

League Info Server



Documentation

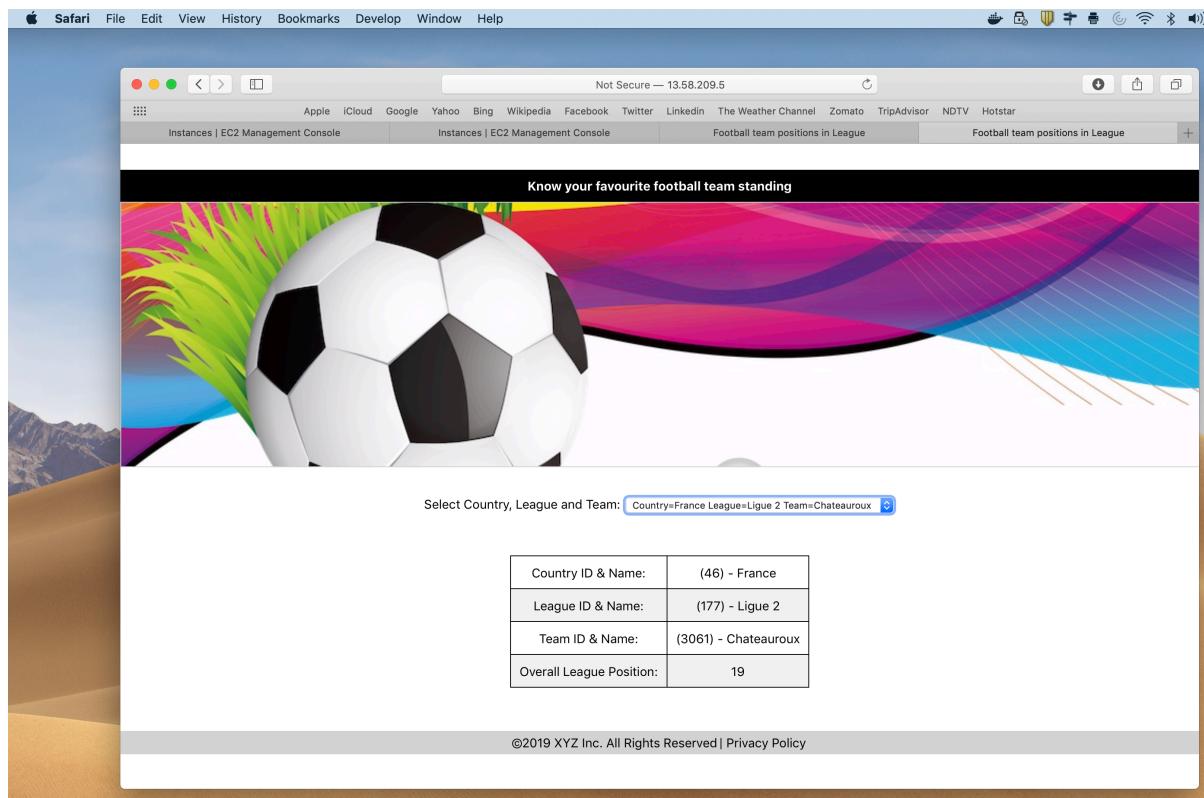
Covers Architecture, API Specification using Swagger, Cross Browser & Device UI Testing, UI Unit Testing, UI Automated Testing, Security Testing, Service Unit & Integration Testing, API Performance Testing, Jenkins Pipeline setup, Tech stack used, Deployment structure, Code structure and Static Code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

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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 the Swagger UI interface for the League Infoservice API. The title bar indicates "Not Secure — 13.58.209.5". The navigation bar includes links for Apple, iCloud, Google, Yahoo, Bing, Wikipedia, Facebook, Twitter, LinkedIn, The Weather Channel, Zomato, TripAdvisor, NDTV, and Hotstar. Below the navigation bar, the main content area has a green header with the text "swagger" and "Explore". The main section is titled "League Infoservice" and was created by Shekhar. It displays the "Criteria Resource for retrieve country, league and team combinations". The "GET /criterialist" endpoint is shown, which returns a search criteria list covering the combinations of country, league and team. The "Response Messages" table lists two rows: "200 Criteria list retrieved successfully" and "404 Criteria list could not be retrieved". Below the table are "Curl" and "Request URL" sections, both containing the command "curl -X GET --header 'Accept: application/json' 'http://13.58.209.5:8080/v1/api/criterialist'". The "Request Headers" section shows the header "Accept: application/json". The "Response Body" section displays a JSON array representing the search criteria list.

HTTP Status Code	Reason	Response Model	Headers
200	Criteria list retrieved successfully		
404	Criteria list could not be retrieved		

```
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

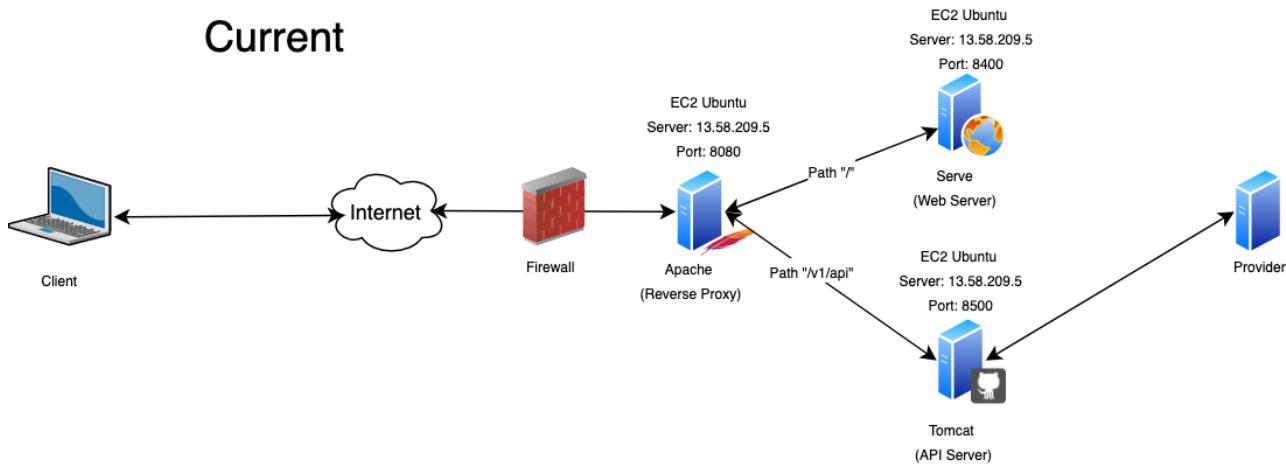
Request Headers
{ "Accept": "application/json" }

Response Body

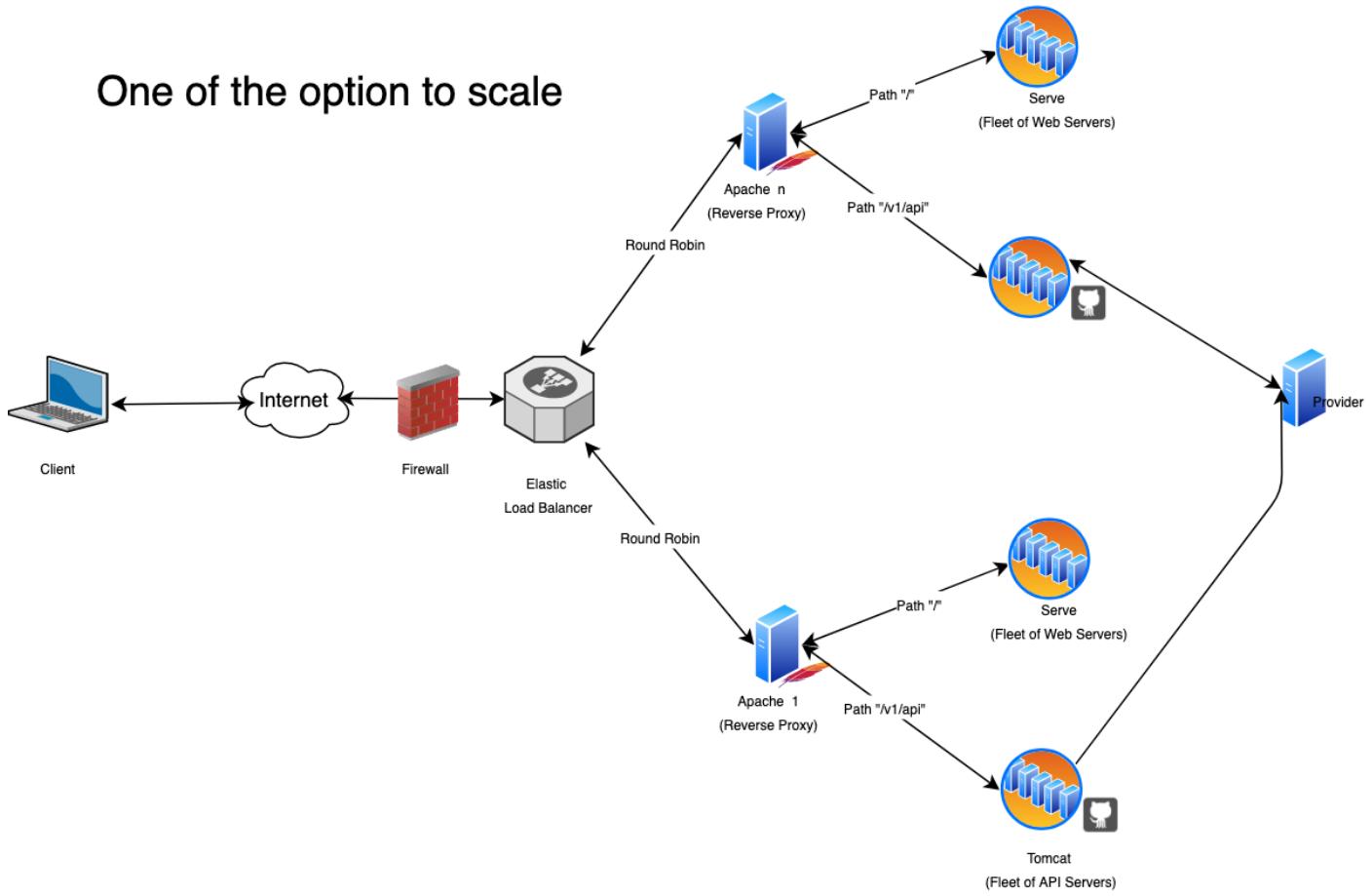
```
[  
  {  
    "countryName": "France",  
    "leagueName": "Ligue 2",  
    "teamName": "AC Ajaccio"  
  },  
  {  
    "countryName": "France",  
    "leagueName": "Ligue 2",  
    "teamName": "AC Ajaccio"  
  }]
```

Architecture

Current

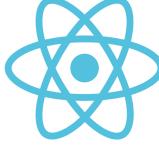


One of the option to scale



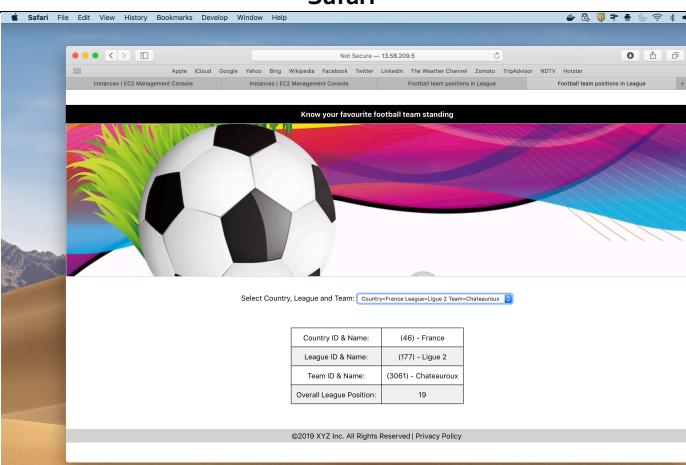
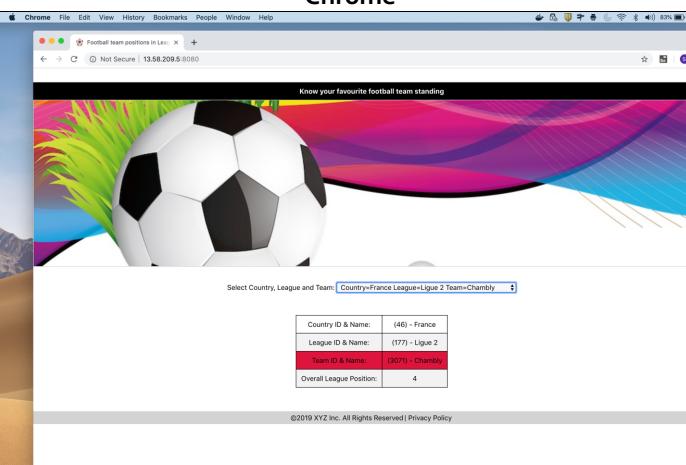
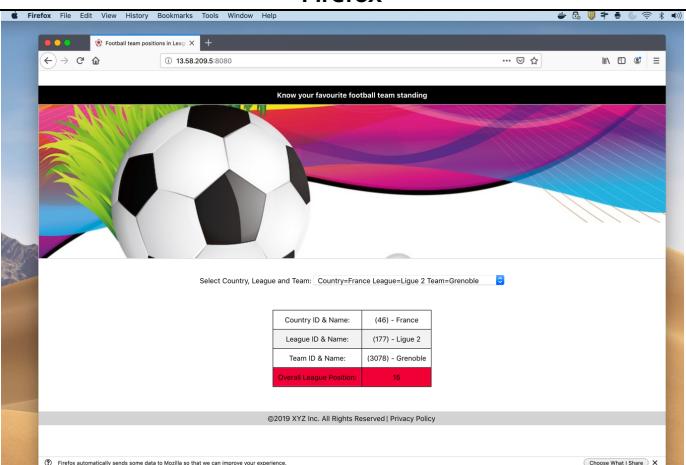
Note: Other options can be discussed based on Use Cases / NFR / Budget / Different or extended Technology Stacks / Cloud services

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 Safari. The interface includes a large soccer ball graphic, a search bar for 'Select Country, League and Team', and a table with the following data:</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, there's 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 website running in Google Chrome. The interface is identical to the Safari version, displaying the same soccer ball graphic, search bar, and data table. The table values are the same as in the Safari screenshot.</p>
Country ID & Name:	(46) - France								
League ID & Name:	(177) - Ligue 2								
Team ID & Name:	(3061) - Chateauroux								
Overall League Position:	19								
Firefox  <p>The screenshot shows the website running in Mozilla Firefox. The layout and data are consistent with the other browsers. The table values are identical.</p>	IPad Air  <p>The screenshot shows the website running on an iPad Air. The mobile responsive design is visible, with the same soccer ball graphic and data table. The table values are consistent across all devices.</p>								
iPhone 6  <p>The screenshot shows the website running on an iPhone 6. The mobile responsive design is clearly visible, showing the same interface elements and data as the desktop and tablet versions.</p>	iPhone XR  <p>The screenshot shows the website running on an iPhone XR. The mobile responsive design is visible, showing the same interface elements and data as the other devices.</p>								

Setting up & Running the solution locally

Kindly refer to the Readme.md file from the repository

Jenkins Pipeline Setup

Jenkins pipeline has been setup for build, test and deploy

The screenshot shows the Jenkins Pipeline configuration page for the project "LeagueInfoServerPipeline".

General Settings:

- Description: Build & Deploy LeagueInfoServer Application
- Build & Deploy LeagueInfoServer Application
- [Plain text] [Preview]
- Checkboxes (unchecked): 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.
- This project is parameterised

Boolean Parameters:

- Boolean Parameter**
 - Name: runIntegration
 - Default Value:
 - Description: Run Integration Test
 - [Plain text] [Preview]
- Boolean Parameter**
 - Name: runSelenium
 - Default Value:
 - Description: Run Selenium Test
 - [Plain text] [Preview]

Buttons:

- Save
- Apply

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 a 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

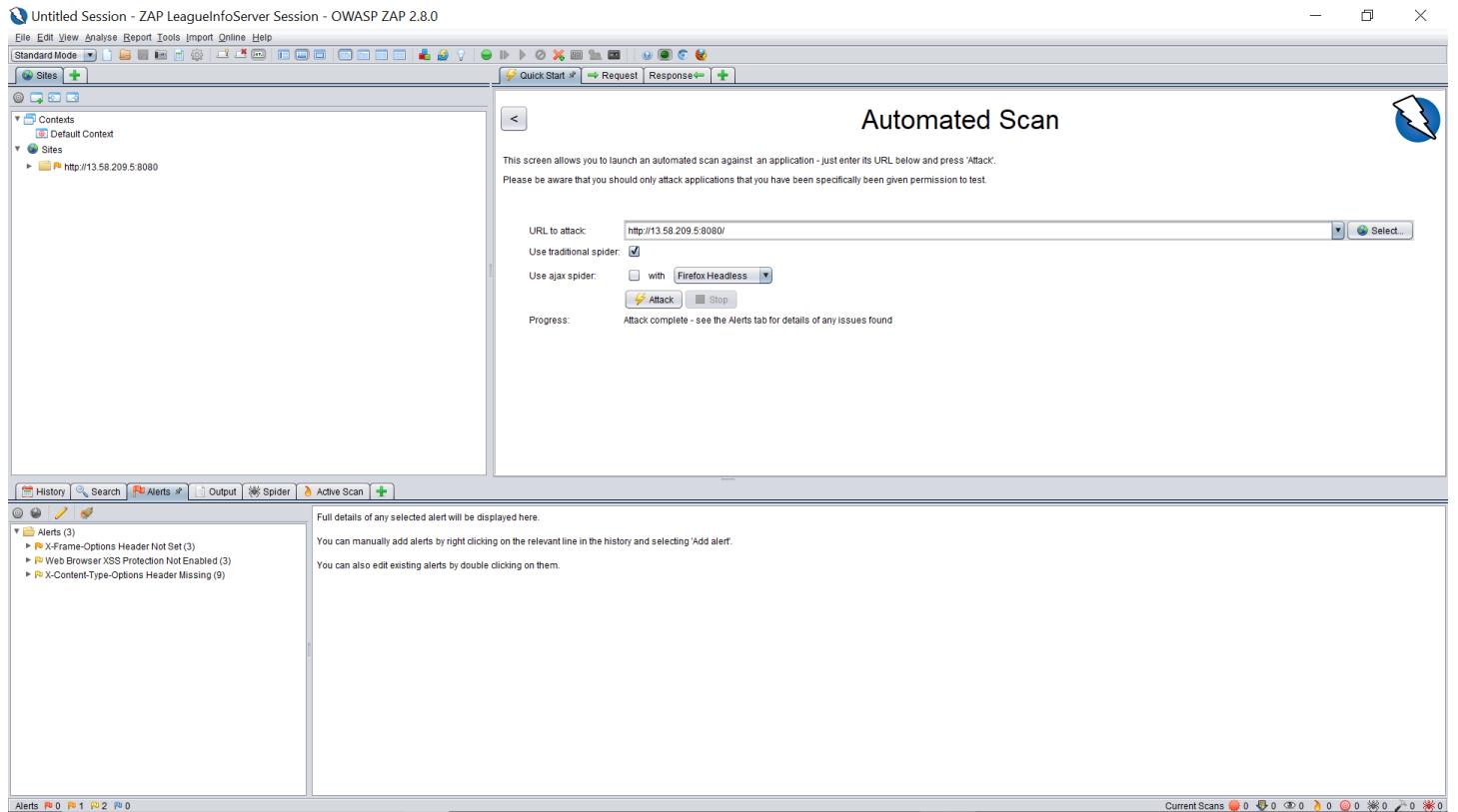
runIntegration Run Integration Test

runSelenium Run Selenium Test

Build

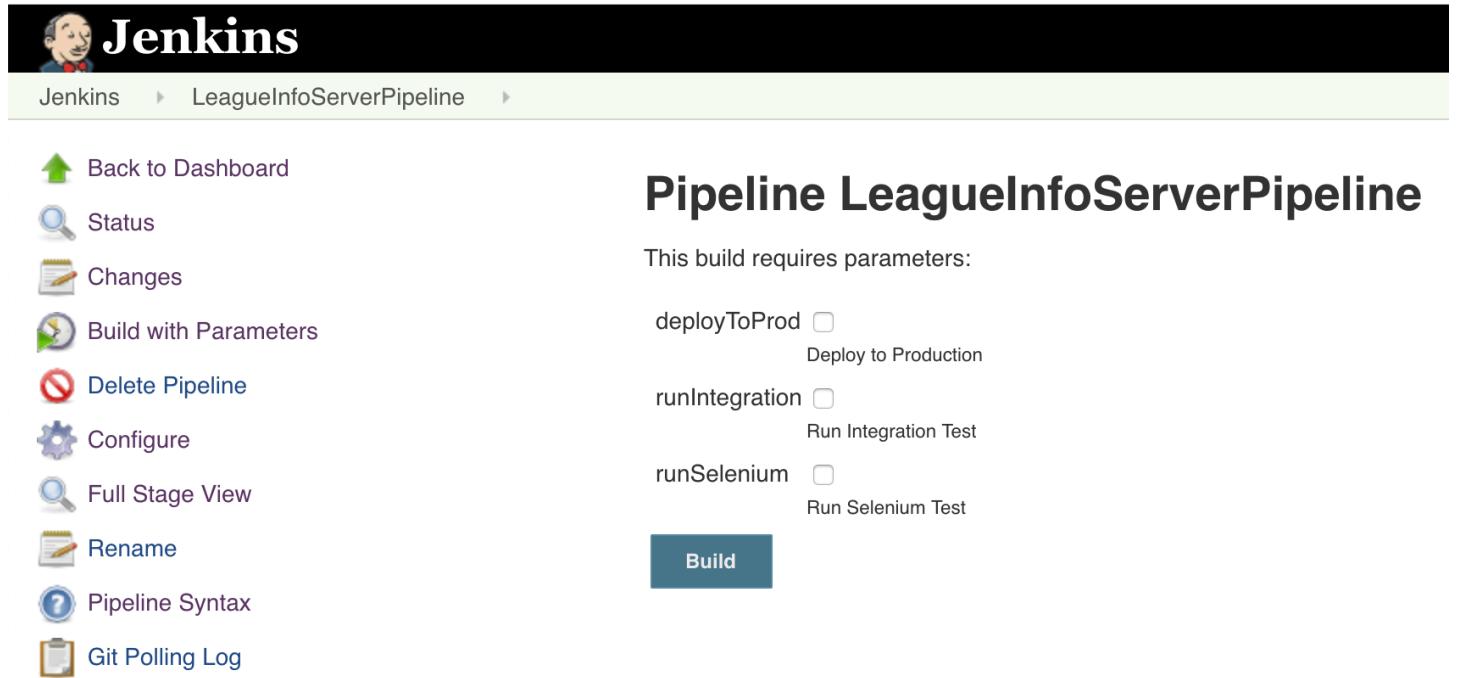
Security Testing – ZA Proxy

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

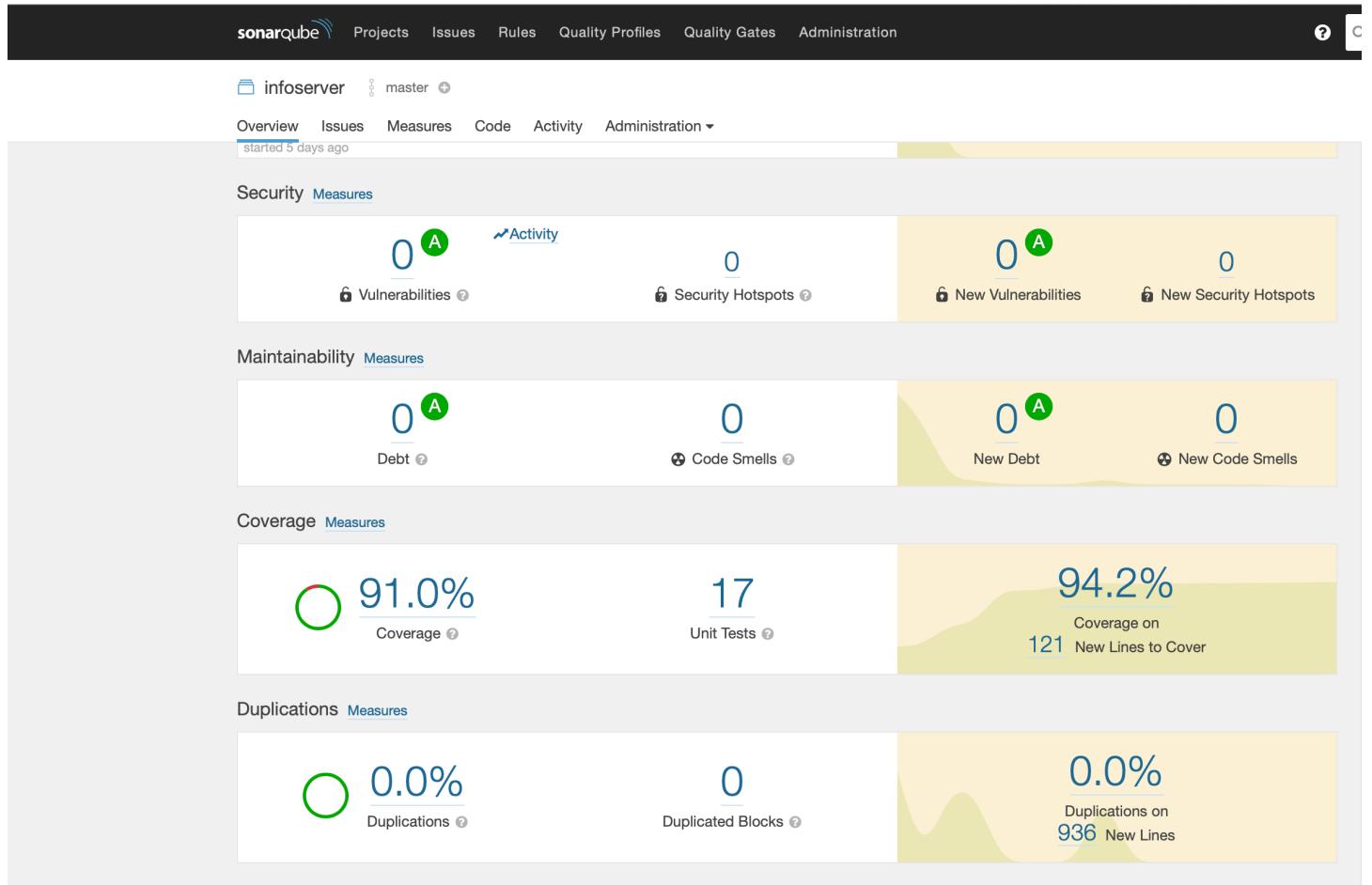
For deploying to PROD, simply click on the deploy to prod option in Jenkins

The screenshot shows the Jenkins interface for the 'LeagueInfoServerPipeline' pipeline. On the left, there's a sidebar with various icons and links: 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 has a title 'Pipeline LeagueInfoServerPipeline'. Below the title, it says 'This build requires parameters:' followed by three parameter settings: 'deployToProd' with a checked checkbox (Deploy to Production), 'runIntegration' with an unchecked checkbox (Run Integration Test), and 'runSelenium' with an unchecked checkbox (Run Selenium Test). A large blue 'Build' button is at the bottom of the parameter section.

Parameter	Value	Status
deployToProd	Deploy to Production	<input checked="" type="checkbox"/>
runIntegration	Run Integration Test	<input type="checkbox"/>
runSelenium	Run Selenium Test	<input type="checkbox"/>

Static code Analysis – Sonar Qube, ESLint

Sonar qube latest version has been executed on the java project folder and eslint & prettier has been applied on the react components -No issues left (as per these tools) either in Server or in the presentation layer

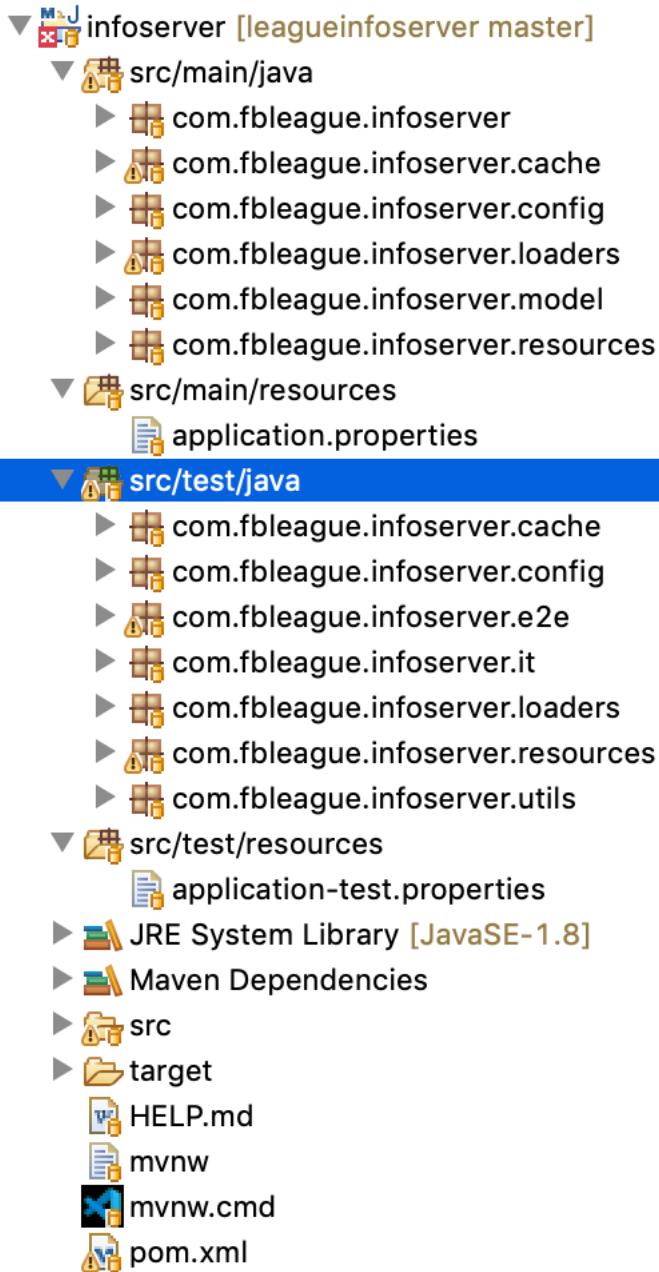


Overall Project Folder Structure

```
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 docs
-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
Docs	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