IAS

Team Design

Team-2

11th March, 2020

Topological Manager , Action Server, Daemon services, Monitoring and Logging, and Database (Registry and repository)

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Contents:

1. Introduction

Definition: Platform for Smart City is a distributed platform that provides build, development and deployment functionalities. The platform will be able to deploy and run applications that can be used to manage a smart city . With this platform, we will be trying to automate the tasks that needed to be done regularly . Like applications to save power by sensing room and switching off electrical appliances, automate switching on and off street lights based on natural light also efficient gardening systems which can automatically turn on and off the sprinklers in the garden etc.

Scope: On Our platform the app developer can do app development with his own custom code updates by a set of independent services that platform provides. The platform provides various independent services like Security service (Authentication and Authorization), Build and Deployment capabilities , Logging and monitoring, Notification and Actions Service, Resource management, Scheduling service and repository to store data.

2. Test Cases

Logging and Monitoring:

1. The logging and monitoring service will communicate and get status of all components of the system.
2. Logging will receive status msgs of actions done at different components and write about it in the repository
3. Monitoring will check if componets are running properly by sending the heartbeat message and receiving respisonse and write about it in the repository.

Healthcare:

1. Healthcare will read from registry the status of components.
2. If component is not running properly or have some issue it will perform corresponding action
3. Also it will notify about it to SLC

Action/Notification Module:

1. It will receive data from the runtime server about the running service.
2. If any action or notification is needed to be sent it will get to know about it from data received from runtime servers

3. It will then perform the action / send notification. For performing action it will communicate with the control system which will perform required action.

Daemon Services:

1. These are the services which are required to run on a daily basis on the basis of some condition(time or event)(Fixed Rule) .
2. This module will read about services from the repository and give details to SLC.
3. The SLC will further run the demon service as required.

Registry :

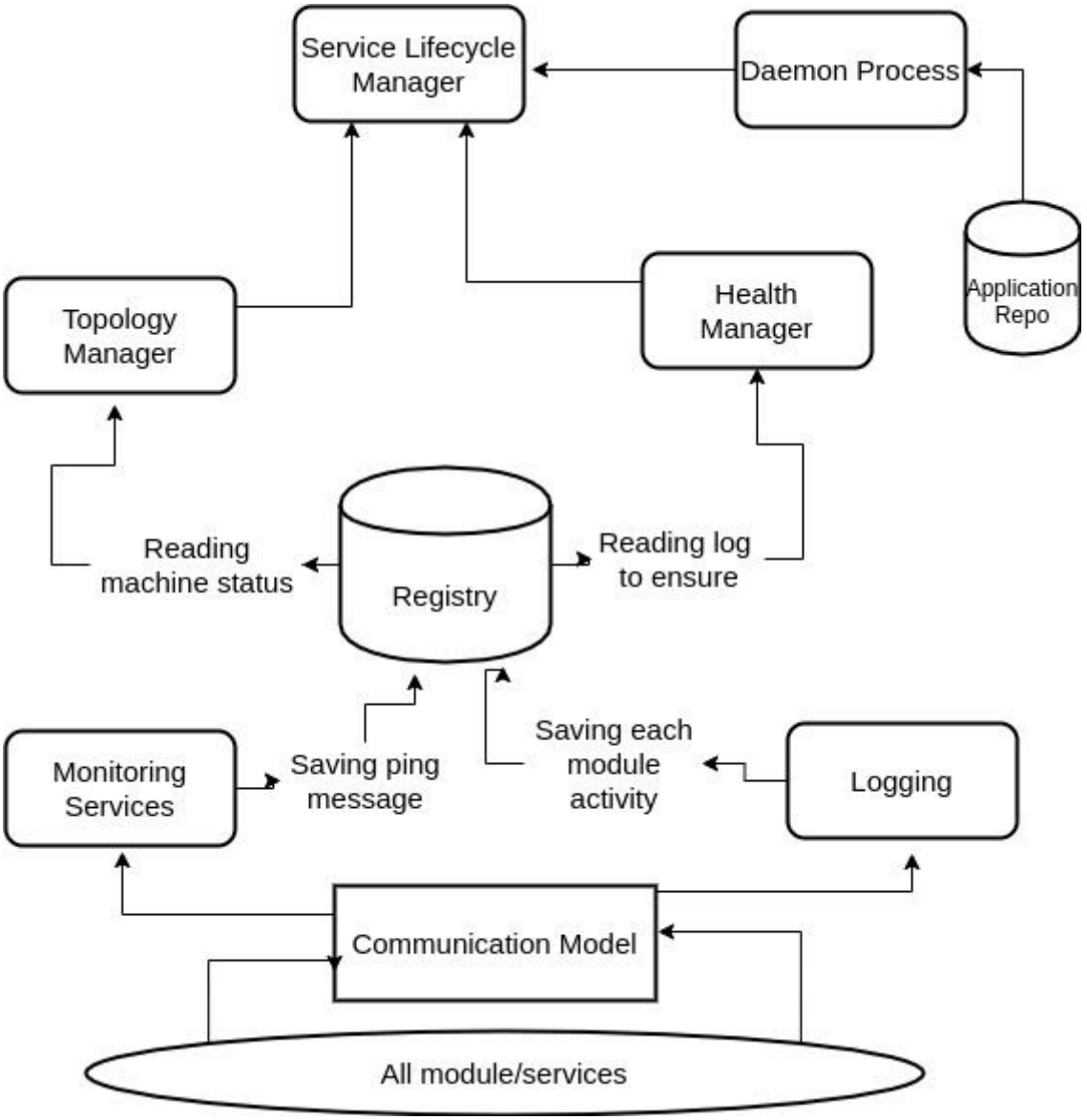
1. It holds dynamic content.
2. It will save the state and progress of each module running in our platform with file locations.
3. It collects data from each running module so when required to restore the state of the module.
4. For restoring, machine stats are given to the topology manager.

Repository:

1. Module needs to save dependent data, so it gets saved in its repository.
2. Mainly split among users and services corresponding through that module.
3. It collects data from the corresponding module and saves the config file of that module.
4. When required, it sends data requested by module from its repo, it can be for authentication, type checking or formatting.

   Example: App repo, Algo repo, etc.

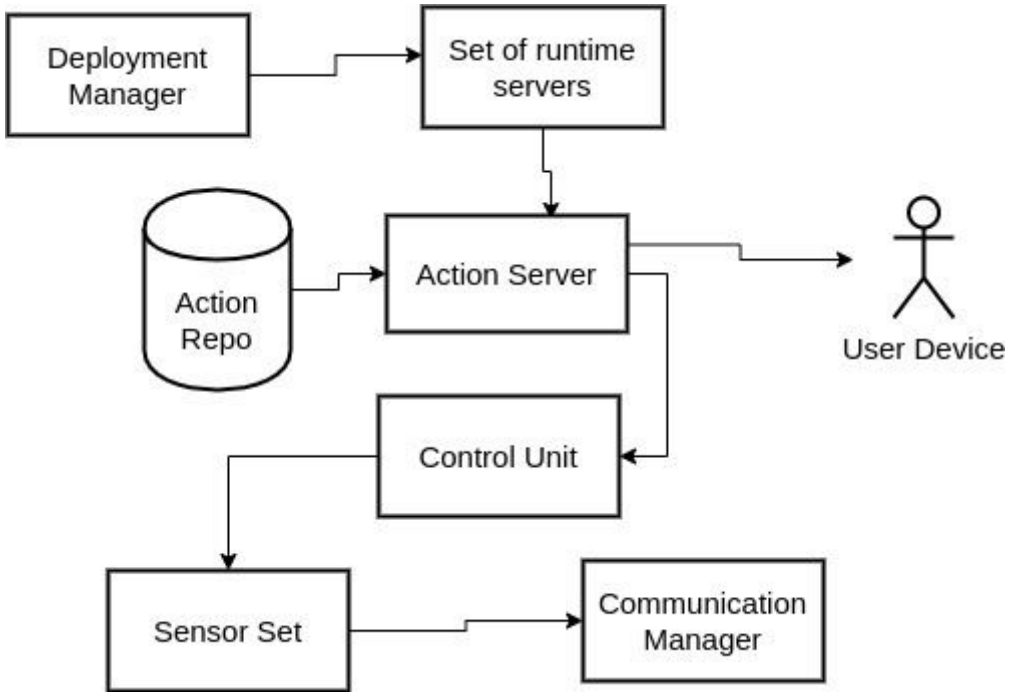
Work flow of topological manager , logging and monitoring services



- ❏ Monitoring services will keep sending heartbeat messages to modules and will save their response in the registry.
- ❏ Now topological will read these modules stats to know the traffic details on any service and server. If there is more traffic then it will notify the service lifecycle manager or server lifecycle manager to create more instances.

- ❏ Logging will similarly dump every log detail in the registry for every module.
- ❏ Now these entries will be examined by the health manager to know whether all components are up or not. If not it will notify the topological manager to handle the case.
- ❏ Now the topological manager will run few steps similar to bootstraps unit to again start that module.

Working of action server and daemon services



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Action server will be majorly reponsible to stimulate output generated by runtime server .
Runtime server will generate output and will send that to the action server.
It will also send a token carrying other details like userid , application name, service name, sendorID, execution time, action associated to service etc.
Now action server will look into action repo to see mapping between action and its algorithm.
Now action server will find that algorithm to serve action corresponding to request and will run that algorithm .

The daemon services are the services which are required to run on a daily basis or on the basis of some event. The system will read about daemon process from application repository and tell Slc to run that daemon process at the time event has occured.