

Max van der Walt

ST10354483

Deployment Process and Requirements

Table of Contents

Prerequisites	3
Google Cloud Setup.....	3
Firebase Setup	3
Development Environment.....	3
Deployment Processes.....	4
Backend API Deployment	4
Web Frontend Deployment.....	5

Prerequisites

Google Cloud Setup

- Create a Google Cloud Project
- In Google Cloud Console, navigate to APIs & Services -> Library and enable the following:
 - o Enable Cloud Run API
 - o Cloud Build API
 - o Artifact Registry API
- Set up artifact repository under Registry -> Repositories
 - o Create new repository
 - o Choose Docker as format
 - o Select appropriate region
 - o Name the repository "icmms-containers"

Firebase Setup

- Create Firebase project
- Link Google Cloud project
- Enable the following services
 - o Authentication: Go to Authentication -> sign-in method -> enable Email/Password & Google
 - o Firestore: Go to Firestore Database -> Create Database -> Start in test mode
 - o App Check: Go to App Check -> Register apps
- Generate Configuration Files
 - o Go to Project Settings -> General -> Your apps
 - o Add Android app -> download 'google-services.json' and place in app directory.
 - o Add Web app -> copy config object -> use in web app.

Development Environment

Required downloads

- .NET SDK 6.0+
- Google Cloud SDK
- Docker Desktop
- Android Studio

Deployment Processes

Backend API Deployment

Requirements:

- Docker file in /API folder
- Google Cloud Run service configuration
- Environment variables for
 - o Firestore connection
 - o Gemini API keys
 - o Firebase Authentication integration

Deployment steps:

In the project terminal paste

```
cd API
gcloud run deploy icmms-api \
  --source . \
  --platform managed \
  --region us-central1 \
  --allow-unauthenticated
```

Web Frontend Deployment

Requirements:

- Docker file in /Web folder
- Configuration to connect to Cloud Run API
- Firebase Authentication integration

Deployment Steps:

In the project terminal paste

```
cd Web
gcloud run deploy icmms-web \ --source . \ --platform managed
\ --region us-central1 \ --allow-unauthenticated
```

Mobile App Build Process

Requirements:

- Android Studio
- 'google-services.json' file in app directory
- Proper API endpoint configuration pointing to Cloud Run API

Build steps:

```
# Generate debug APK for testing
cd Mobile
./gradlew assembleDebug
# APK location: app/build/outputs/apk/debug/app-debug.apk

# Generate release APK for distribution
./gradlew assembleRelease
# APK location: app/build/outputs/apk/release/app-release.apk
```

Installation:

- Transfer APK to Android device
 - Enable "Install from unknown sources"
 - Install APK directly
- OR
- Can install directly if device is connected using

```
adb install app-debug.apk
```