Design Requirements
For
IoT Based Application Platform

Internals Of Application Server

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Introduction

The Internet of Things is a technological revolution which provides the vision of a connected world of Things. IoT platforms (often referred to as IoT middleware) are the support software that connects everything in an IoT system. Variety of platforms are now a days available that can support entire development to deployment of IoT applications and systems. An IoT platform facilitates communication, data flow, device management, and the functionality of applications. This distributed platform will be able to develop and deploy different functionalities.

IoT platforms help:

- Connect hardware.
- Handle different communication protocols.
- Provide security and authentication for devices and users.
- Collect, visualize, and analyze data.
- Integrate with other web services.

Environment to be used :-

- 64-bit OS(Linux)
- Minimum RAM requirements: 4GB
- Processor: Intel i3 5th Generation

Technology Stack :-

- Python
- JSON: for config file
- Bash Script for automation

Platform Initializer

- **Flow Diagram**

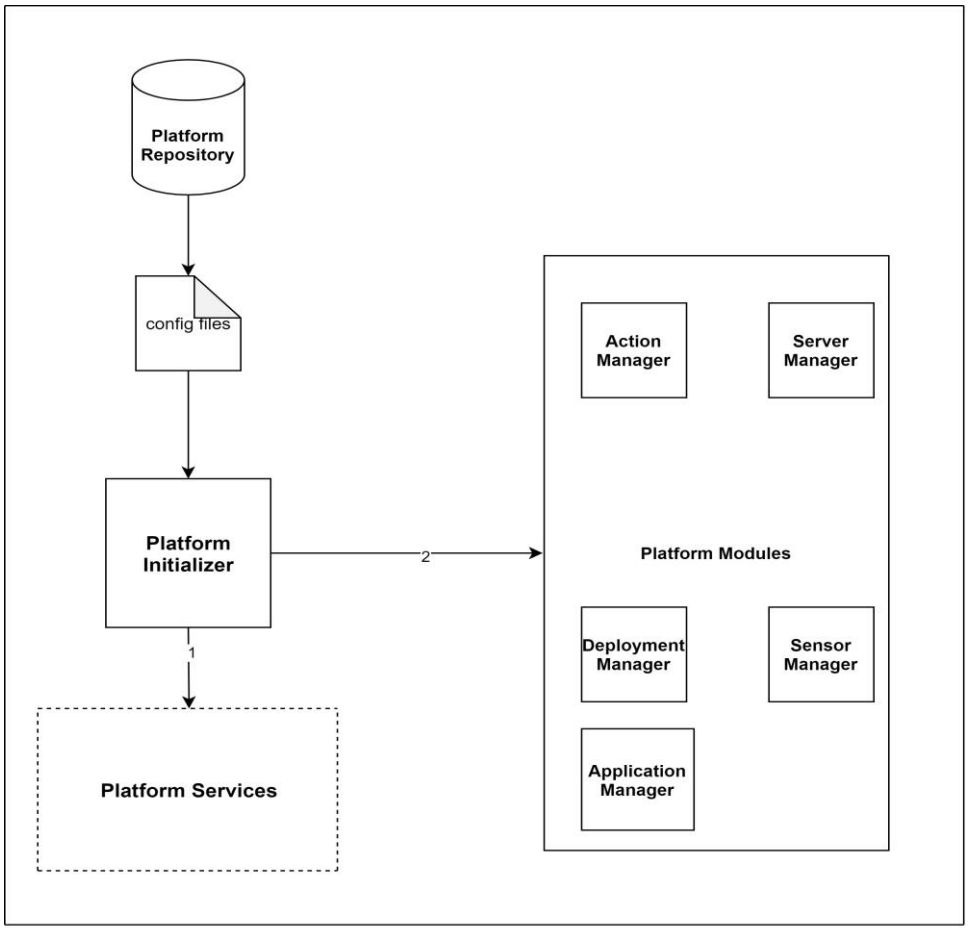


Fig 1. Platform Initializer

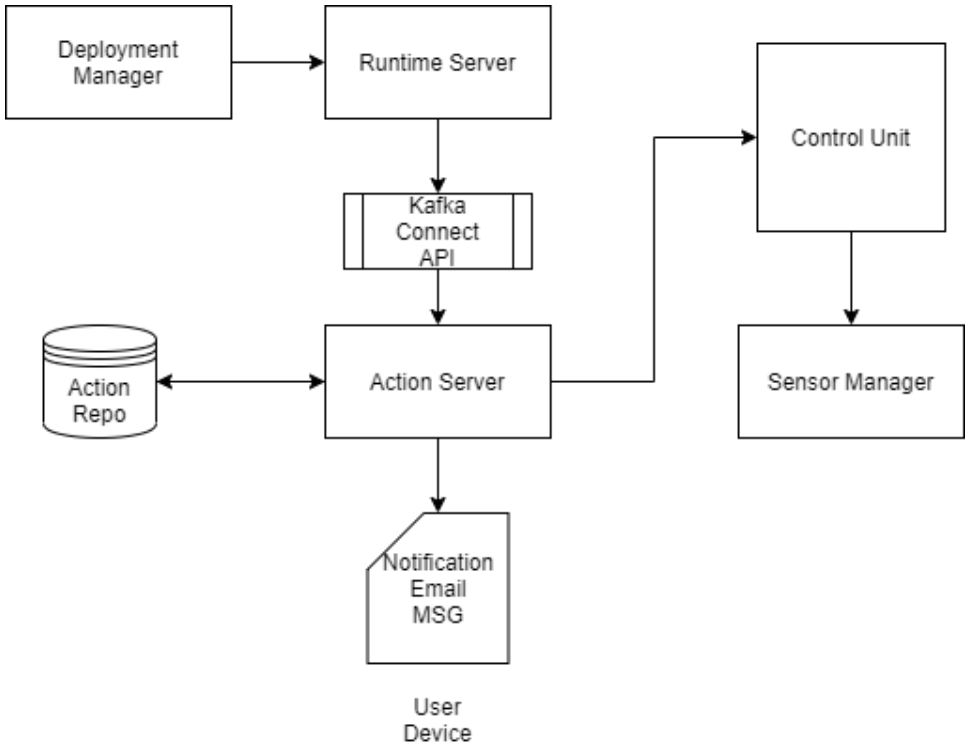
- **Working**
  - The Platform Initializer will fetch the config files from the platform repository.
  - The config files contain information about the EC2 instances (IP) and modules on our platform.

- The Platform Initializer will Initialize the Platform services followed by Independent Platform Modules.

- **Key elements**
  - **Platform config file –** the platform config file contains the module location information in different instances.
  - **Platform initialization file –** the program will initialize all the modules in servers as specified by the config file.

Action Manager

- **Flow Diagram**



- **Working**
  - The Action Server will get the output from the Runtime Server in the Message queue.
  - The Action Server will parse the input given by Runtime Server.

    - Based on the input, it will map the following in the Action Repository.
    - If the mapping is correct, it will generate output for the user devices.
- **Key element**
    - **Action Api file –** This file will be used by the Application developer to use action–based services.
    - **Action Service file –** This file will be accessed by Action Manager to use the functionality of email and sms.
- **Output Format**
    - Email
    - Notification
    - Callback Function
    - Control Signal