

League Info Server



Documentation

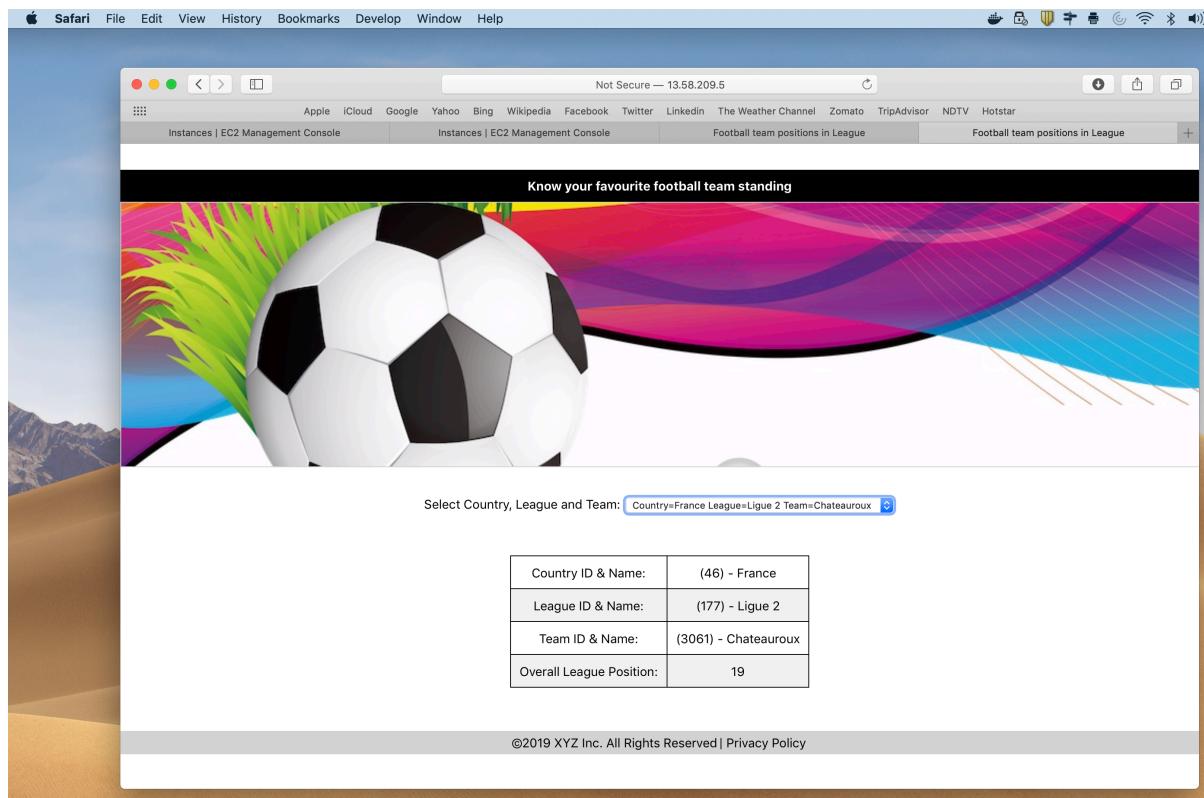
Covers Architecture, API Specification using Swagger, Cross Browser & Device UI Testing, UI Unit Testing, UI Automated Testing, Security Testing, Service Unit & Integration Testing, API Performance Testing, Jenkins Pipeline setup, Tech stack used, Deployment structure, Code structure

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Accessing the Service

You can access the service from this URL: <http://13.58.209.5:8080>



Accessing the API from Swagger

You can also access the core API via swagger using this URL: <http://13.58.209.5:8080/v1/swagger-ui.html>

The screenshot shows a web browser window with the following details:

- Address Bar:** Not Secure — 13.58.209.5
- Toolbar:** Apple, iCloud, Google, Yahoo, Bing, Wikipedia, Facebook, Twitter, LinkedIn, The Weather Channel, Zomato, TripAdvisor, NDTV, Hotstar.
- Header:** Swagger UI
- Title Bar:** swagger
- Content Area:**
 - Section Title:** League Infoservice
 - Creator:** Created by Shekhar
 - Resource:** Criteria Resource for retrieve country, league and team combinations
 - Method:** GET /criterialist
 - Description:** Returns the search criteria list covering the combinations of country, league and team
 - Response Messages:**

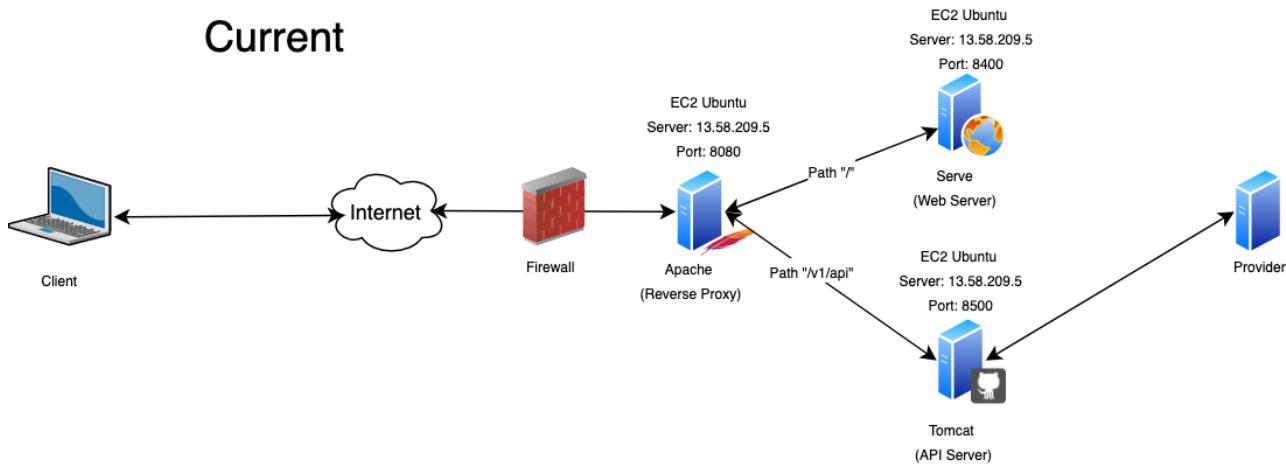
HTTP Status Code	Reason	Response Model	Headers
200	Criteria list retrieved successfully		
404	Criteria list could not be retrieved		
 - Curl:** curl -X GET --header 'Accept: application/json' 'http://13.58.209.5:8080/v1/api/criterialist'
 - Request URL:** http://13.58.209.5:8080/v1/api/criterialist
 - Request Headers:**

```
{ "Accept": "application/json" }
```
 - Response Body:**

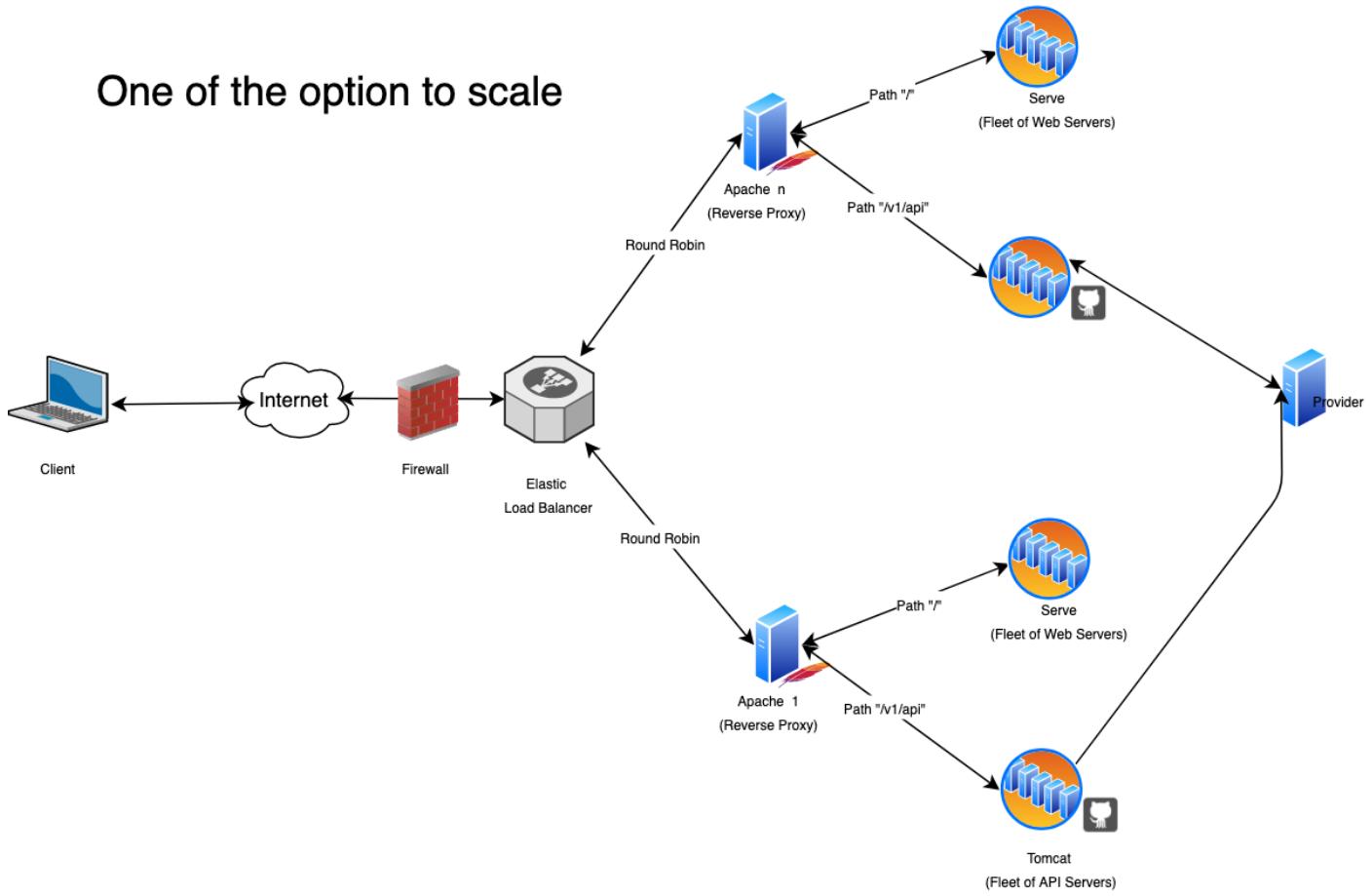
```
[ { "countryName": "France", "leagueName": "Ligue 2", "teamName": "AC Ajaccio" }, { "countryName": "France", "leagueName": "Ligue 2", "teamName": "Olympique Lyonnais" } ]
```

Architecture

Current

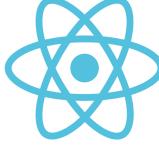


One of the option to scale



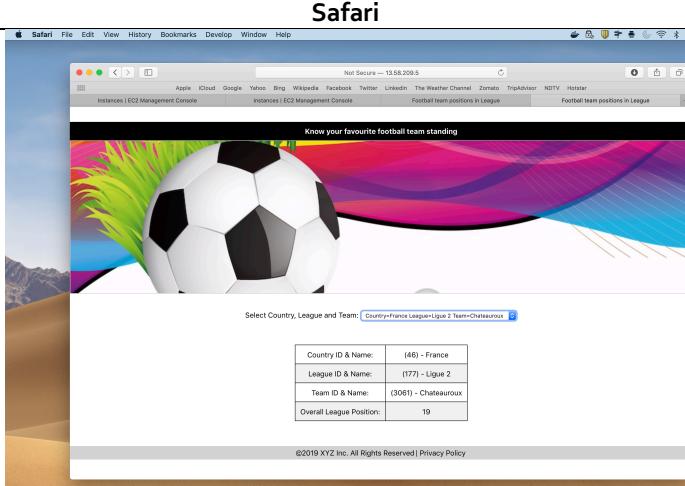
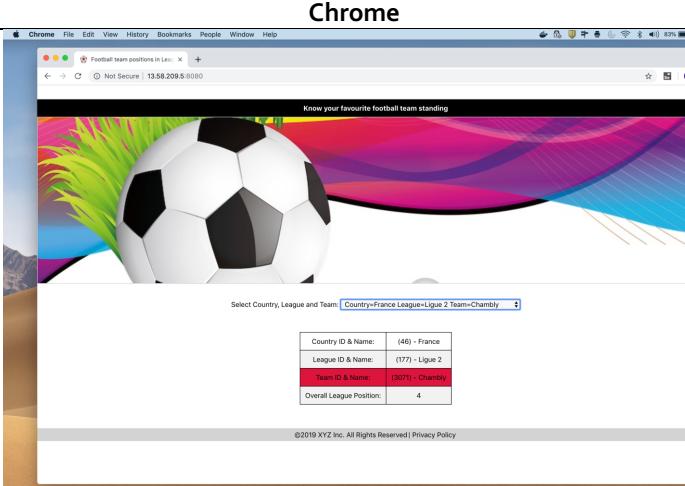
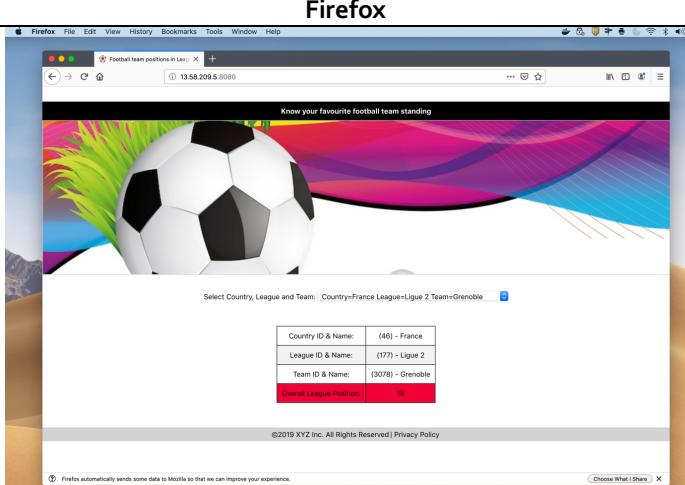
Note: Other options can be discussed based on Use Cases / NFR / Budget / Different or extended Technology Stacks / Cloud services

Technology Stack

		 RestAssured
	Apache Tomcat 	
		
	 React JS	 Jenkins
 ZA Proxy	 XCode	
 ubuntu		 Windows 10

Cross Browser / Device Testing

Tested the solution in the following browsers & Devices (some of them are listed below): Chrome, Safari, Firefox, Edge, iPhone, iPad, Android

Safari  <p>The screenshot shows the website running in a Mac OS X environment. The interface includes a top menu bar with 'Safari', 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Develop', 'Window', and 'Help'. Below the menu is a toolbar with various icons. The main content area features a large soccer ball graphic and a form for selecting a team. The form fields are as follows:</p> <table border="1"><tr><td>Country ID & Name:</td><td>(46) - France</td></tr><tr><td>League ID & Name:</td><td>(177) - Ligue 2</td></tr><tr><td>Team ID & Name:</td><td>(3061) - Chateauroux</td></tr><tr><td>Overall League Position:</td><td>19</td></tr></table> <p>At the bottom of the page, there is a copyright notice: "©2019 XYZ Inc. All Rights Reserved Privacy Policy".</p>	Country ID & Name:	(46) - France	League ID & Name:	(177) - Ligue 2	Team ID & Name:	(3061) - Chateauroux	Overall League Position:	19	Chrome  <p>The screenshot shows the same website in Google Chrome. The interface is similar to Safari, with a top menu bar and a toolbar. The main content area features a large soccer ball graphic and a form for selecting a team. The form fields are as follows:</p> <table border="1"><tr><td>Country ID & Name:</td><td>(46) - France</td></tr><tr><td>League ID & Name:</td><td>(177) - Ligue 2</td></tr><tr><td>Team ID & Name:</td><td>(3071) - Chamby</td></tr><tr><td>Overall League Position:</td><td>4</td></tr></table> <p>At the bottom of the page, there is a copyright notice: "©2019 XYZ Inc. All Rights Reserved Privacy Policy".</p>	Country ID & Name:	(46) - France	League ID & Name:	(177) - Ligue 2	Team ID & Name:	(3071) - Chamby	Overall League Position:	4
Country ID & Name:	(46) - France																
League ID & Name:	(177) - Ligue 2																
Team ID & Name:	(3061) - Chateauroux																
Overall League Position:	19																
Country ID & Name:	(46) - France																
League ID & Name:	(177) - Ligue 2																
Team ID & Name:	(3071) - Chamby																
Overall League Position:	4																
Firefox  <p>The screenshot shows the website in Mozilla Firefox. The interface is similar to the other desktop browsers. The main content area features a large soccer ball graphic and a form for selecting a team. The form fields are as follows:</p> <table border="1"><tr><td>Country ID & Name:</td><td>(46) - France</td></tr><tr><td>League ID & Name:</td><td>(177) - Ligue 2</td></tr><tr><td>Team ID & Name:</td><td>(3078) - Grenoble</td></tr><tr><td>Overall League Position:</td><td>16</td></tr></table> <p>At the bottom of the page, there is a copyright notice: "©2019 XYZ Inc. All Rights Reserved Privacy Policy". A note at the bottom left says: "Firefox automatically sends some data to Mozilla so that we can improve your experience." There is also a "Choose What I Share" button.</p>	Country ID & Name:	(46) - France	League ID & Name:	(177) - Ligue 2	Team ID & Name:	(3078) - Grenoble	Overall League Position:	16	iPad Air  <p>The screenshot shows the website displayed on an iPad Air. The screen is smaller and oriented vertically. The main content area features a large soccer ball graphic and a form for selecting a team. The form fields are as follows:</p> <table border="1"><tr><td>Country ID & Name:</td><td>(46) - France</td></tr><tr><td>League ID & Name:</td><td>(177) - Ligue 2</td></tr><tr><td>Team ID & Name:</td><td>(3040) - AC Ajaccio</td></tr><tr><td>Overall League Position:</td><td>8</td></tr></table> <p>At the bottom of the page, there is a copyright notice: "©2019 XYZ Inc. All Rights Reserved Privacy Policy".</p>	Country ID & Name:	(46) - France	League ID & Name:	(177) - Ligue 2	Team ID & Name:	(3040) - AC Ajaccio	Overall League Position:	8
Country ID & Name:	(46) - France																
League ID & Name:	(177) - Ligue 2																
Team ID & Name:	(3078) - Grenoble																
Overall League Position:	16																
Country ID & Name:	(46) - France																
League ID & Name:	(177) - Ligue 2																
Team ID & Name:	(3040) - AC Ajaccio																
Overall League Position:	8																
iPhone 6  <p>The screenshot shows the website displayed on an iPhone 6. The screen is smaller and oriented vertically. The main content area features a large soccer ball graphic and a form for selecting a team. The form fields are as follows:</p> <table border="1"><tr><td>Country ID & Name:</td><td>(46) - France</td></tr><tr><td>League ID & Name:</td><td>(177) - Ligue 2</td></tr><tr><td>Team ID & Name:</td><td>(3071) - Chamby</td></tr><tr><td>Overall League Position:</td><td>4</td></tr></table> <p>At the bottom of the page, there is a copyright notice: "©2019 XYZ Inc. All Rights Reserved Privacy Policy".</p>	Country ID & Name:	(46) - France	League ID & Name:	(177) - Ligue 2	Team ID & Name:	(3071) - Chamby	Overall League Position:	4	iPhone XR  <p>The screenshot shows the website displayed on an iPhone XR. The screen is larger than the iPhone 6. The main content area features a large soccer ball graphic and a form for selecting a team. The form fields are as follows:</p> <table border="1"><tr><td>Country ID & Name:</td><td>(46) - France</td></tr><tr><td>League ID & Name:</td><td>(177) - Ligue 2</td></tr><tr><td>Team ID & Name:</td><td>(3071) - Chamby</td></tr><tr><td>Overall League Position:</td><td>4</td></tr></table> <p>At the bottom of the page, there is a copyright notice: "©2019 XYZ Inc. All Rights Reserved Privacy Policy".</p>	Country ID & Name:	(46) - France	League ID & Name:	(177) - Ligue 2	Team ID & Name:	(3071) - Chamby	Overall League Position:	4
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League ID & Name:	(177) - Ligue 2																
Team ID & Name:	(3071) - Chamby																
Overall League Position:	4																

Setting up & Running the solution locally

Pre-requisites

- Install Java 8
- Install node.js (v10.16.1) and npm (v6.9.0)
- Install serve globally (npm install -g serve)
- Install JMeter (Optional)

Setup Steps

1. Check out the code from github (git clone <https://github.com/siyer70/leagueinfoserver>)
 - Once checked-out, Change directory to this folder
 - **Note: All under-mentioned commands are to be executed from this root directory of the checked-out folder only**
2. Build the code with the under-mentioned command
 - Command: "**jenkins/scripts/build.sh DEV 1.0**" (use "**jenkins/scripts/build.sh PROD 1.0**" for PROD)
 - Use Gitbash for Windows to run the above
3. Start the services: **bin/start.sh (MAC / Linux) or bin\start.bat (Windows)**
 - You can stop the services by using: **bin/stop.sh (MAC / Linux)** - In Windows – simply close the spawned windows
4. Check the status of the service: **bin/status.sh (MAC / Linux)** - In Windows, status is visible in the spawned windows
 - Status should be running
 - UI code runs in **3000** port of localhost (npm start default) – In Prod, port **8400** is used in EC2 host
 - Service runs in **8500** port of localhost – In Prod, same port is used in EC2 host
 - So, you can access the app using url:
 - Local: <http://localhost:3000/>
 - Prod: <http://13.58.209.5:8080>
 - In Prod, since 8080 is the only port opened, Apache as reverse proxy / gateway is configured in this port to manage the requests for both Web Server & API Server (see the architecture page for more details)
 - And access the API service using the swagger url:
 - Local: <http://localhost:8500/v1/swagger-ui.html>
 - Prod: <http://13.58.209.5:8080/v1/swagger-ui.html>

Jenkins Pipeline Setup

Jenkins pipeline has been setup for build, test and deploy

The screenshot shows the Jenkins General configuration page for a project named "LeagueInfoServerPipeline". The "General" tab is selected. In the "Description" field, the text "Build & Deploy LeagueInfoServer Application" is entered. Below the description, there are several checkboxes for build options: "Discard old builds", "Do not allow concurrent builds", "Do not allow the pipeline to resume if the master restarts", "GitHub project", "Pipeline speed/durability override", "Preserve stashes from completed builds", and "This project is parameterised". The "This project is parameterised" checkbox is checked. Two Boolean parameters are defined: "runIntegration" (Name: runIntegration, Default Value: checked, Description: Run Integration Test) and "runSelenium" (Name: runSelenium, Default Value: unchecked). At the bottom of the page are "Save" and "Apply" buttons.

UI Unit Tests – Jest, Enzyme

UI Unit tests along with coverage:

Tech stack Used: Jest, Enzyme, Fetch-reply-with

Alternatives: Mocha, Chai, Enzyme, Fake-Fetch

```
league-info-app — bash — 126x43
[WKMIN9419360:league-info-app chasrini$ CI=true npm test -- --coverage
> league-info-app@0.1.0 test /Users/chasrini/eclipse-workspace/leagueinfoserver/league-info-app
> react-scripts test "--coverage"

PASS src/Result.test.js
PASS src/CriteriaSelection.test.js
PASS src/App.test.js

          %Stmts %Branch %Funcs %Lines
File-----+-----+-----+-----+
All files | 88.71 |    75 |    85 | 88.71 |
App.js     | 90.32 |    75 |   87.5 | 90.32 |
CriteriaSelection.js | 82.61 |   100 | 77.78 | 82.61 |
Footer.js   | 100  |   100 |   100 | 100  |
Header.js   | 100  |   100 |   100 | 100  |
Result.js   | 100  |   100 |   100 | 100  |
reqresponsedata.js | 100  |   100 |   100 | 100  |

Test Suites: 3 passed, 3 total
Tests:       4 passed, 4 total
Snapshots:   0 total
Time:        2.4s
Ran all test suites.
WKMINT9419360:league-info-app chasrini$ ]
```

UI Automated Testing - Selenium

You can execute the UI Automation testing from Jenkins Pipeline or using Maven Command or from Eclipse – to keep it simple, Jenkins UI has been shown below from where you can execute this test.

Tech stack Used: Selenium Java (Server Mode)

The screenshot shows the Jenkins interface for the 'LeagueInfoServerPipeline' pipeline. On the left, there's a sidebar with various navigation links: Back to Dashboard, Status, Changes, Build with Parameters, Delete Pipeline, Configure, Full Stage View, Rename, Pipeline Syntax, and Git Polling Log. The main area is titled 'Pipeline LeagueInfoServerPipeline'. It displays the message 'This build requires parameters:' followed by three parameter configurations: 'deployToProd' (unchecked), 'runIntegration' (unchecked), and 'runSelenium' (checked). A large blue 'Build' button is located at the bottom of this section.

Jenkins

Jenkins ▶ LeagueInfoServerPipeline ▶

Back to Dashboard

Status

Changes

Build with Parameters

Delete Pipeline

Configure

Full Stage View

Rename

Pipeline Syntax

Git Polling Log

Pipeline LeagueInfoServerPipeline

This build requires parameters:

deployToProd Deploy to Production

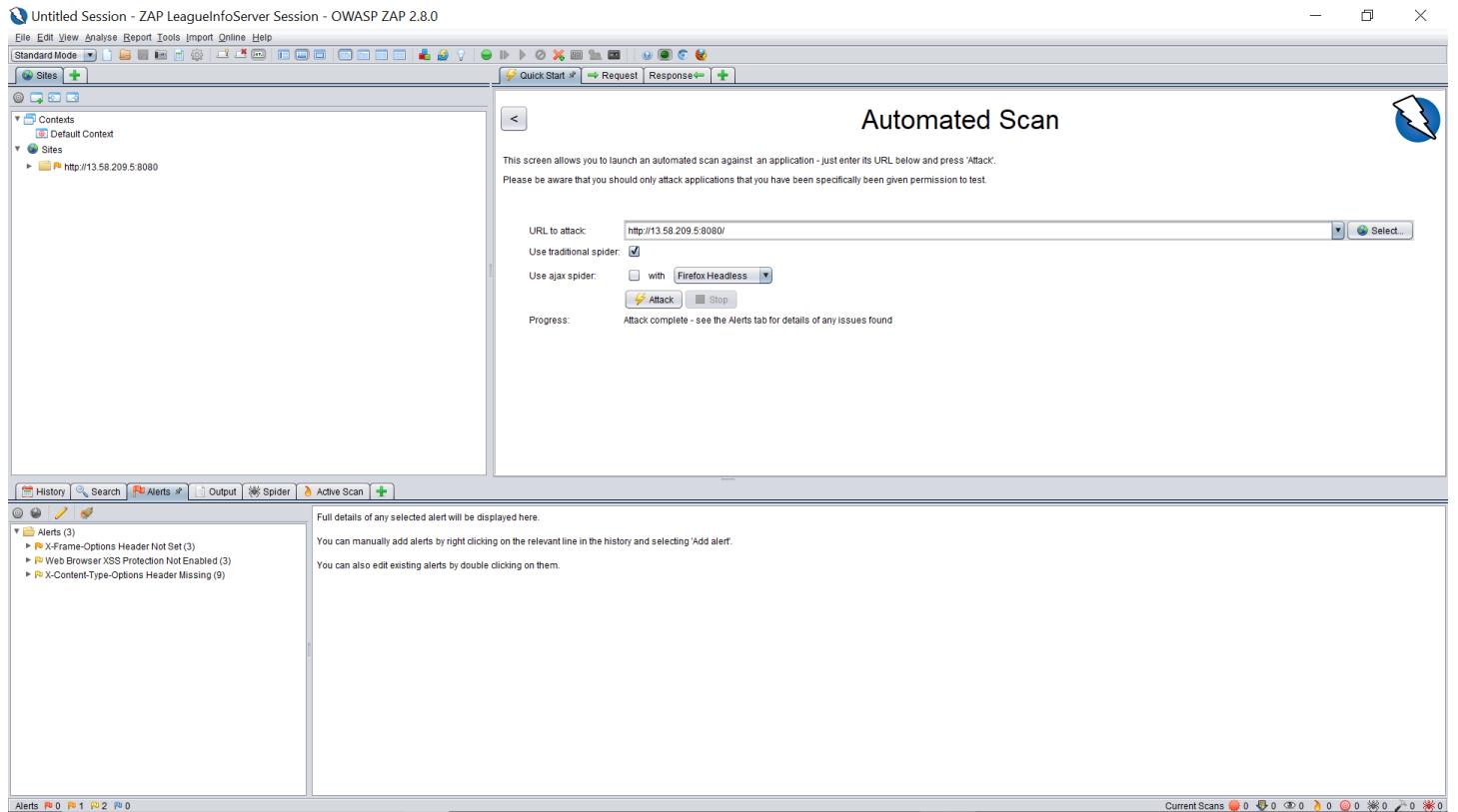
runIntegration Run Integration Test

runSelenium Run Selenium Test

Build

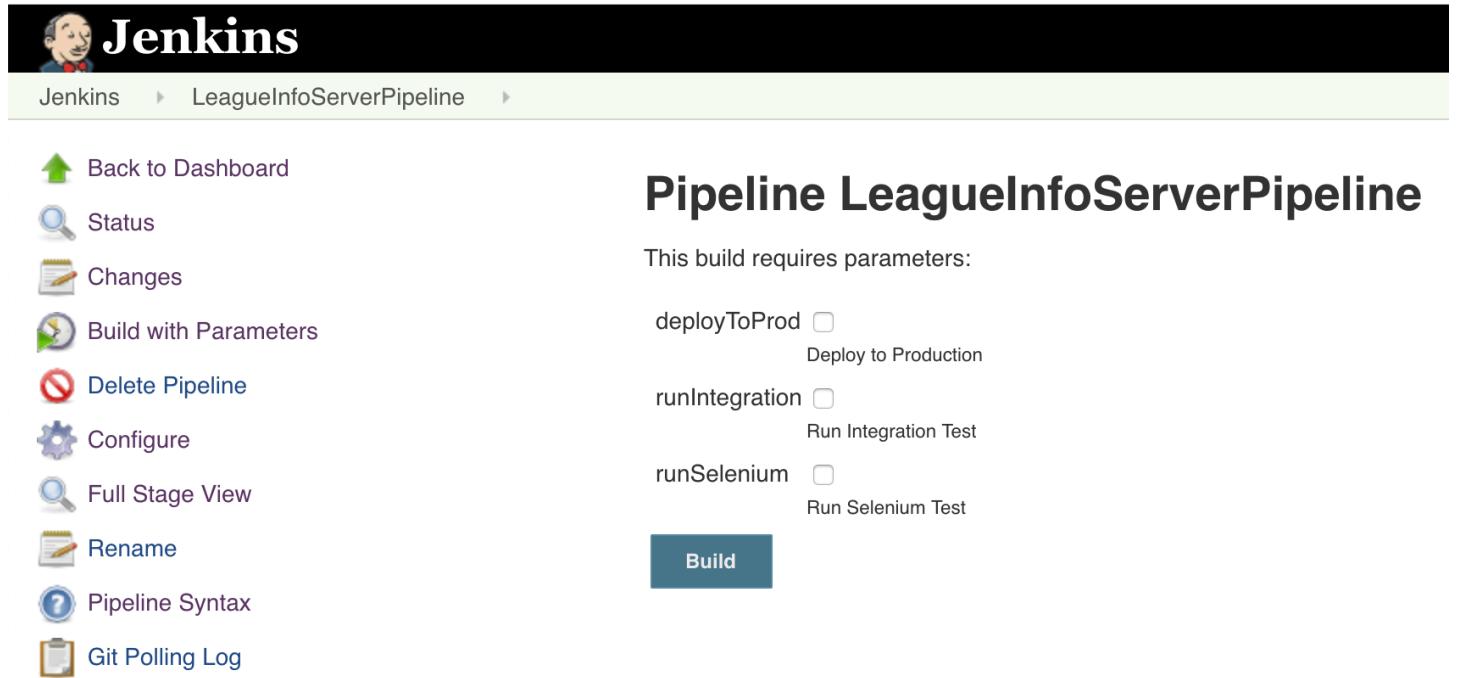
Security Testing – ZA Proxy

Tech stack Used: ZA Proxy



Service Unit Testing – JUnit & Mockito

For running the unit testing for the Service – simply run the Jenkins build without checking any parameters



The screenshot shows the Jenkins Pipeline interface for the 'LeagueInfoServerPipeline'. The pipeline name is displayed prominently at the top right. Below it, a message indicates that the build requires parameters. Three parameters are listed: 'deployToProd' (checkbox), 'runIntegration' (checkbox), and 'runSelenium' (checkbox). Each checkbox has a descriptive label next to it. A large blue 'Build' button is located below the parameter settings. On the left side of the screen, there is a sidebar with various Jenkins navigation links.

Jenkins ▶ LeagueInfoServerPipeline ▶

- Back to Dashboard
- Status
- Changes
- Build with Parameters
- Delete Pipeline
- Configure
- Full Stage View
- Rename
- Pipeline Syntax
- Git Polling Log

Pipeline LeagueInfoServerPipeline

This build requires parameters:

deployToProd Deploy to Production

runIntegration Run Integration Test

runSelenium Run Selenium Test

Build

Service Integration Testing - RESTAssured

For running the integration testing for the Service – simply check the integration test check box in the build

The screenshot shows the Jenkins Pipeline interface for the 'LeagueInfoServerPipeline'. The pipeline name is displayed prominently at the top right. On the left, a sidebar lists various Jenkins management options like Back to Dashboard, Status, Changes, Build with Parameters, Delete Pipeline, Configure, Full Stage View, Rename, Pipeline Syntax, and Git Polling Log. The main content area displays the pipeline configuration, which includes parameters for deployment and integration testing. A 'Build' button is visible at the bottom of the configuration section.

Jenkins ▶ LeagueInfoServerPipeline ▶

Pipeline LeagueInfoServerPipeline

This build requires parameters:

deployToProd Deploy to Production

runIntegration Run Integration Test

runSelenium Run Selenium Test

Build

API Performance Testing - JMeter

You can run the performance test by simply running the script file from the bin folder i.e. **bin/run-jmeter-api-test.sh**

Pre-requisite:

1. Install latest version of JMeter
2. Run the Services: bin/start.sh

The screenshot shows the Apache JMeter interface with the 'View Results in Table' listener selected. The results table contains the following data:

Sample #	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Sent Bytes	Latency	Connect Time...
1	14:38:10.952	Inforserver Co...	Criteria Query	49	✓	1687	137	49	0
2	14:38:10.953	Inforserver Co...	Criteria Query	48	✓	1687	137	47	0
3	14:38:10.952	Inforserver Co...	Criteria Query	49	✓	1687	137	48	0
4	14:38:10.952	Inforserver Co...	Criteria Query	49	✓	1687	137	49	0
5	14:38:10.953	Inforserver Co...	Criteria Query	48	✓	1687	137	48	0
6	14:38:10.952	Inforserver Co...	Criteria Query	49	✓	1687	137	49	0
7	14:38:10.987	Inforserver Co...	Criteria Query	14	✓	1687	137	14	0
8	14:38:10.952	Inforserver Co...	Criteria Query	49	✓	1687	137	49	0
9	14:38:10.952	Inforserver Co...	Criteria Query	49	✓	1687	137	49	0
10	14:38:10.953	Inforserver Co...	Criteria Query	49	✓	1687	137	49	0
11	14:38:10.953	Inforserver Co...	Criteria Query	50	✓	1687	137	50	0
12	14:38:10.954	Inforserver Co...	Criteria Query	49	✓	1687	137	49	0
13	14:38:10.952	Inforserver Co...	Criteria Query	51	✓	1687	137	51	0
14	14:38:10.953	Inforserver Co...	Criteria Query	50	✓	1687	137	50	0
15	14:38:10.952	Inforserver Co...	Criteria Query	51	✓	1687	137	51	0
16	14:38:10.993	Inforserver Co...	Criteria Query	9	✓	1687	137	9	0
17	14:38:10.952	Inforserver Co...	Criteria Query	51	✓	1687	137	51	0
18	14:38:10.952	Inforserver Co...	Criteria Query	51	✓	1687	137	51	0
19	14:38:10.952	Inforserver Co...	Criteria Query	51	✓	1687	137	51	0
20	14:38:10.952	Inforserver Co...	Criteria Query	52	✓	1687	137	52	0
21	14:38:10.952	Inforserver Co...	Criteria Query	50	✓	1687	137	50	0
22	14:38:10.953	Inforserver Co...	Criteria Query	51	✓	1687	137	51	0
23	14:38:10.952	Inforserver Co...	Criteria Query	51	✓	1687	137	51	0
24	14:38:10.953	Inforserver Co...	Criteria Query	52	✓	1687	137	52	0
25	14:38:10.953	Inforserver Co...	Criteria Query	50	✓	1687	137	50	0
26	14:38:11.014	Inforserver Co...	Criteria Query	5	✓	1687	137	5	0
27	14:38:11.042	Inforserver Co...	Criteria Query	4	✓	1687	137	4	0
28	14:38:11.066	Inforserver Co...	Criteria Query	3	✓	1687	137	3	0
29	14:38:11.092	Inforserver Co...	Criteria Query	3	✓	1687	137	3	0
30	14:38:11.117	Inforserver Co...	Criteria Query	3	✓	1687	137	3	0
31	14:38:11.139	Inforserver Co...	Criteria Query	3	✓	1687	137	3	0
32	14:38:11.164	Inforserver Co...	Criteria Query	4	✓	1687	137	4	0
33	14:38:11.191	Inforserver Co...	Criteria Query	3	✓	1687	137	3	0
34	14:38:11.217	Inforserver Co...	Criteria Query	3	✓	1687	137	3	0

Jenkins – Single click deployment to PROD

For deploying to PROD, simply click on the deploy to prod option in Jenkins

The screenshot shows the Jenkins interface for the 'LeagueInfoServerPipeline'. The top navigation bar includes the Jenkins logo and the pipeline name. Below the navigation, there's a sidebar with various Jenkins management links like Back to Dashboard, Status, Changes, etc. The main content area is titled 'Pipeline LeaguInfoServerPipeline' and displays the build requirements. It lists three parameters: 'deployToProd' (checked), 'runIntegration' (unchecked), and 'runSelenium' (unchecked). A prominent blue 'Build' button is located at the bottom of the parameter section.

Back to Dashboard

Status

Changes

Build with Parameters

Delete Pipeline

Configure

Full Stage View

Rename

Pipeline Syntax

Git Polling Log

Pipeline LeaguInfoServerPipeline

This build requires parameters:

deployToProd Deploy to Production

runIntegration Run Integration Test

runSelenium Run Selenium Test

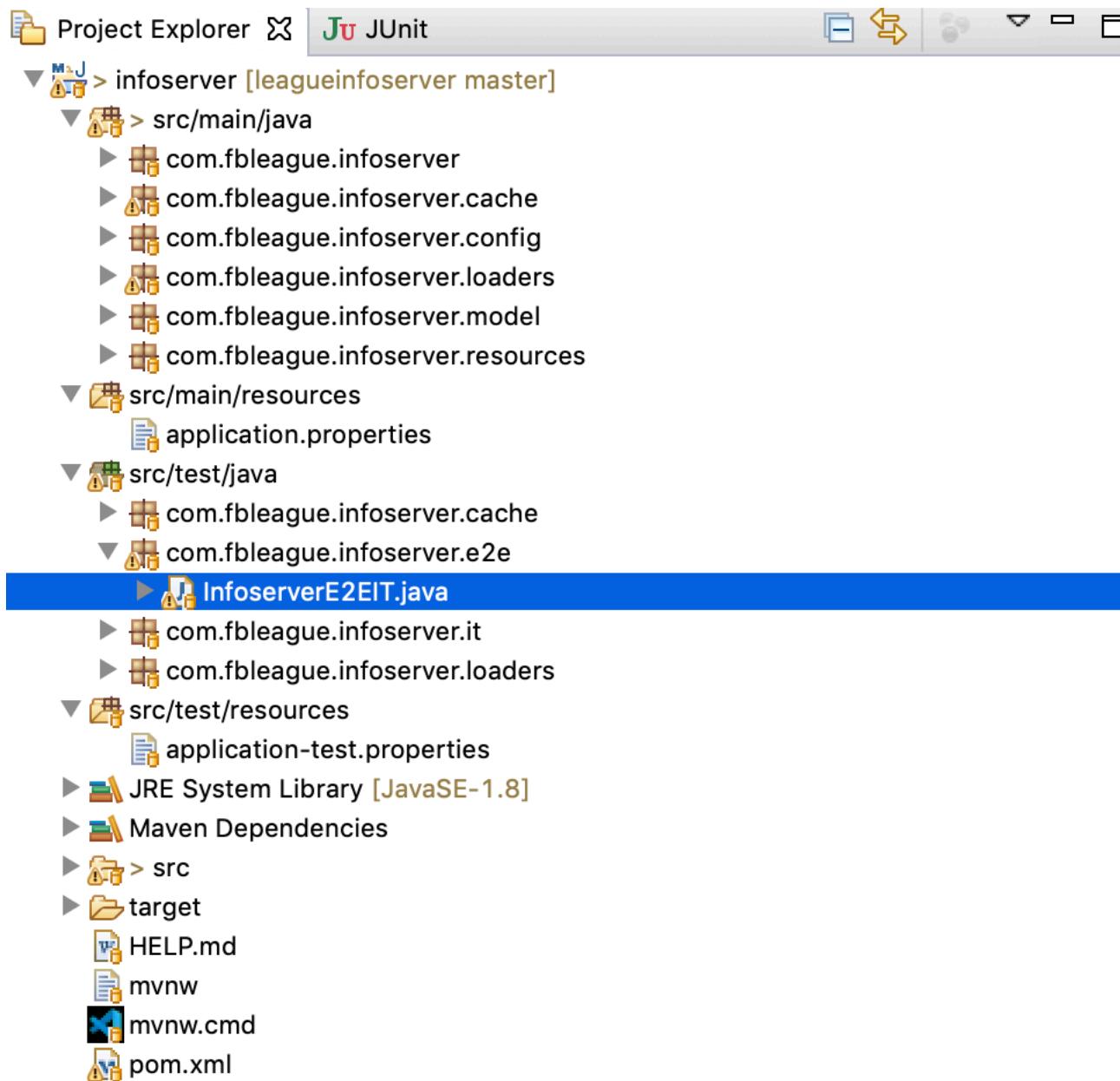
Build

Code Package Structure

```
drwxr-xr-x  3 chasrini  LL\Domain Users   96 Aug 17 08:47 apache
drwxr-xr-x  8 chasrini  LL\Domain Users  256 Sep  2 20:53 bin
drwxr-xr-x  3 chasrini  LL\Domain Users   96 Sep  1 13:37 jenkins
drwxr-xr-x 13 chasrini  LL\Domain Users  416 Sep  2 17:32 infoserver
drwxr-xr-x 18 chasrini  LL\Domain Users  576 Sep  1 13:44 league-info-app
drwxr-xr-x  5 chasrini  LL\Domain Users  160 Sep  1 13:37 jmeter-tests
drwxr-xr-x  4 chasrini  LL\Domain Users  128 Sep  2 21:58 doc
-rw-r--r--  1 chasrini  LL\Domain Users  888 Sep  2 09:36 README.md
drwxr-xr-x  4 chasrini  LL\Domain Users  128 Sep  2 17:32 releases
drwxr-xr-x  4 chasrini  LL\Domain Users  128 Sep  1 13:27 logs
```

Directory	Description
Apache	Apache configuration for production – not required for local testing
Bin	Start, stop and status scripts and script to run jmeter
Jenkins	All the jenkins scripts are available here within the scripts folder
Infoserver	API service Java code
League-info-app	UI code - react components
Jmeter-tests	Jmeter jmx file
Doc	This document is available within this folder
README.md	Read me file
Releases	All release artifacts will be available here
Logs	Log files will be available here

Service Code Package Structure



Deployment Structure

```
ubuntu@ip-172-31-30-142:~/infoserver$ ls -ltr
total 48856
drwxrwxr-x 2 ubuntu ubuntu      4096 Aug 18 22:01 logs
drwxrwxr-x 3 ubuntu ubuntu      4096 Aug 25 18:36 releases
drwxrwxr-x 2 ubuntu ubuntu      4096 Sep  1 21:51 bin
drwxrwxr-x 2 ubuntu ubuntu      4096 Sep  2 17:45 backup
```

```
ubuntu@ip-172-31-30-142:~/infoserver$ ls -ltr releases/PROD/infoserver-1.0/
total 54148
-rw-r--r-- 1 ubuntu ubuntu 55440883 Aug 25 12:57 infoserver-1.0.jar
drwxr-xr-x 3 ubuntu ubuntu      4096 Aug 25 12:57 build
```

Directory	Description
/etc/apache2	Apache configuration for production
Bin	Start, stop and status scripts and script to run jmeter
Releases	All releases are extracted in this folder
Backup	Release artifacts (tar files) backup for the past releases
Logs	Log files will be available here