

MICHIGAN STATE

U N I V E R S I T Y

Project Plan Presentation

Application Lifecycle Framework 2.0

The Capstone Experience

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Fall 2023



*From Students...
...to Professionals*

Project Sponsor Overview

- One of the largest automobile manufacturers
- Plan to be Carbon Neutral by 2040
- Electric and autonomous vehicle development
- Shift to a more software-focused company
- Based in Detroit, Michigan



Project Functional Specifications

- Increases and improves functionality of existing workflow management system
- Improves system to handle more scenarios for application installations from request to production
- Adds forms for additional requests and scenarios
- Improves email notification of affiliated teams
- Forms will respond and change based on user inputs
- Overall user experience improvements



Project Design Specifications

- Add links and section to toolbar to provide users a clean and efficient experience
- Admin can review a request and assign it to multiple EWTs using collapsible fields
- Provide user direct link and form to streamline software removal process
- Provide user direct link and form to submit Policies which will be implemented by Security team



Screen Mockup: Submit Request Page

GM Application Lifecycle Framework

Submit Request | View Requests | Engineer Tasks | EWO Factory | Site Logs

Client Solutions Request Form (CSRF) High-level Overview

CSRF Request Submitted → Request Processed and Assigned → Request Engineered → Request Implemented

Register your app in the ASMS system and follow the big rules links

- Client Solutions Requirements (Engineering/Big Rules)
- Deviation Process
- Client Engineering Business Templates
- ASMS Site
- Additional Horizon View Process Information
- Removal Form
- GPO Form

CSRF Form



Screen Mockup: Removal Form Fields

GM Application Lifecycle Framework

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General Deployment Information

Targeted Removal Platforms*

- Online
- EDWS
- TCWS
- Manufacturing
- Macintosh
- ZeroTrust/Verified Trust
- Horizon View
- Ubuntu

Software Removal Scope*

Remove from deployment toolset (SCCM, ASIS, etc) only and leave on clients

Was this software deployed to any executive hostnames?*

The executive support team needs to be notified if the pilot or production phases are targeting any executive hostnames. There is executive support representation on the pre-pilot/ pilot results review call, so they will be notified when reviewing this form.

Yes

Was this software part of a functional group?*

Formatly known as "Model Groups"

No

List EWO numbers or product name and all versions to be removed *

EWO CE23002, CE23157, CE22054
Version 1.8.6, 1.7.9

IT Store Information



Screen Mockup: GPO Form Fields

gm Application Lifecycle Framework

Submit Request | View Requests | Engineer Tasks | EWO Factory | Site Logs | User Icon

ZERO trust/verifed trust
 Horizon View
 Ubuntu

Deployment Regions/Domains: *

NAM
 LAAM
 EUR
 APA
 AUS
 OnStar
 AMOSEC

Deployment Platforms: *

Windows 7 32-bit
 Windows 7 64-bit
 Windows 10 64-bit
 Windows 11
 MacIntosh OS
 Virtual Desktop (VDI) - Windows 10 64-bit
 Virtual Desktop (VDI) - Call Centers
 Published Application (RDSH) - Windows Server 2012 R2 64-bit
 Ubuntu Desktop 14.04 LTS
 Ubuntu Desktop 16.04 LTS
 Ubuntu Desktop 18.04 LTS

Is this request MS Group Policy Object (GPO) related? *
Note: GPO requests for Manufacturing must be submitted to IAM team.
<https://share.gm.com/sites/iam/UIRequestSite/default.aspx>

Yes

Is this request MS Intune (CSP) related? *

Yes

Additional Information



Screen Mockup: Distribution Mechanism SCCM Fields

The screenshot shows a web browser window with the URL `localhost:4333/cmf-form`. The page title is "GM Application Lifecycle Framework". The main content area is titled "Distribution Mechanism Items" and contains the following fields:

- SCCM** (Header)
- EWO SCCM** (Text input)
- EWO Version SCCM** (Text input)
- Engineering Team - SCCM** (Dropdown menu)
- Assigned to SCCM** (Dropdown menu)
- Round** (Text input)
- Workflow Items** (Section Header)
- Engineering Team Notified - SCCM** (Dropdown menu)
- Engineer Assigned Notified - SCCM** (Dropdown menu)
- Engineering Task SCCM Created** (Dropdown menu)
- Resource Coordinated Notified SCCM** (Dropdown menu)
- BigFix** (Text input)
- InTune** (Text input)

At the bottom of the form, there are three buttons: "Deny" (red), "Hold" (dark blue), and "Approve" (white with a grey border).



Screen Mockup: Distribution Mechanism InTune Fields

The screenshot shows a web browser window with the URL `localhost:4200/carl-form`. The page title is "Distribution Mechanism Items". The form contains the following fields and controls:

- SCCM**: Input field with a "+" icon on the right.
- BigFix**: Input field with a "+" icon on the right.
- InTune**: Input field with a "-" icon on the right.
- EWO InTune**: Input field.
- EWO Version InTune**: Input field.
- Engineering Team - InTune**: Dropdown menu.
- Assigned to InTune**: Dropdown menu.
- Round**: Input field.
- Workflow Items**: Section header.
- Engineering Team Notified - InTune**: Dropdown menu.
- Engineer Assigned Notified - InTune**: Dropdown menu.
- Engineering Task InTune Created**: Dropdown menu.
- Resource Coordinated Notified InTune**: Dropdown menu.

At the bottom of the form, there are three buttons: **Deny** (red), **Hold** (dark blue), and **Approve** (white with a black border).



Screen Mockup: Site Logs

gm Application Lifecycle Framework

Submit Request | View Requests | Engineer Tasks | EWO Factory | Site Logs

Logs: Filter by: all Sort by: new

Log ID	User	Action	Time	Date	Log File Link
11587	Bukharin, Nikolai	Email successfully sent to requester ID 479156	14:08	3/15/1938	log11587.json
11586	Rykov, Alexei	Request successfully submitted: CSRF 106434	08:15	3/15/1938	log11586.json
11585	Rykov, Alexei	Cross Testing complete: QA email sent	08:12	3/15/1938	log11585.json
11584	Kirov, Sergei	EWO CE23001 created: CE SCCM team email sent	22:36	3/14/1938	log11584.json
11583	Kamenev, Lev	Approved CSRF 512863: email sent to engineer 117	16:01	3/14/1938	log11583.json
11582	Yezhov, Nikolai	UAT/IAT complete: email sent to certification engineer	10:40	3/13/1938	log11582.json

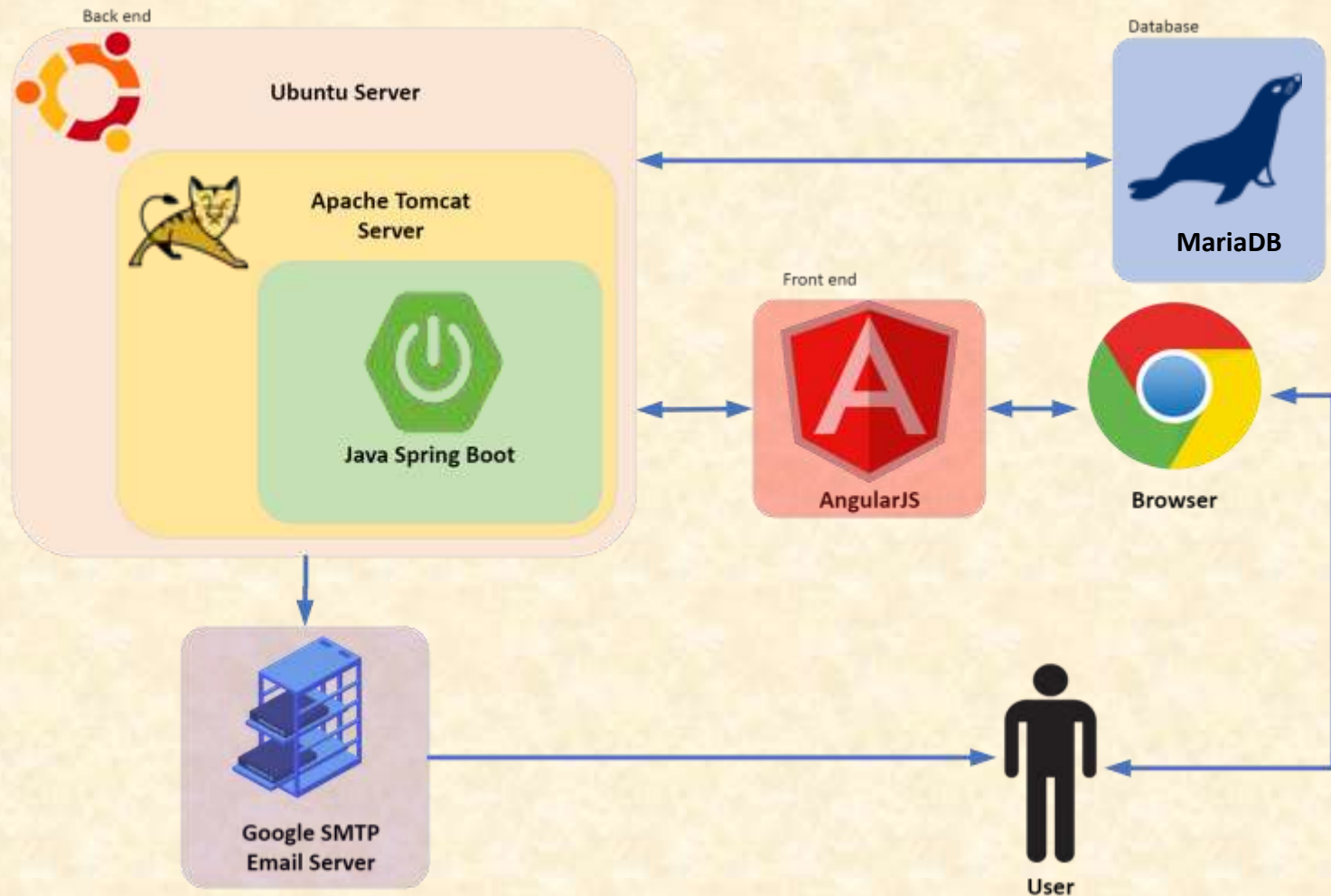


Project Technical Specifications

- Backend will be a Java Spring Boot application running on an Apache Tomcat Server, within an Ubuntu distribution
- Frontend will be built upon an existing AngularJS application
- MariaDB instance is going to store client solution forms, employee information, and engineering work tasks
- SMTP Server will be used to send emails for notifying employees of process progression



Project System Architecture



Project System Components

- Hardware Platforms
 - Rack Server in Lab
- Software Platforms / Technologies
 - Spring Boot
 - Angular JS
 - Maria DB
 - Google SMTP server
 - Ubuntu



Project Risks

- Database relationship
 - Description - Modifying database relationships to allow multiple engineering work tasks per request
 - Mitigation - Evaluate different schema diagrams to identify the most suitable approach
- JQuery Compatibility
 - Description - Incorporating provided JQuery Scripts into AngularJS
 - Mitigation - Verify compatibility, isolate JQuery functions, follow AngularJS best practices, and conduct rigorous testing
- Database Synchronization
 - Description - Challenges of database synchronization a multi-user environment
 - Mitigation - Ensure a persistent data migration by assessing data for inconsistencies, persistent endpoints calls, creating backups, and making necessary schema adjustments
- Scalability
 - Description - Scalability challenges with handling high request and task volumes
 - Mitigation – Test our application with large volumes of data as well as investigating methods for handling large datasets



Questions?

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