

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	18 October 2022
Team ID	PNT2022TMID02743
Project Name	IoT Based Safety Gadget for Child Safety Monitoring and Notification
Maximum Marks	4 Marks

Technical Architecture:

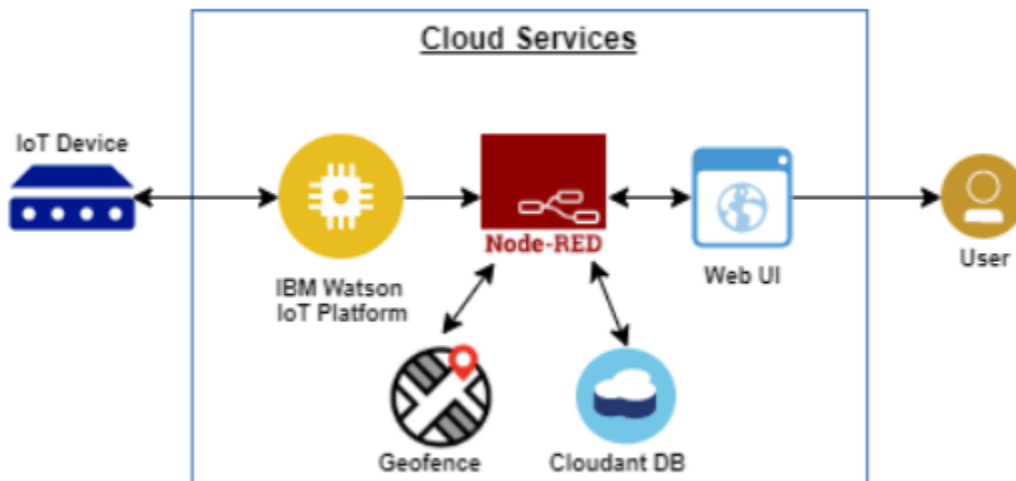


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI	Node - RED, Java script
2.	Track child	Light - weight MQTT protocol	C++ , publish / subscribe model , IBM IOT Watson , Node - RED
3.	View child location history	Retrieve data from db and display	Cloudant , Node - RED
4.	View weather forecast of child's location	Retrieve weather forecast from openweathermap api	IBM IOT Watson , Node - RED
5.	Communicate with child	Communicate with the child using UDP protocol	UDP , IBM IoT Watson , Node - RED
6.	Cloud Database	Database Service on Cloud	IBM Cloud
7.	Create geo fence	Create geofence (safe zone) for child using node - RED	Node - RED , Cloudant

8.	Notification from children	Receive notification from child.	Node - Red , IBM IoT Watson
9.	Openweather map API	Fetch details about weather of a particular location	Weather API.
10.	Infrastructure (Server / Cloud)	Application Deployment on Local Cloud	IBM Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Open weathermap API
2.	Security Implementations	The IBM i System Secure Sockets Layer (SSL)/Transport Layer Security (TLS) protocols and ciphers suites	SSL / TLS
3.	Scalable Architecture	Load scaling	Load balancer
4.	Availability	High availability	IBM Cloud
5.	Performance	The system designed to be high performance with efficient request processing.	Python , Cloudant , IBM Cloud

References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>