



CrowSoft

lyit

Institiúid Teicneolaíochta
Leitir Ceanaínn
Letterkenny Institute
of Technology



Introduction

Liam Whorriskey

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Project

On-line system to take in building details for analysis. CrowSoft is a engineering and tech company. The product that they wish to market is BusIntelligence.

The system must take details for buildings and to provide easy to use analysis features. For example, they may wish to have a review all buildings which cost more than €1 million to build and have special features as this may indicate future maintenance projects that may be exploited. Keep the analysis simple.

The analysis system should be clean and simple. The system needs to take into account the usual details and present simplified graphics. It must be possible to upload files or images.

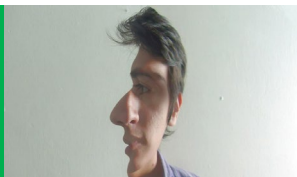
The administrator should be able to access detailed information and edit as appropriate. Once the client enters details it should not be able to be changed by the client.



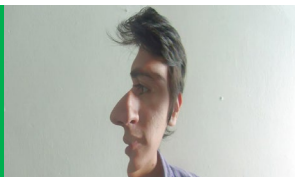
Team Members

Liam Whorriskey

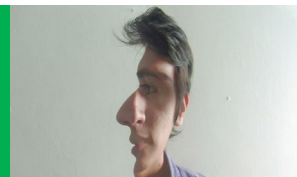
02



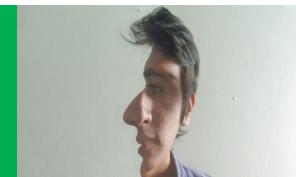
Charles Aylward



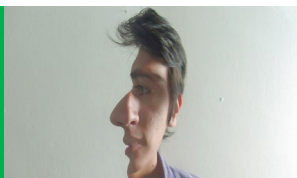
Mary Walsh McGinty



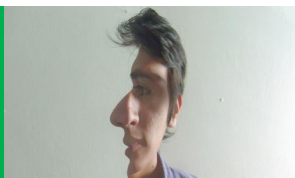
Joji Thokla



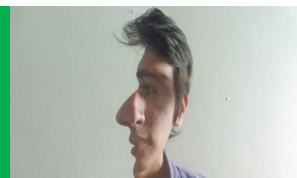
Matthew Mc Colgan



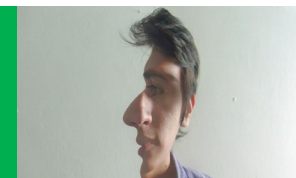
Bharathi Gadhiraju



Michael McFadden



Colin Kenny



Liam Whorriskey

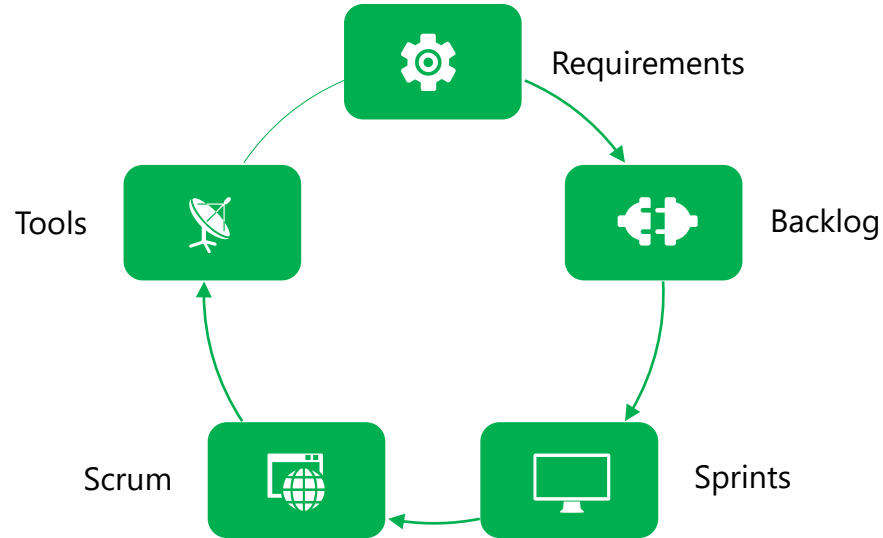
Matthew Mc Colgan



Agile Development / Team Collaboration

Matthew

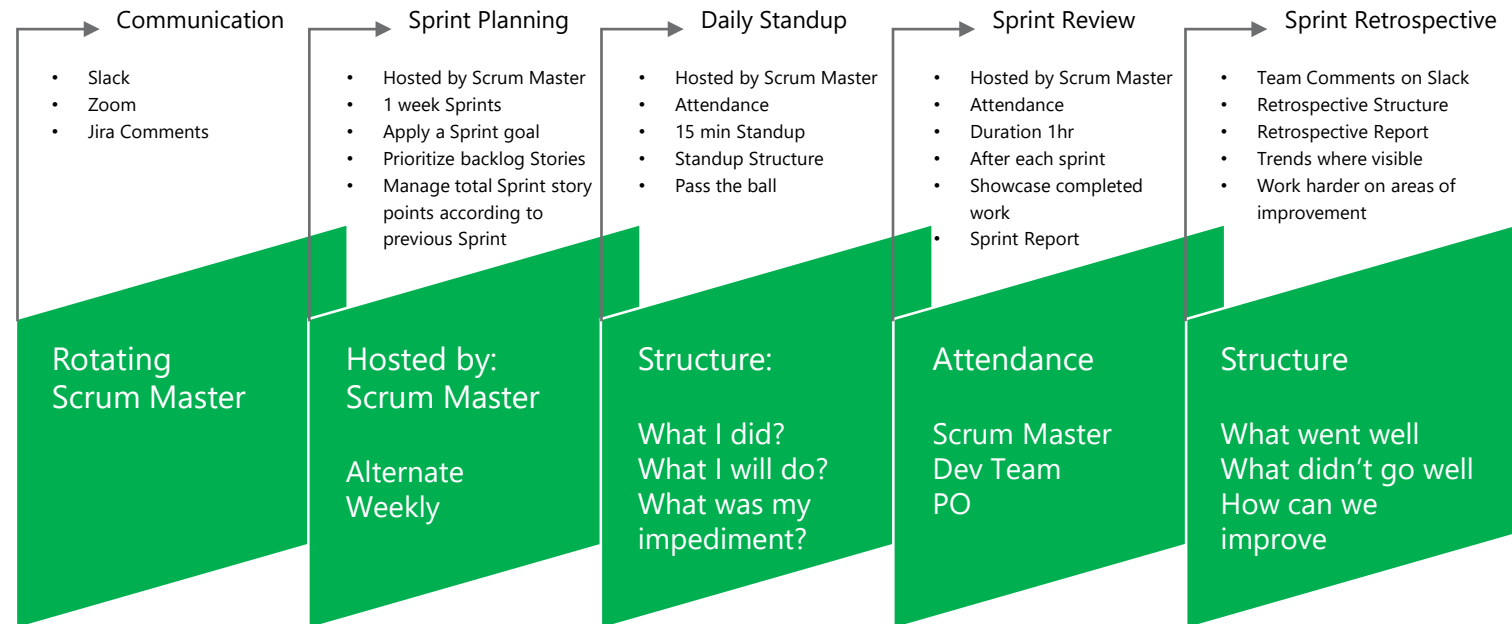
03



Scrum

Michael McFadden

04



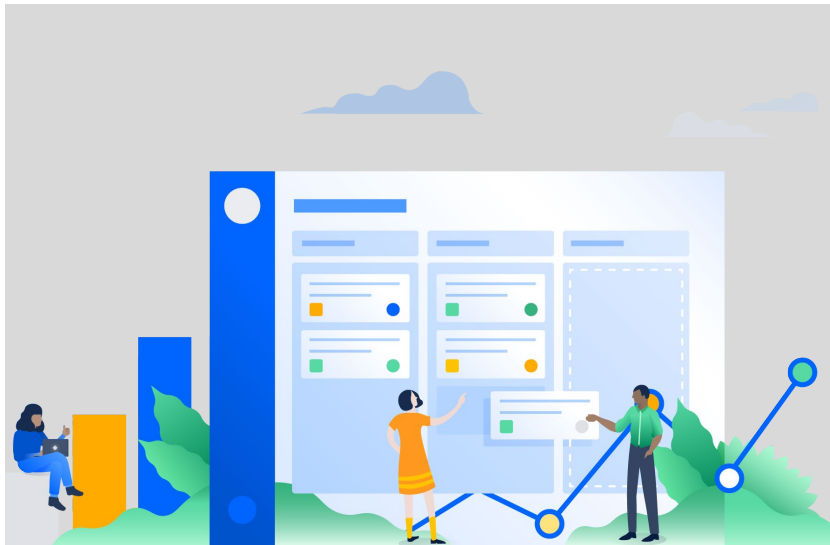
Liam Whorriskey



Jira

Liam Whorriskey

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Plan

Create user stories and issues, plan sprints, and distribute tasks across your software team.

Track

Prioritize and discuss your team's work in full context with complete visibility.

Release

Ship with confidence and sanity knowing the information you have is always up-to-date.

Report

Improve team performance based on real-time, visual data that your team can put to use.




Mary Walsh



Security Tools

Mary Walsh

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Puma Scan

Checks C# and .NET vulnerabilities




SonarQube

Static analysis of code




OWASP
Open Web Application Security Project

Dependency check
Project dependencies




Ansible Vault

Encrypt sensitive data to store in source code



Open SCAP

Multiple tools, help with enforcement of security baselines



Audit Trail

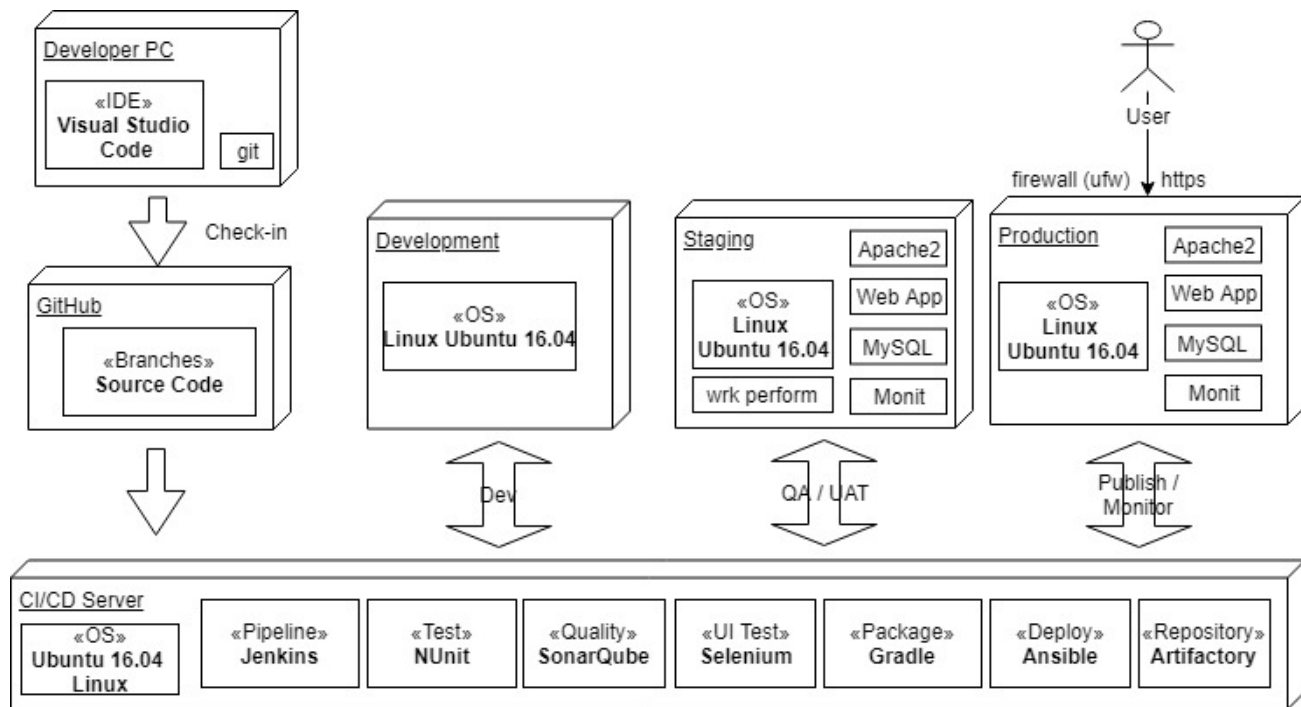
Text here



Dev Staging & Production

Charles Aylward

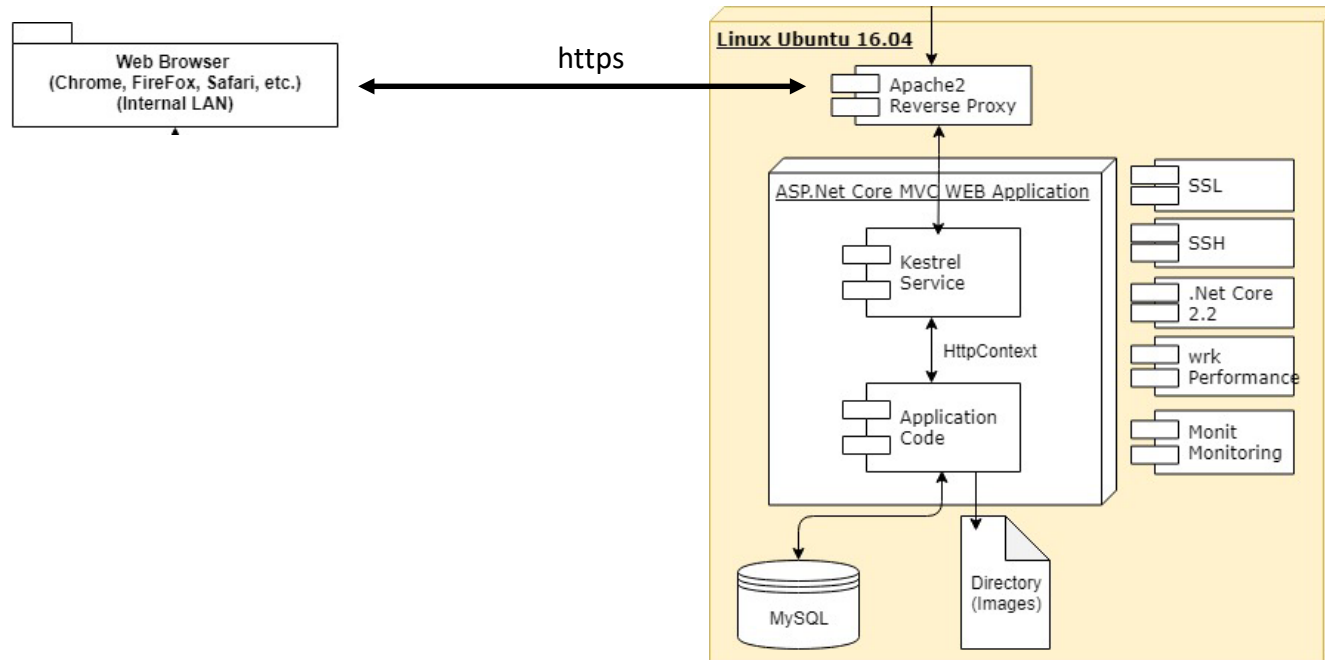
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Environments – Technology Stack

Charles Aylward

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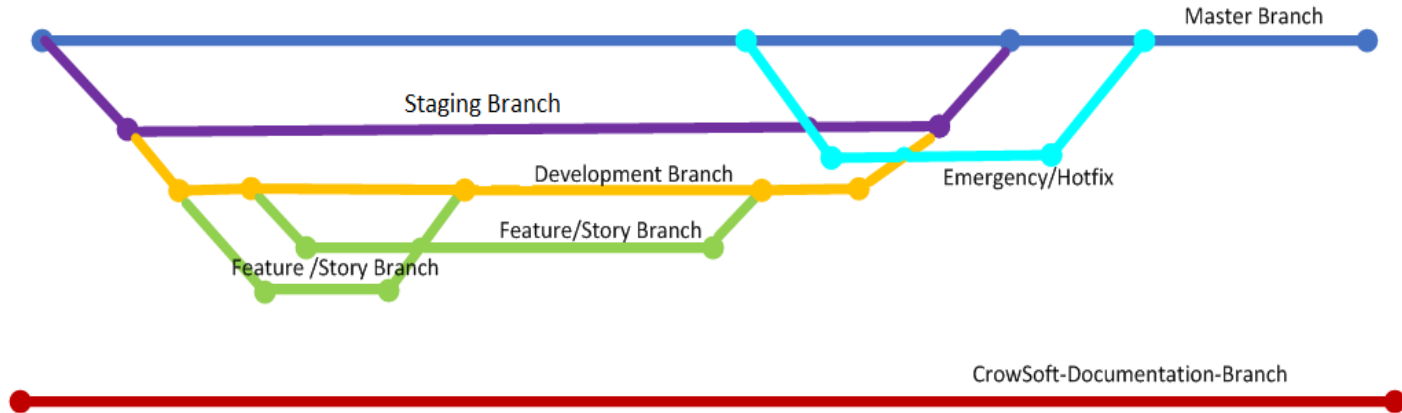
Git & GitHub

Colin

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- GitHub: <https://github.com/rlennon/CrowSoft>

CrowSoft Branching Strategy

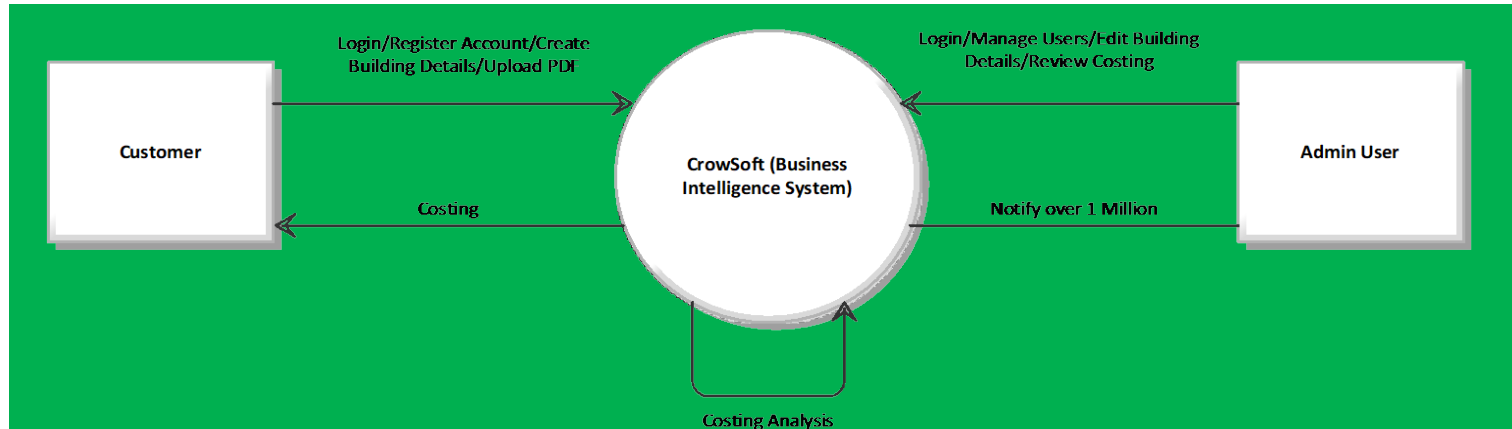


Code Created - Solution

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Charles Aylward

- Web application access via a web browser
- Customer Register and Login
- Admin users to manage all users and allocate roles
- Admin access/edit detailed Information
- System calculates building cost analysis and display costing to the customer
- Admin to manage costs exceed €1 million.



Code Created - Technical

Charles Aylward

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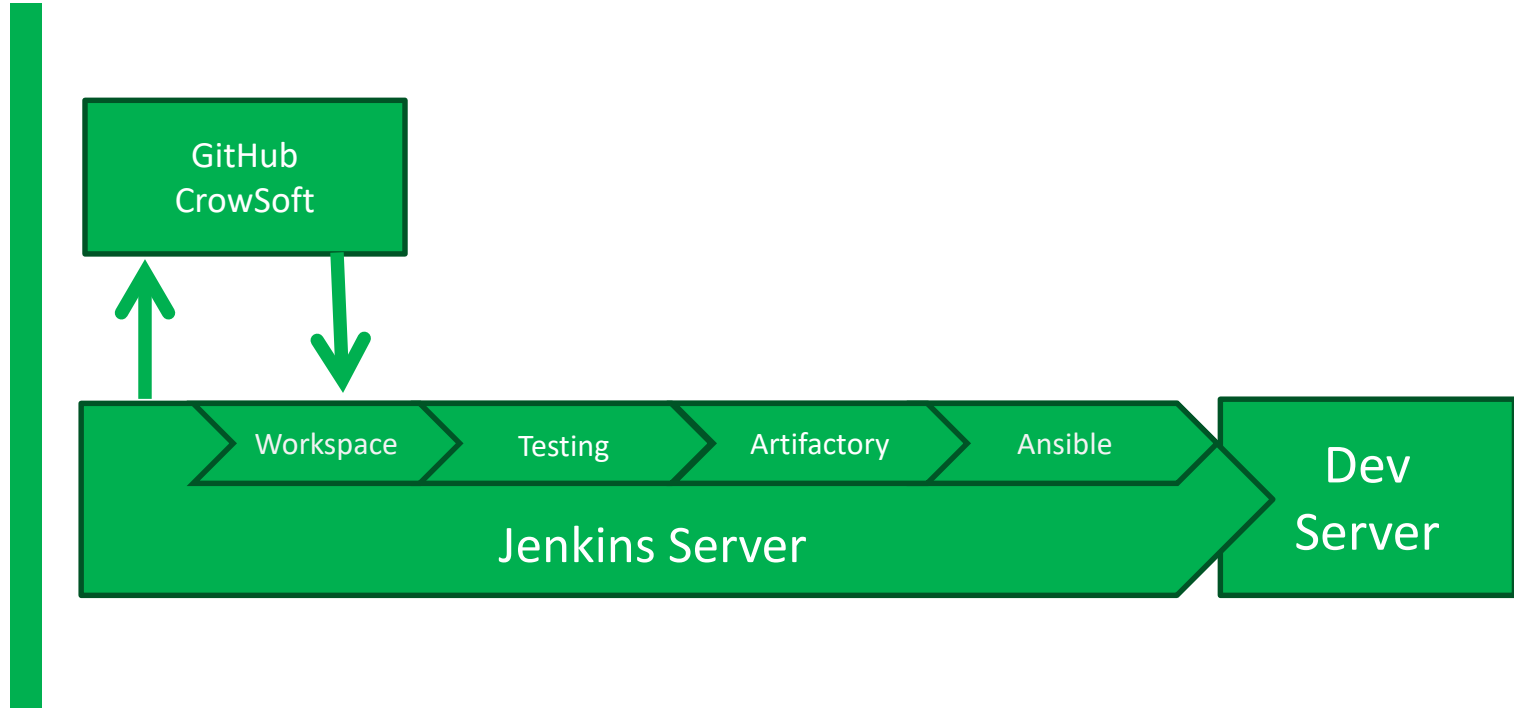
- Programming Language: C#, JavaScript and HTML
- IDE: Visual Studio Code
- Framework: .Net Core 2.2
- Supporting Platforms: Windows, Linux, MacOS
- Pattern: MVC (Model View Controller)
- Type App: ASP.NET MVC Web Application includes bootstrapping
- Database: MySQL
- Security
 - Authentication: Token Based, Password hash (PBKDF2 algorithm with HMAC-SHA256, 128-bit salt, 256-bit subkey, and 10,000 iterations)
 - Authorization: Role-based Authorization
- Hosting Server: Linux Ubuntu 16.04 (using Apache as reverse proxy)
- Performance Tests: wrk Performance Tool (Open-source)
- Coding Standards Documentation Completed



Jenkins Pipeline

Colin Kenny

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Unit Testing

Charles Aylward

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- Nunit for .Net Framework
- Testing Controllers Actions (CRUD)
- Automated on Jenkins Pipeline
- Example:

```
Test run for /var/lib/jenkins/workspace/build-mvc/Projects/crowsoft_unittests/bin/Debug/netcoreapp2.2/crowsoft_unittests.dll(.NETCoreApp,Version=v2.2)
Microsoft (R) Test Execution Command Line Tool Version 15.9.0
Copyright (c) Microsoft Corporation. All rights reserved.
```

```
Starting test execution, please wait...
```

```
Total tests: 2. Passed: 2. Failed: 0. Skipped: 0.
Test Run Successful.
Test execution time: 5.1692 Seconds
Finished: SUCCESS
```



CodeQuality - SonarQube

Bharathi Gadhiraaju

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Jenkins Server

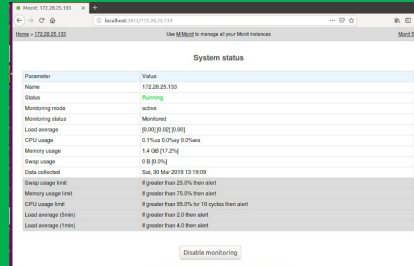
<http://172.28.25.136:8080/>

Job has reference
to git for
source code

SonarQube Server

<http://172.28.25.123:8088/>

Monitoring Tool Monit Setup for CrowSoft



| Parameter | Value |
|--------------------|---|
| Name | 172.28.25.133 |
| Status | Running |
| Monitoring mode | active |
| Monitoring status | Monitored |
| Load average | [0.00][0.02][0.00] |
| CPU usage | 0.74% (0.00% / 0.74%) |
| Memory usage | 1.4 GB (17.2%) |
| Swap usage | 0.0 GB (0.0%) |
| Code updated | Sat, 30 Mar 2018 18:19:03 |
| Swap usage limit | 0 greater than 25.0% then alert |
| Memory usage limit | 0 greater than 75.0% then alert |
| CPU usage limit | 0 greater than 95.0% for 10 cycles then alert |
| Load average limit | 0 greater than 2.0 then alert |
| Load average limit | 0 greater than 4.0 then alert |

```
jevadn@crowsoft-dev-ubuntu-golden:~$ wrk -c 256 -t 32 -d 10 http://172.28.25.133
Running 10s test @ http://172.28.25.133
32 threads and 256 connections
Thread Stats Avg Stdev Max +/- Stdev
Latency 138.32ms 277.34ms 1.85s 92.32%
Req/Sec 73.71 72.29 340.00 81.06%
10147 requests in 10.09s, 34.40MB read
requests/sec: 1005.51
transfer/sec: 3.41MB
jevadn@crowsoft-dev-ubuntu-golden:~$
```

Performance Analyser

Wrk Setup for CrowSoft

To run wrk on the application,
issue the below command

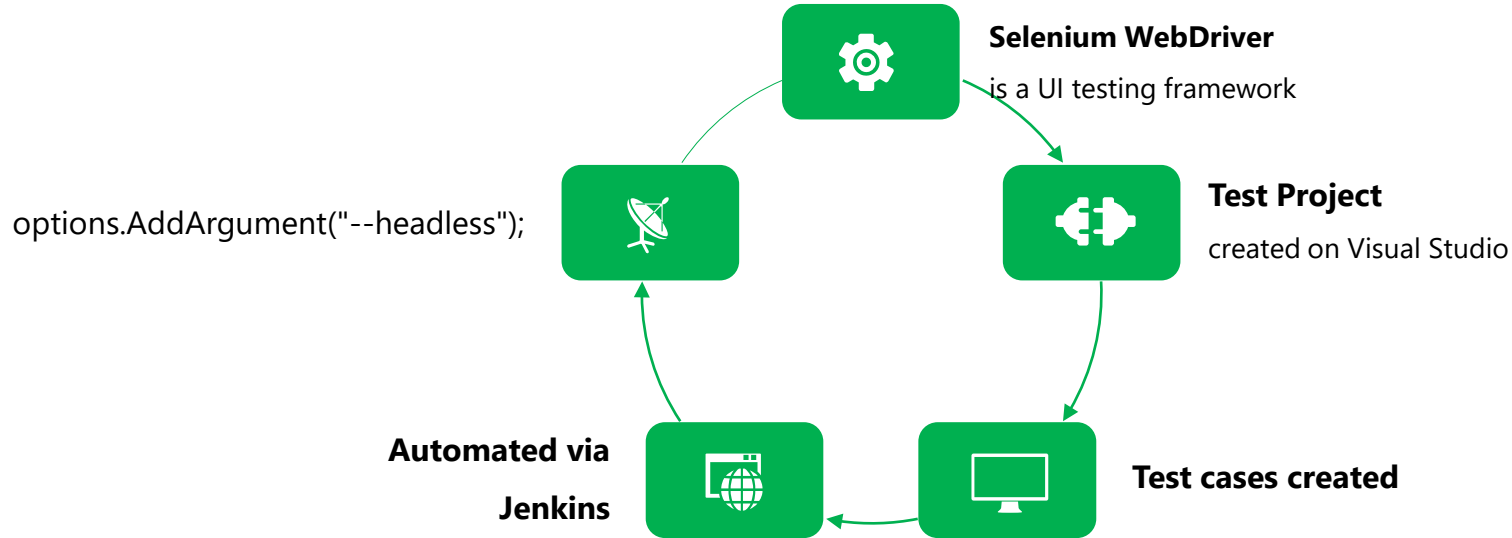
```
$ wrk -c 256 -t 32 -d 10  
http://172.28.25.133
```



Selenium

Matthew Mc Colgan

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Selenium Service

Joji Pradhan Thokala

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WAITING

Mary Walsh



Artifactory

Mary Walsh

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Central
Location



Build Once
Deploy Often



Groups
Permissions



JFrog

ARTIFACTORY



Limiter
Access



Deploy
One Location

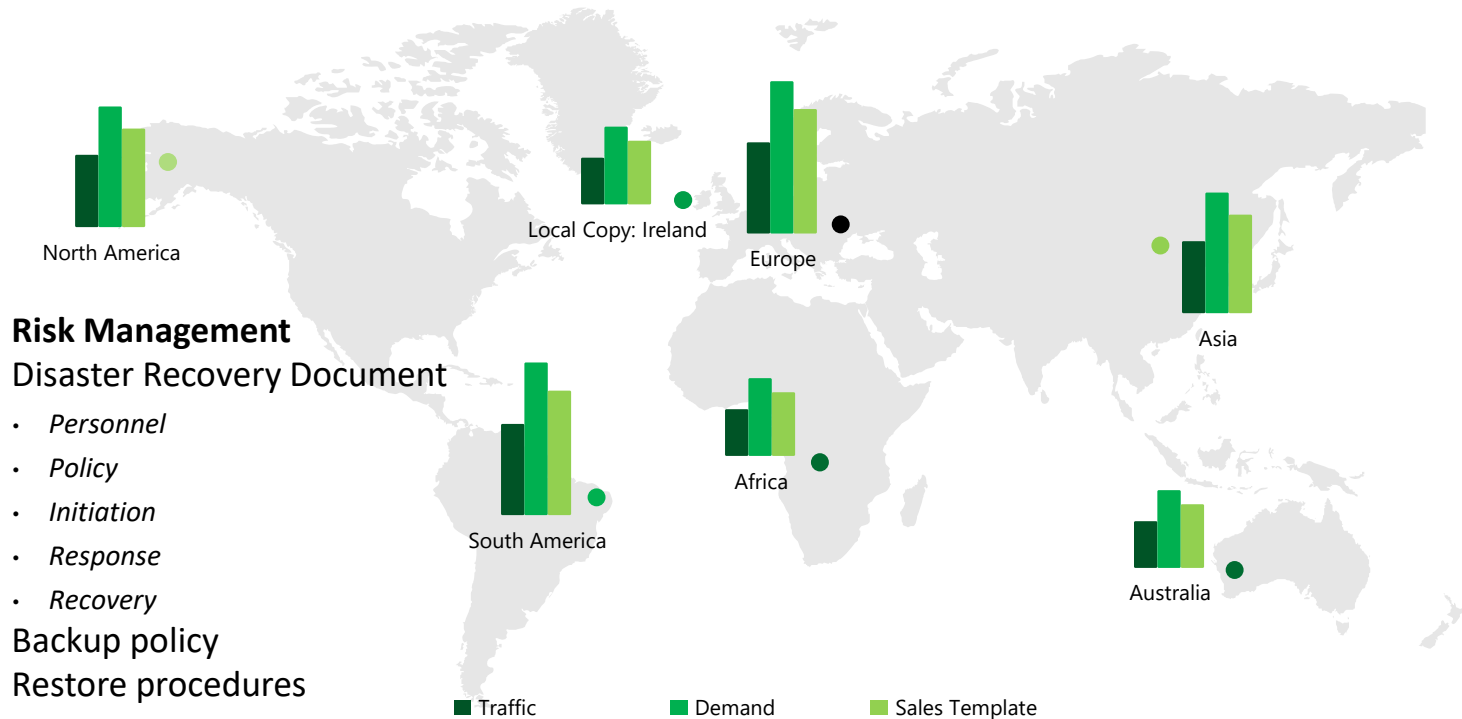
Michael McFadden



Disaster Recovery

Michael McFadden

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Risk Management

Disaster Recovery Document

- *Personnel*
- *Policy*
- *Initiation*
- *Response*
- *Recovery*

Backup policy

Restore procedures

Liam Whorriskey



Questions

Open Mic...