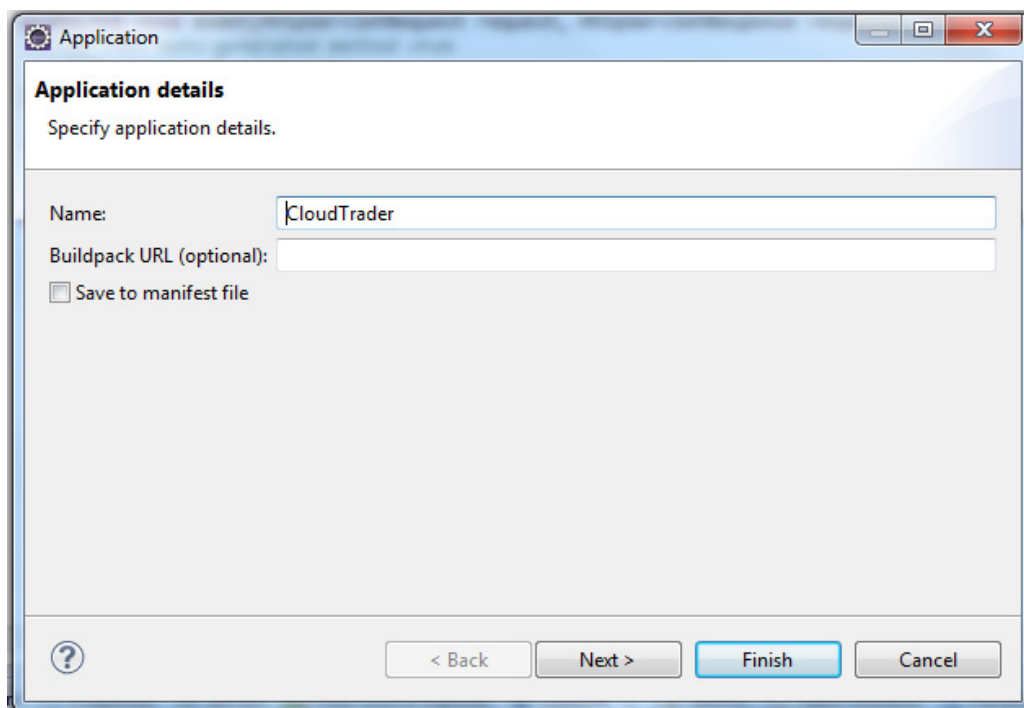
Step 2 Select the CloudTrader application and click **Add**.



Step 3 Click **Finish**. Click **Next** in the resulting dialog

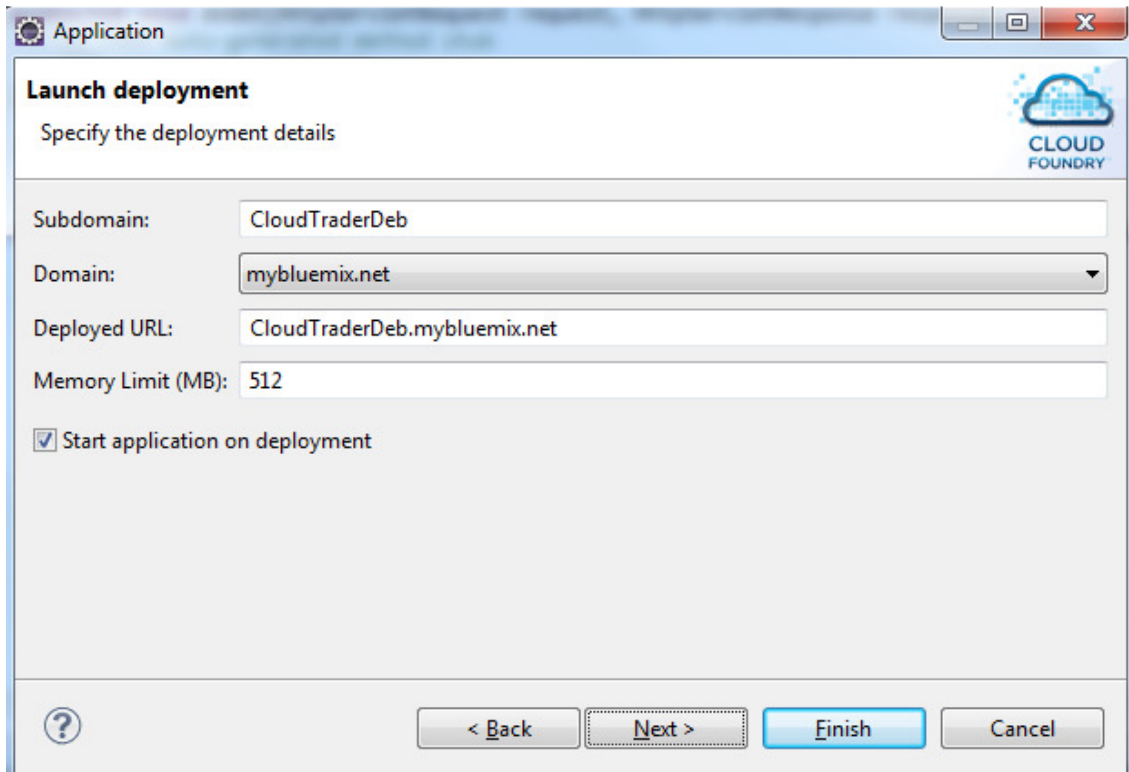
Step 4 Give a unique name to the (eg your first initial + last name) application since this has to be unique system-wide. Leave Buildpack URL blank. (Bluemix picks up the appropriate buildpack automatically based on the application).

Click **Next**.

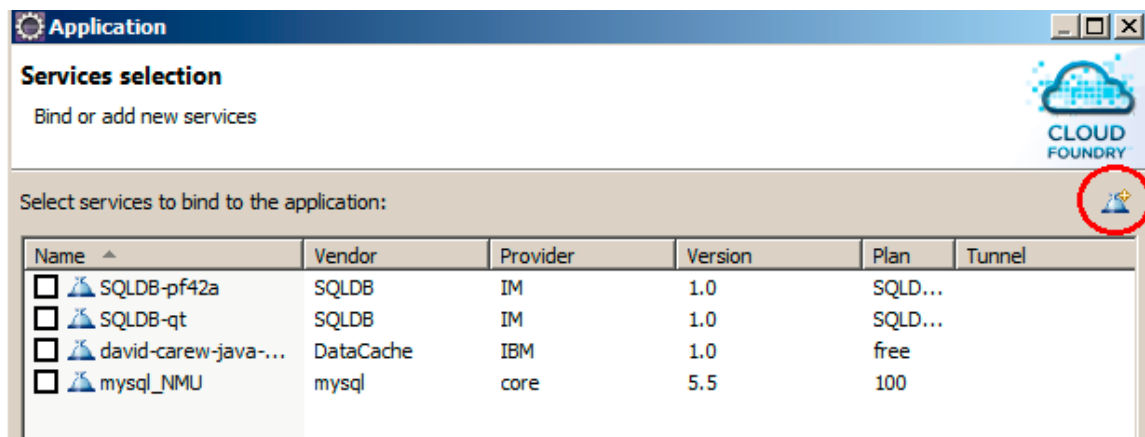


Step 5 Check the deployment details, before the application is deployed to Bluemix. Set the memory limit for your application to 512MB (as shown below).

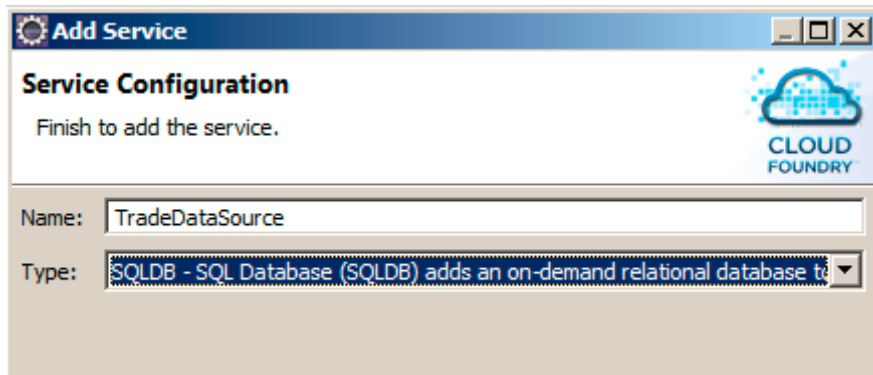
Click Next.



Step 6 Click the highlighted icon on the top right corner to add a new service

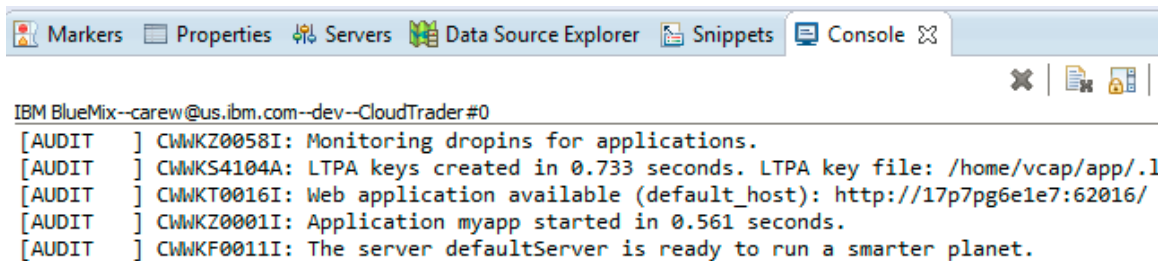


Step 7 Name the service **TradeDataSource** and select **SQLDB** as the **Type**. Click **Finish**. Please note that the service must be named **TradeDataSource**, else the application will not work.



Step 8 Click **Finish** to push and start your application.

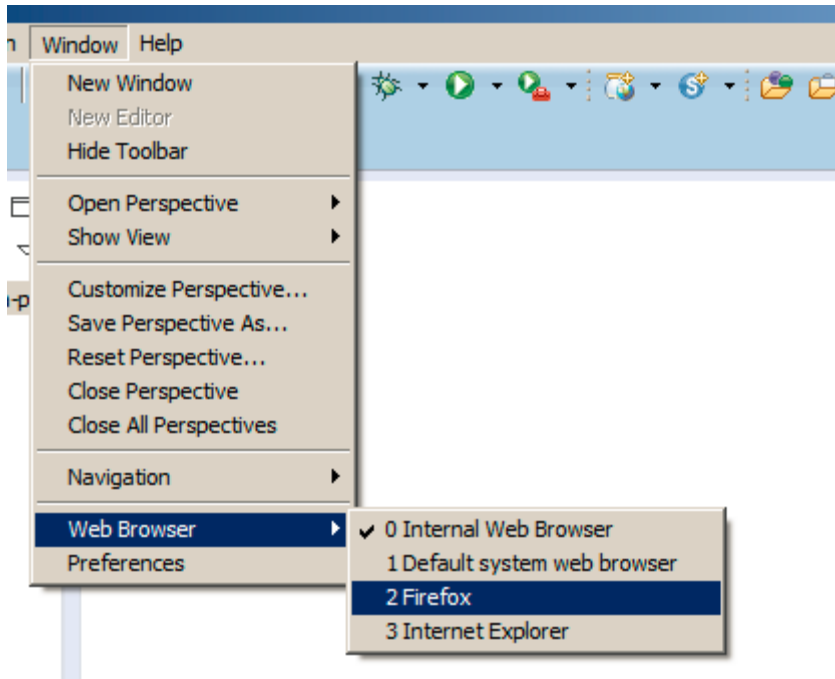
Step 9 Messages should start appearing on the console. Wait for the message that says *The server defaultServer is ready to run a smarter planet.*



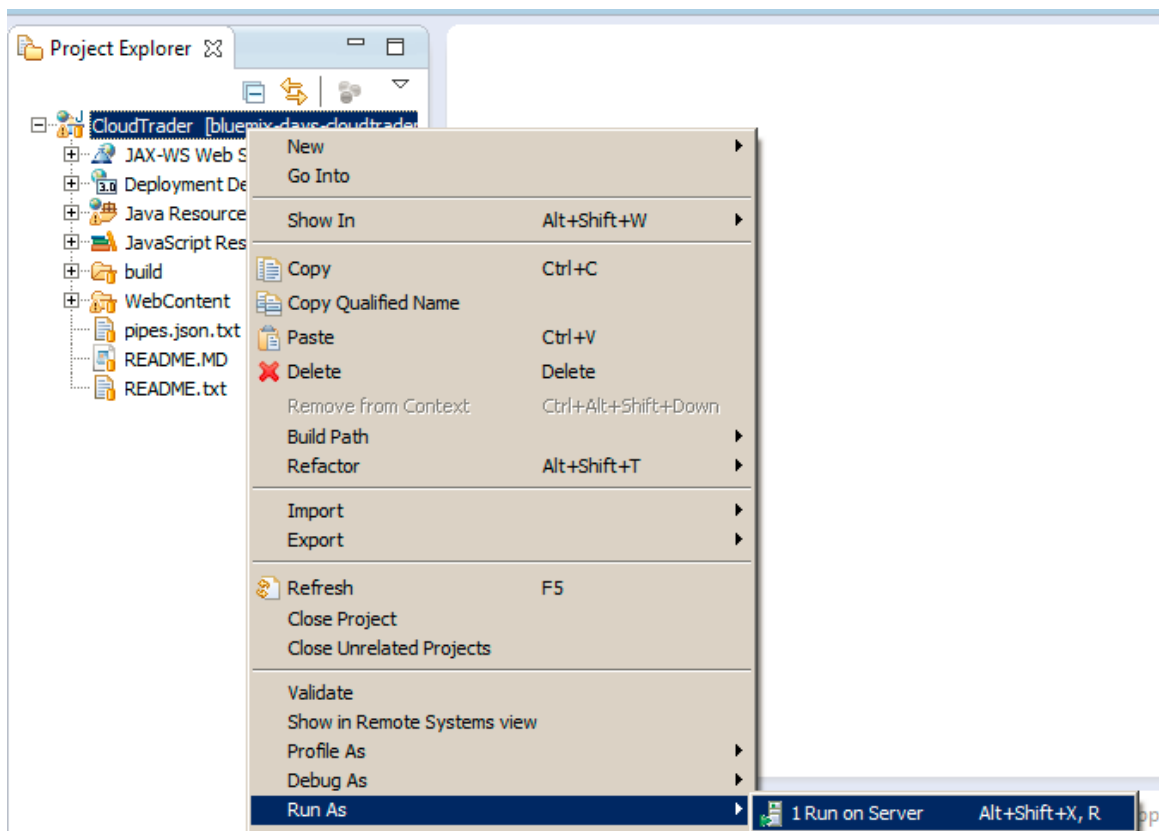
Running the application

Now that the application has been deployed and started, you can run it from inside Eclipse

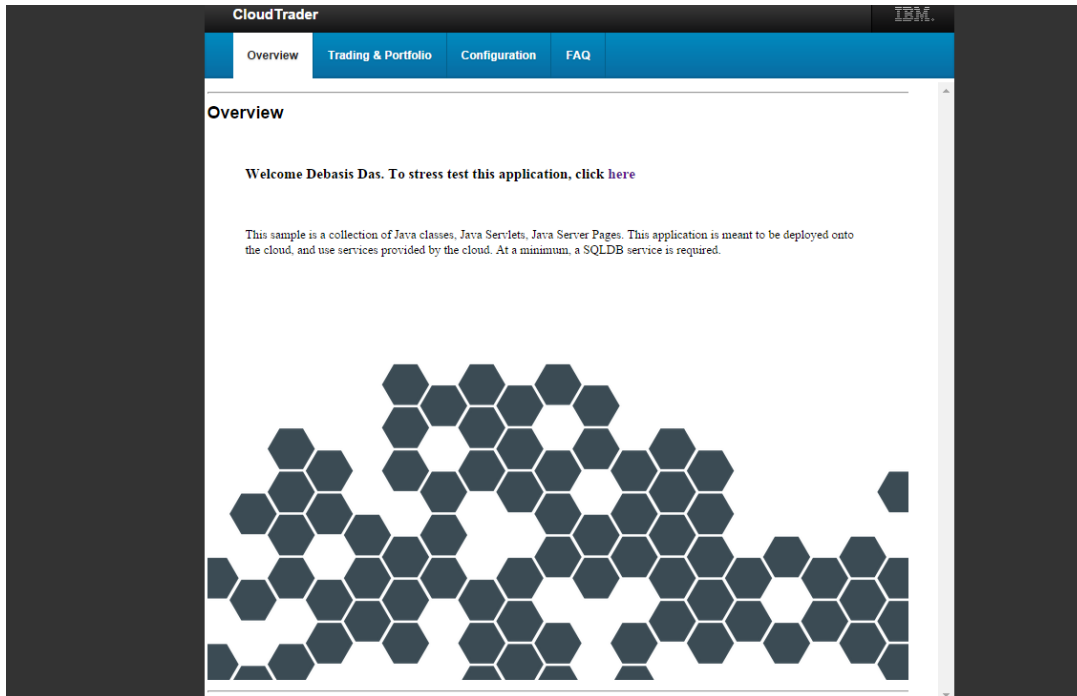
Step 1 From the Eclipse menu select **Window>Web Browser** and then select one of your installed Web browsers.



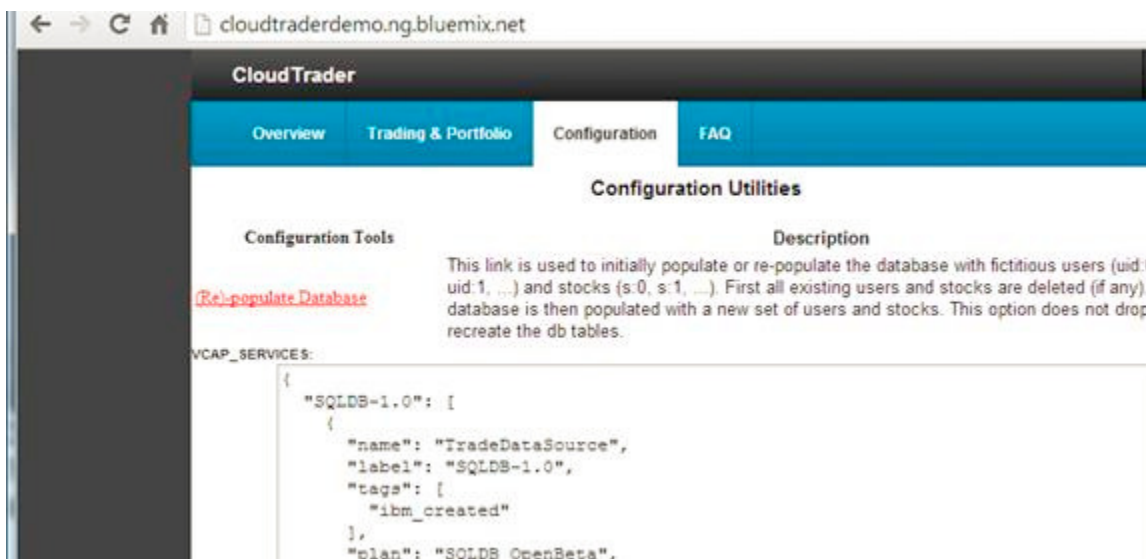
Step 2 In the **Project Explorer** select your project, right click and then select **Run As->Run on Server** from the context menu.



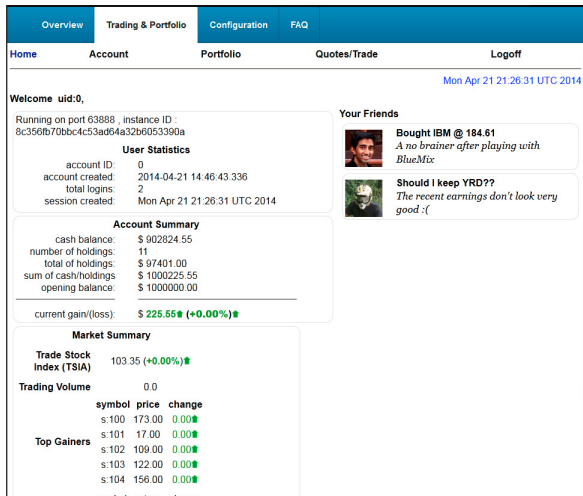
Step 3 Click on **Finish** in the resulting dialog. The browser you selected in Step 1 should launch the application. Notice the change that you have made in the source code, appears on this page.



Step 4 Click on the Configuration tab and click “(Re)-populate Database” to populate your DB2 database with initial users and stocks. Verify that you see a message that says **Trade Database Built - 50 users created**



Step 5. Click on the **Trading & Portfolio** tab and login to start buying and selling stocks.



Step 6 Click on **Account** to view account details, **Portfolio** to view your holdings and **Quotes/Trade** to buy or sell holdings.

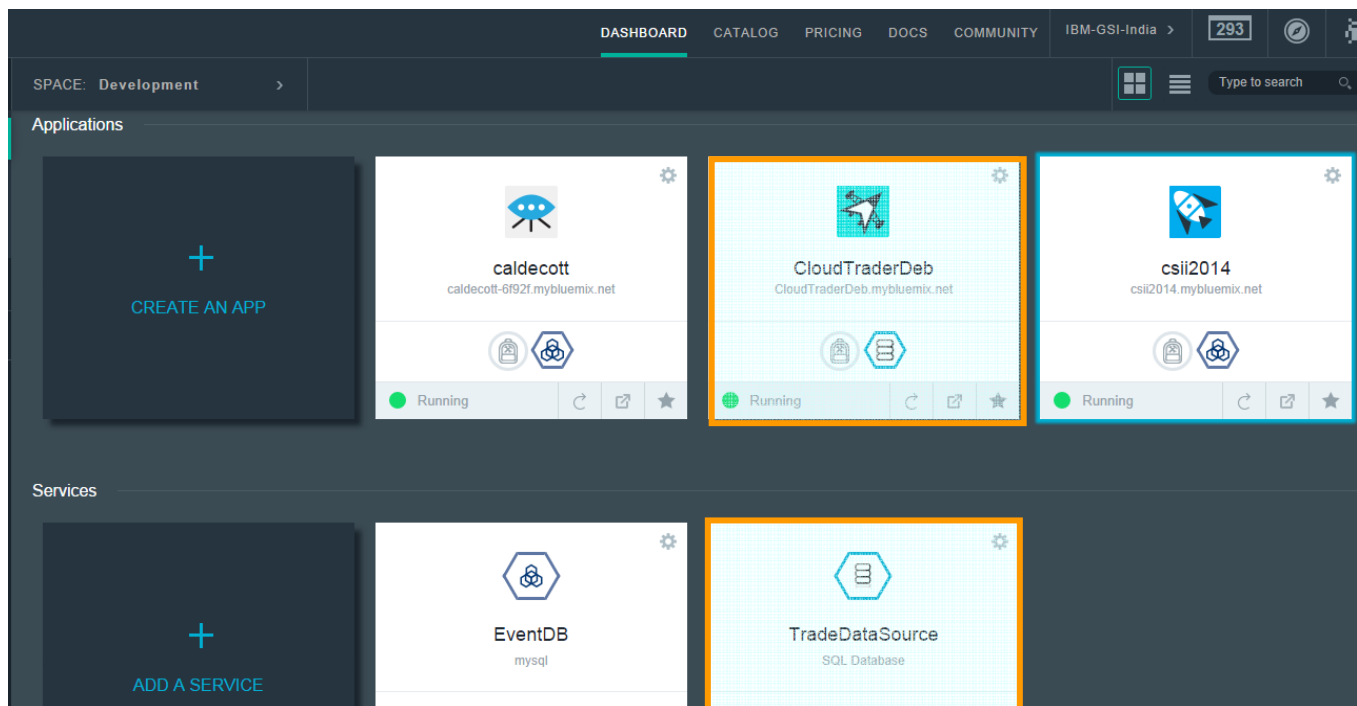
Step 7 Click the **FAQ** tab to see notes on the underlying “Trade” application design including message driven beans, caching, performance benchmarking and application primitives

Inspect your Application and Service on Bluemix

Step 1. Browse to the location <http://www.bluemix.net>

Step 2. Login if prompted.

Step 3. View the dashboard. Check the application and the service you created in the last exercise.



Step 4 Click on the CloudTrader application.

In this page You can scale your application by increasing the number of instances under the “INSTANCES”.

You can change the memory quota for your application under “MEMORY QUOTA” Click on the SAVE button, once you have made the changes.

The screenshot displays the CloudTrader application management interface. The header shows the application name "CloudTraderDeb" and a settings icon. Below the header, there are navigation options: "VIEW GUIDE", "ROUTES: CloudTraderDeb.mybluemix.net", and "ADD GIT". The main content area is divided into several sections. On the left, there are three buttons: "ADD A NEW SERVICE", "BIND A SERVICE", and "CONNECT AN ADD-ON". In the center, there is a card for the "LIBERTY-WAR (IBMJK-1.7.1, LIBERTY-1.0.0_MASTER)" application. This card has a settings icon and a table with columns for "INSTANCES", "MEMORY QUOTA", and "AVAILABLE MEMORY". The "INSTANCES" column shows "1", "MEMORY QUOTA" shows "512 (MB/Instance)", and "AVAILABLE MEMORY" shows "896.0MB". There are "RESET" and "SAVE" buttons next to the "AVAILABLE MEMORY" value. To the right of the application card, there is an "APP HEALTH" section with a green checkmark and the text "Your app is running.", along with "RESTART" and "STOP" buttons. Below that is an "ACTIVITY LOG" section with the text "No activity available". At the bottom right, there is a button labeled "Estimate the cost of this app" with a right-pointing arrow.

Step 5 Ever wondered what are the credentials for connecting to the TradeDataSource service? And how the application connects to the Service? Find all the details by clicking on the “Show Credentials” link under the TradeDataSource service.

Click on the “RESET” or “SAVE” button to reject or accept any changes you might have made on this page.

LIBERTY-WAR (IBMJDK-1.7.1, LIBERTY-1.0.0_MASTER)

INSTANCES: 2 | MEMORY QUOTA: 384 (MB/Instance) | AVAILABLE MEMORY: 640.0MB

APP HEALTH: Your app is running. [RESTART] [STOP]

ACTIVITY LOG: No activity available

Estimate the cost of this app [→]

SQL Database TradeDataSource

Show Credentials [▼] sqldb_small

```

Instantiating Credentials
{
  "sqlDb": {
    "name": "TradeDataSource",
    "label": "sqlDb",
    "plan": "sqlDb_small",
    "credentials": {
      "port": 50000,
      "db": "I_402231",
      "username": "gzgwmole",
      "host": "23.246.224.205",
      "hostname": "23.246.224.205",
      "jdbcurl": "jdbc:db2://23.246.224.205:50000/I_402231",
      "uri": "db2://gzgwmole:FczxzFlmcujz@23.246.224.205:5000",
      "password": "FczxzFlmcujz"
    }
  }
}

```

Step 6 Explore TradeDataSoruce. Click on TradeDataSoruce Service. Once you are on the below screen, Click on the “LAUNCH” button.

TradeDataSource [DOCS]

SQL Database

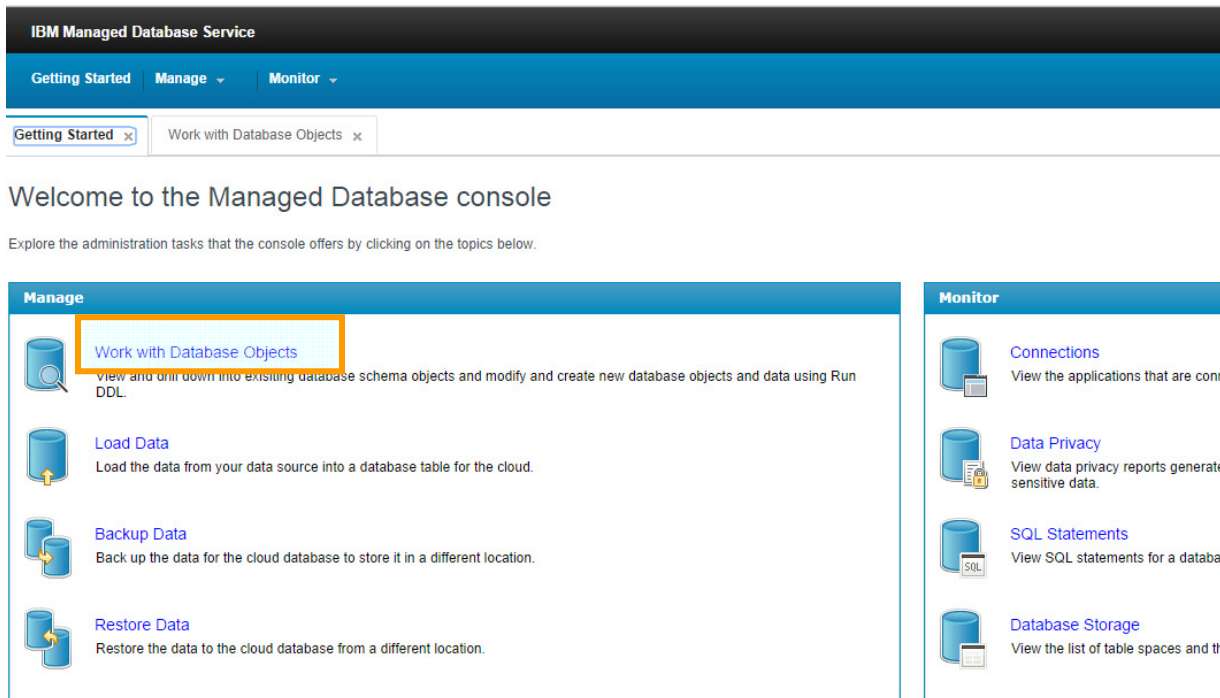
[LAUNCH]

Get ready to use the managed SQL database to handle your web and transactional workloads. Launch the easy to use web console to start quickly managing and monitoring your data.

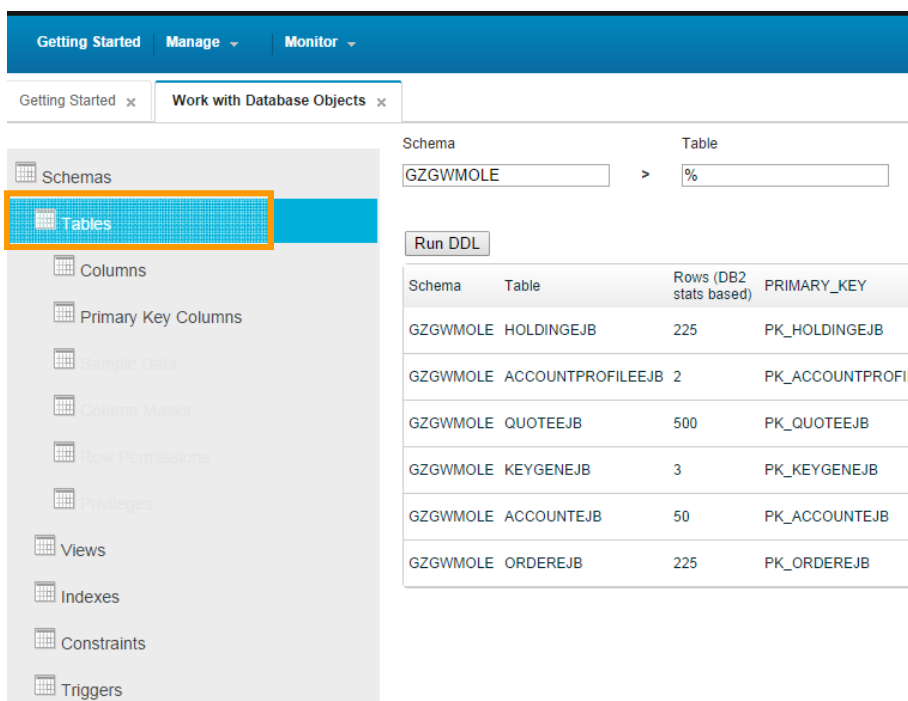
Manage Your Data
Easily load your data into the cloud and work with your database objects. On demand and automatic daily backups ensure that your data is safe.

Monitor Database Activity
Seamlessly monitor connected applications and database storage. Quickly receive reports on sensitive data to exploit data masking.

Step 7 Click on “Work with Database Objects”. Click on the Schema GZGWMOLE. Schemas are present for the system database tables and one for user tables, select the one for user tables (last one in the list)



Step 8 You should be presented with the tables our Cloud Trader application is using, there are tables for the various entities used in the application such as Accounts, stock transaction Orders and Quotes.



Step 9 Select a table to inspect its columns:

Getting Started Manage Monitor

Getting Started x Work with Database Objects x

Database: TradeDataSource (L_402231)

View database object or click a row to drill down to

Schema: GZGWMOLE > Table: ORDEREJB > Column: %

Run DDL 0 - 1

Schema	Table	COLNAME	TYPENAME	LEN
GZGWMOLE	ORDEREJB	ORDERFEE	DECIMAL	14
GZGWMOLE	ORDEREJB	COMPLETIONDATE	TIMESTAMP	10
GZGWMOLE	ORDEREJB	ORDERTYPE	VARCHAR	250
GZGWMOLE	ORDEREJB	ORDERSTATUS	VARCHAR	250
GZGWMOLE	ORDEREJB	PRICE	DECIMAL	14
GZGWMOLE	ORDEREJB	QUANTITY	DOUBLE	8
GZGWMOLE	ORDEREJB	OPENDATE	TIMESTAMP	10
GZGWMOLE	ORDEREJB	ORDERID	INTEGER	4

Step 10 Select **Sample Data** (on the left) to see some of the data in the selected table

Getting Started Manage Monitor

Getting Started x Work with Database Objects x

Database: TradeDataSource (L_402231)

View database object or click a row to drill down to related object

Schema: GZGWMOLE > Table: ORDEREJB

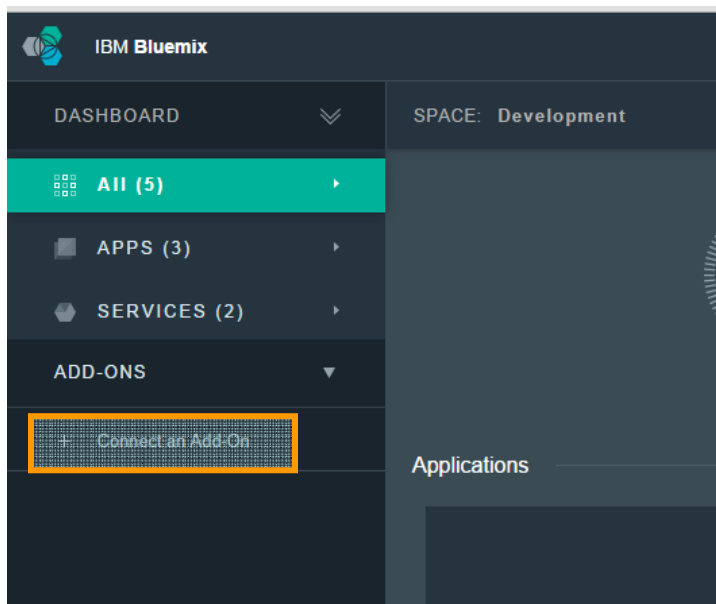
Run DDL 0 - 101

ORDERFEE	COMPLETIONDATE	ORDERTYPE	ORDERSTATUS	PRICE	QUANTITY	OPENDATE	ORDERID	ACCOUNT_ACCOUNTID	Q
24.95	2014-09-09 05:54:19.681	buy	closed	162	16.0	2014-09-09 05:54:19.553	0	1	s:
24.95	2014-09-09 05:54:19.778	buy	closed	31	60.0	2014-09-09 05:54:19.699	1	1	s:
24.95	2014-09-09 05:54:19.879	buy	closed	171	180.0	2014-09-09 05:54:19.84	2	1	s:
24.95	2014-09-09 05:54:19.974	buy	closed	73	189.0	2014-09-09 05:54:19.936	3	2	s:
24.95	2014-09-09 05:54:20.022	buy	closed	79	154.0	2014-09-09 05:54:19.995	4	2	s:
24.95	2014-09-09 05:54:20.082	buy	closed	45	101.0	2014-09-09 05:54:20.037	5	2	s:
24.95	2014-09-09 05:54:20.119	buy	closed	121	44.0	2014-09-09 05:54:20.101	6	2	s:
24.95	2014-09-09 05:54:20.15	buy	closed	27	84.0	2014-09-09 05:54:20.133	7	2	s:
24.95	2014-09-09 05:54:20.237	buy	closed	48	39.0	2014-09-09 05:54:20.219	8	4	s:

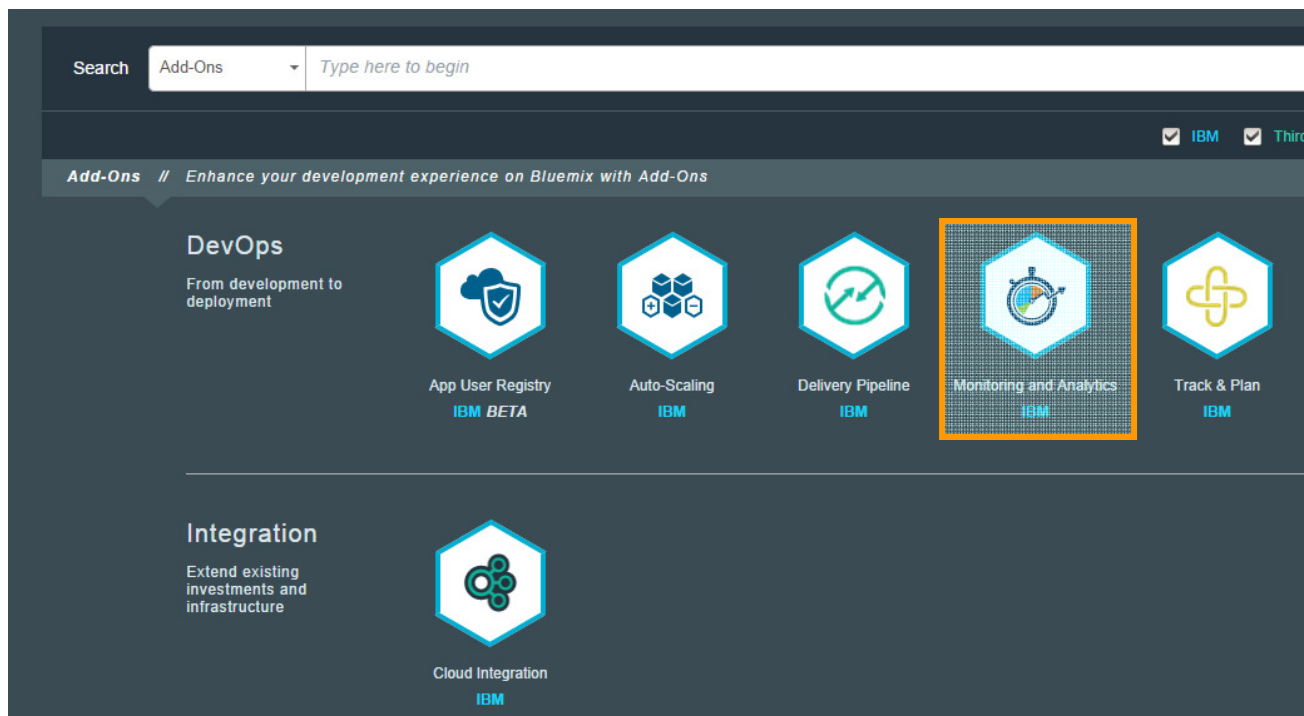
Add “Monitoring and Analytics” and Auto-Scaling Add-Ons to your application

Step 1 With your browser open the Bluemix url <http://www.bluemix.net> and login if necessary

Step 2 Scroll down to **Add-Ons** section and click the button **CONNECT AN ADD-ON**.



Step 3 Click on the icon for the **Monitoring and Analytics** service in the **Add-Ons** section



Step 4 Select “Space”, “App” and “Plan” on the right side of the page appropriately and click on the “CREATE” button. If asked to “RESTAGE” application, click ok.

Gain the visibility and control you need over your application. Determine the response time your users see, understand the performance and availability of the application components, and leverage analytics to keep your application up and performing well.

Pick a plan Monthly prices shown are for: [India](#)

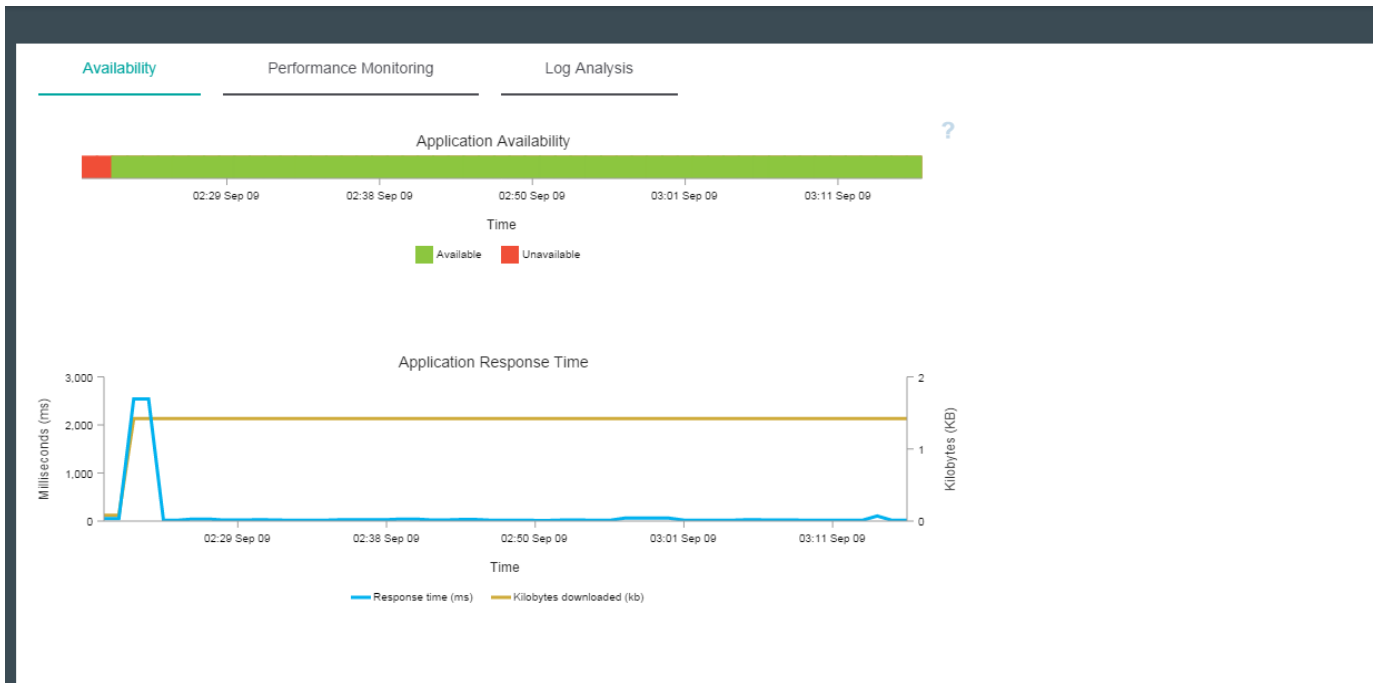
Plan	Features	Price
✓ Free	Health and Availability of your applications Performance Monitoring for Liberty and Node.js applications Log Analytics for Liberty and Node.js applications	Free
Diagnostics	Health and Availability of your applications Performance Monitoring for Liberty and Node.js applications Log Analytics for Liberty and Node.js applications Enhanced Performance Monitoring including slowest web modules and database connection information for Liberty applications Diagnostic deep dive on HTTP requests for Node.js applications	₹1.81 INR/Application Instance-Hour

Availability, Performance Monitoring, and Log Analytics

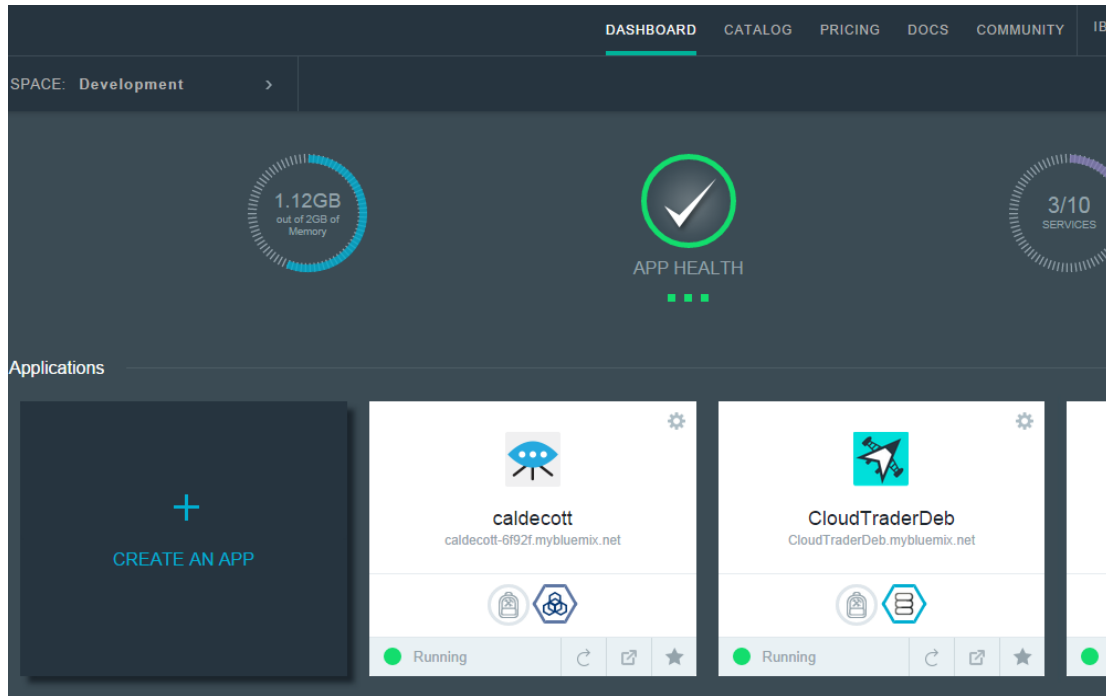
Select an application

- caldecott caldecott-6f92f.mybluemix.net
- CloudTraderDeb CloudTraderDeb.mybluemix.net
- csii2014 csii2014.mybluemix.net
- Leave unbound

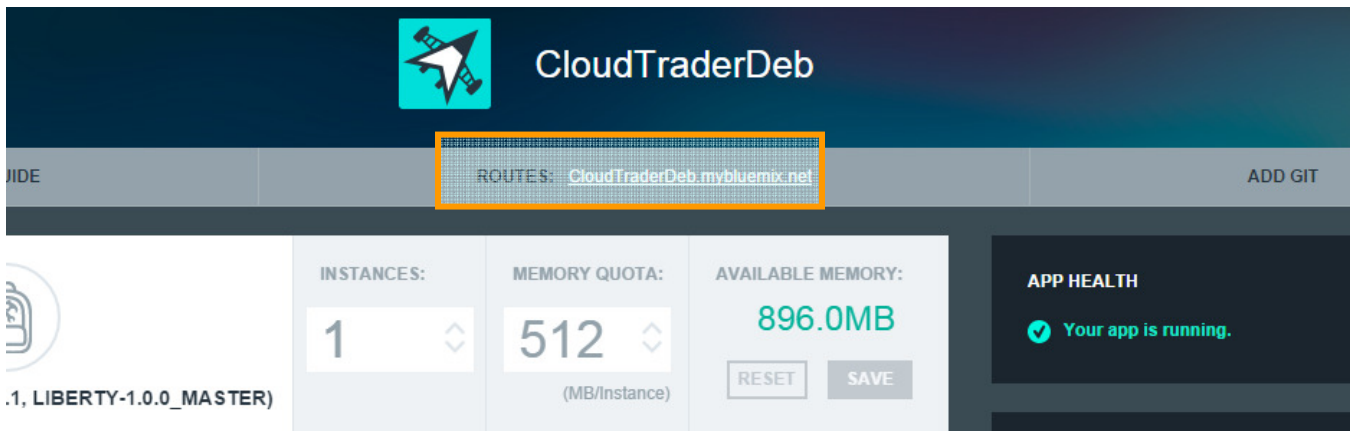
Step 5 Click on “Monitoring and Analytics”.



Step 6 Click on the Dashboard link at the top and then click on the cloudTrader application.



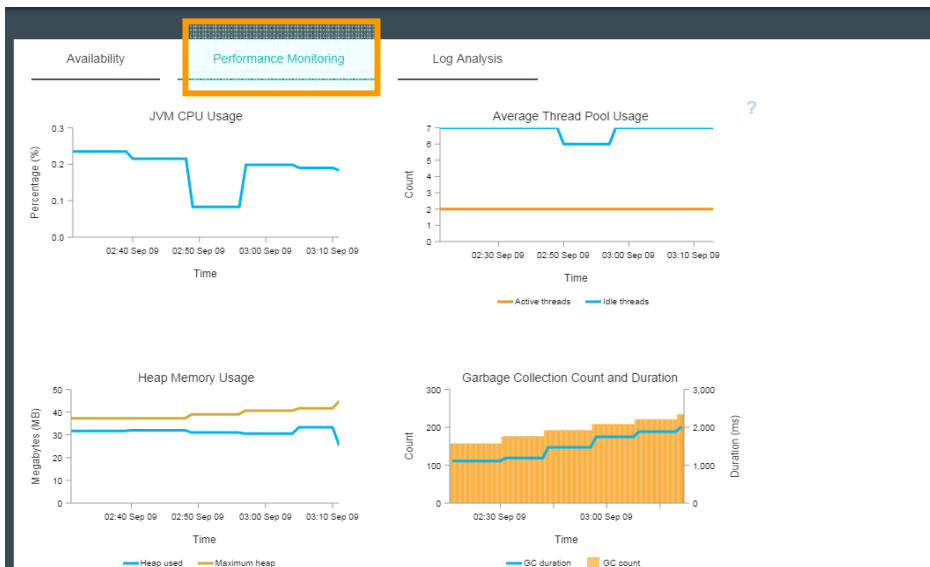
Step 7 Click on the Router link to go the CloudTrader Application.



Step 8 Click on the Stress test link on the home page as show below. Let the resulting stress test run for about 30 seconds and then close the browser tab



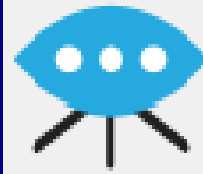
Step 9 Go back to the Monitoring and Analytics screen and click on “Performance Monitoring” tab.



The Performance Monitoring tab provides resource metrics about your Bluemix Liberty application.

- Recent data is displayed so that you can answer the following questions:
- Have there been any unusual spikes in CPU usage?
- How much heap memory has my application been using and is it within acceptable limits?
- What is my application's thread pool usage, and is it what I expected?
- How frequently and for what duration has garbage collection run and might that impact performance?

Bluemix Experiment



Do it yourself

1. Make your application Scalable. Define your scaling policies.
2. Deploy your application from command line using the **cf** command line tool.
3. Create two Spaces. One for Development and another for Testing.
4. Check out the log files for your application.

Thanks for visiting IBM Bluemix Experience Center.