

Softwares

Python

Angular

Nodejs/ NPM

Mongo DB

Postgres DB

Kafka

Rabbit MQ

Redis

Nginx

Mobile Development Framework

Application Components

API - Django Rest Framework

UI - Nginx/ Static HTML bundle of Angular Application

Node Backend API - Websocket Layer/ Agent Manager

Celery Process - Asynchronous Task Executor

Report Dashboard Process - Asynchronous Task Executor

Agent - High Performance/ Inventory Data Collector

Consumer - Streaming Data Processor

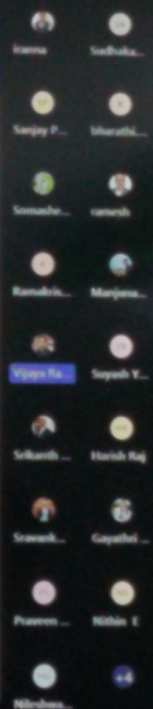
PM2 - Consumer Process Management

Mobile Application - Android/ IOS



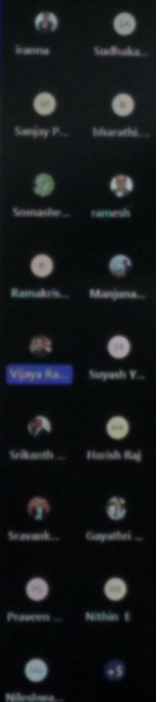
API Server

- Built on top of the Django Rest Framework, following best practices.
- The API Server will manage all requests coming from the User Interface/ Mobile Application.
- Designed to handle high volume of requests, using Gunicorn as the gateway server and Nginx as the reverse proxy.
- Easy integration with third-party systems due to the API server being developed with an API-first approach.
- Uses MongoDB as primary database for saving all configurations and items



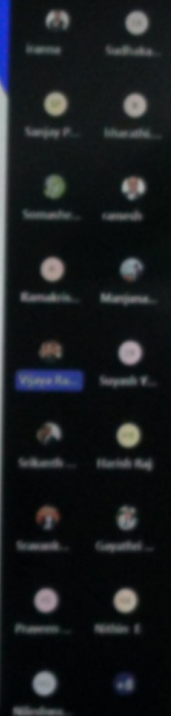
User Interface

- Built on top of the Angular Framework, following best practices.
- Rich UI Experience, Responsiveness, dynamic adaptability to various resolutions, and support for both dark and light themes.
- The UI Configuration offers a rebranding feature, allowing users to customize Logo, Navbar/ Menu colors. This functionality enables clients to maintain their brand aesthetic or preferences, enhancing brand consistency and user engagement.
- UI connects with API Server for data fetching/ updating/ viewing and connects with Websocket server for dashboard & report rendering.



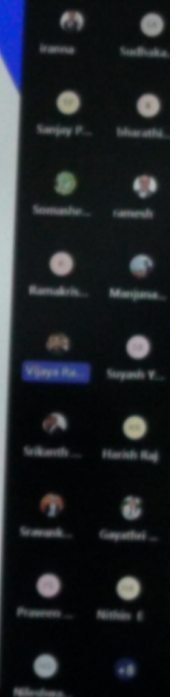
Websocket/ Agent Manager Server (Node)

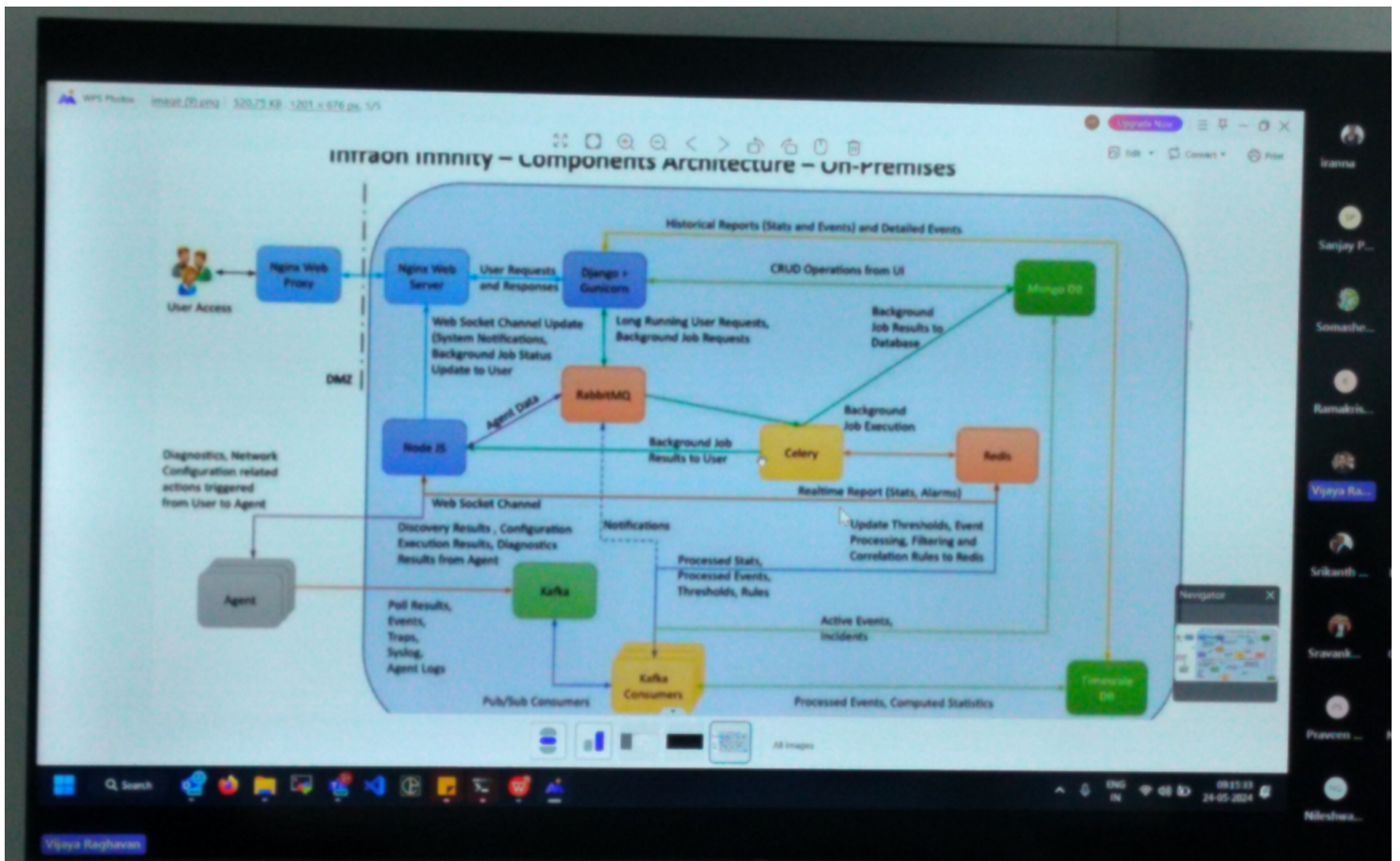
- WebSocket allows real-time, bidirectional communication between clients and servers.
- Responsible for Loading Dashboard Widget& Report within Infraon.
- Serves as Agent Manager - Registering and Data Exchange between Agents and Server and vice versa.
- Designed to handle large number of requests. Helping Agents to Exchange High volume data in realtime.



Celery Process - Task Executor

- These are asynchronous process in the system, initiated based on user actions, defined workflows, or configured rules.
- These executors can be deployed as single cluster to handle all type of tasks. (Ease of Management, Suitable for SMEs)
- Also can be deployed as multiple executors and can be routed to do specific tasks as required by the project needs. (Little Complex Deployment/ management, Suitable for Medium & Large Enterprise)
- Highly versatile - Task Executors, combined with worker settings, helps handling very high loads and ensure High Availability for the system as a standard feature.
- Eg Celery Process: SLA/ Workflow Execution, Notification Email/ SMS/ Convert to Ticket, Bulk Asset Data Processing, Etc.





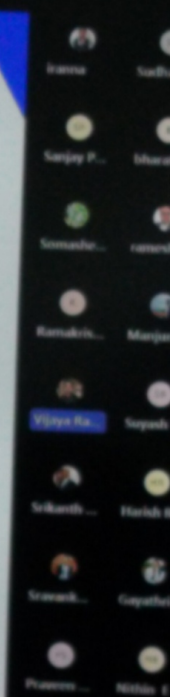
Report Dashboard Process

- Another Asynchronous process - Built using celery
- Only purpose is to serve Dashboard and Report request.
- As report and dashboard request are heavy in application side. it has been decoupled from the main server.
- These servers can be configured as Single Cluster or Seperate instances for Dashboard/ Report.
- With number of workers configuration for these process, helps the system to scale horizontally for any load.



Agent Application - Data Collector

- Agent is a standalone asynchronous process. Pluggable to any Infraon Ecosystem.
- Agent is designed to High performant collects data from various devices and send the data to centralized server, Tested for 1million+ stats in medium server specification.
- Agent uses websocket to communicating with the centralized server. Once connected data sharing will be bi-directional
- The discovery data from the agent will be processed by one of celery process.
- Agent Uses Kafka to transmit performance data.



Agent Application - Inventory Collector

- Unlike Datacollector agent, Inventory Agent is designed solely to collect data from the host machine where it installed.
- As of now inventory agent is available for Windows OS, mac OS, Ubuntu Linux.
- The inventory data will be sent to centralized data periodically every 15 minutes.
- Windows inventory agent has some additional feature like uninstalling software in the host machine and collecting syslog.



Consumer Process

- Consumer Processes are mainly for processing Data from the streaming data source. (Eg: Agent Performance Data)
- These consumer processes are highly scalable and can be deployed in multiple servers at ease using PM2 (Process manager)
- Consumers are responsible for converting raw performance data to other stream like.
 - Raw Polled data to Structured Data
 - Structure Data to Alarm/ Event/ DB Dump
 - Event Data to Notification/ Correlation
 - Trap Data to Notification/ Correlation

