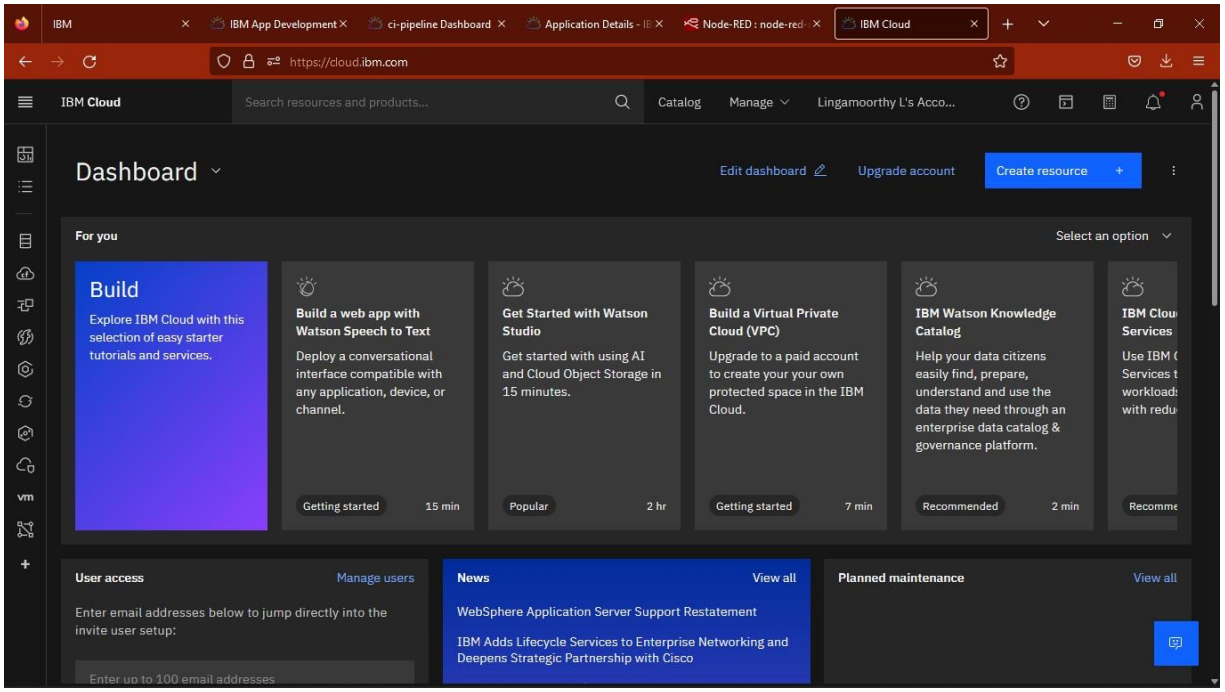
Project Development Phase
Delivery of Sprint-1

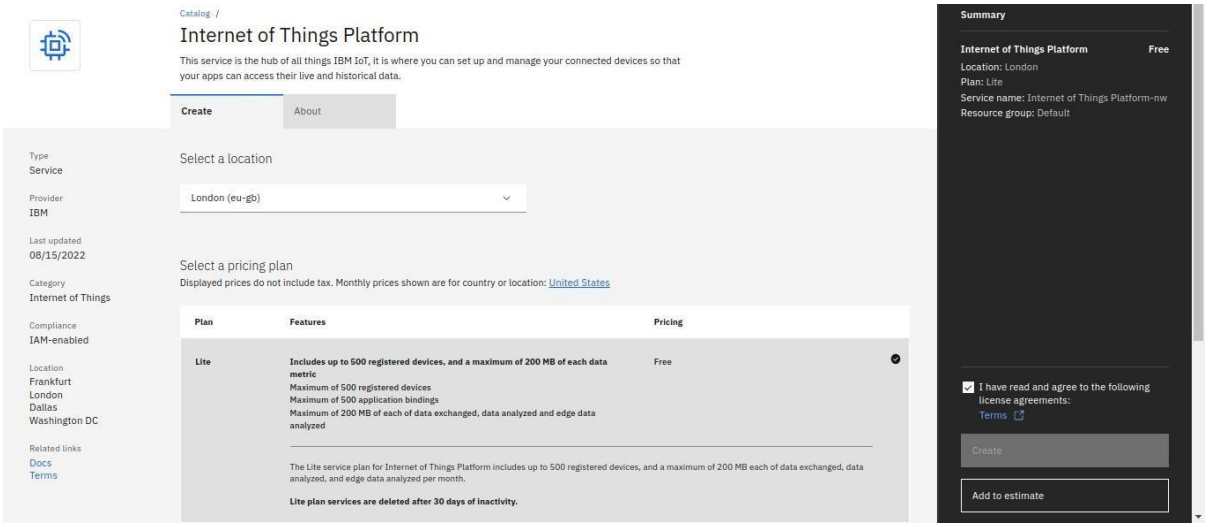
Date	16 November 2022
Team ID	PNT22022TMID14391
Project Name	INDUSTRY - SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM

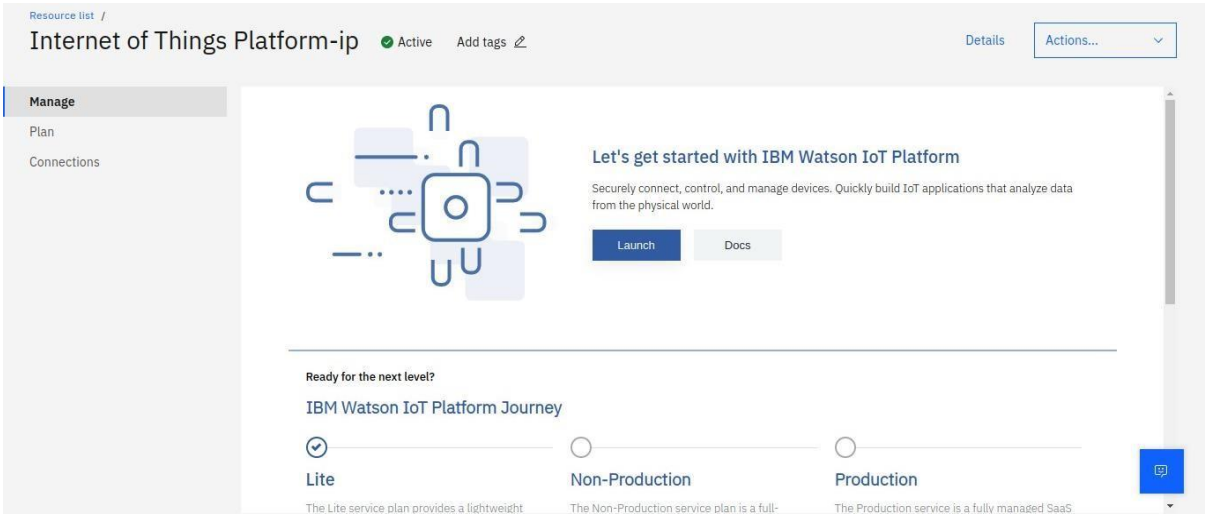
BUILDING PHASE:

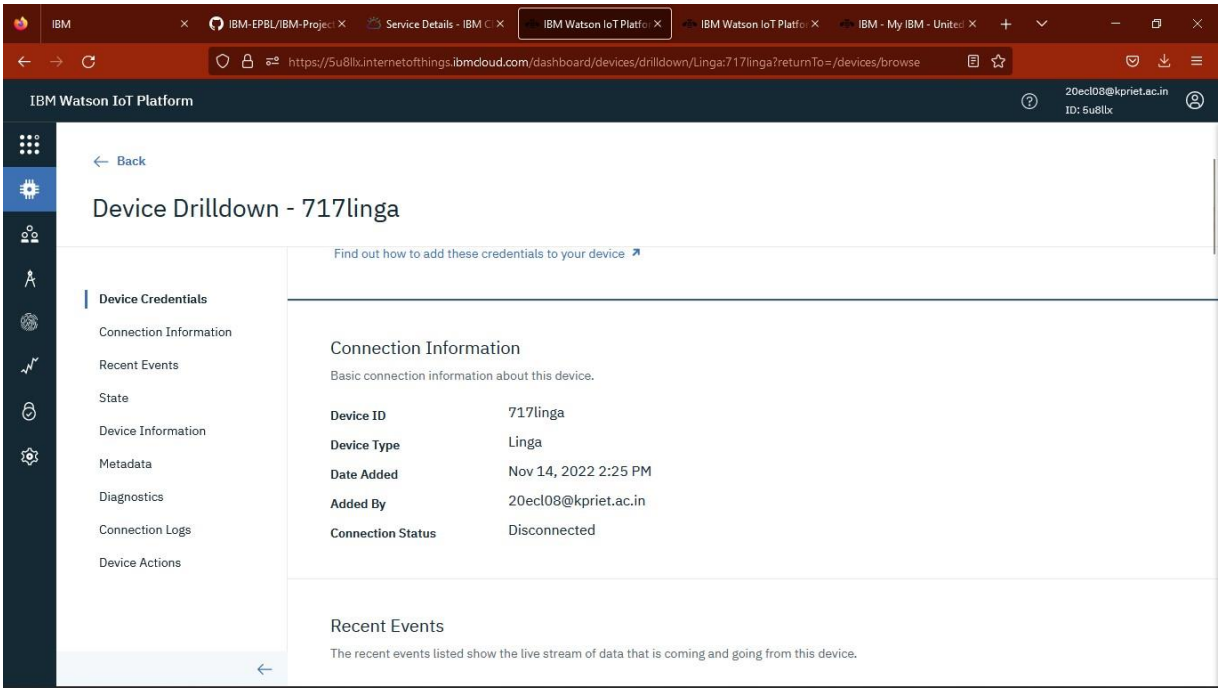
TO Create the Watson Assistant Service and IOT Platform:



Choosing the location:







Program:

```
#include <WiFi.h>
#include <PubSubClient.h>

#include "DHT.h"

#define DHTPIN 15

#define DHTTYPE DHT22

#define LED 2

DHT dht (DHTPIN, DHTTYPE);



void callback(char* subscribetopic, byte* payload, unsigned int   payloadLength);



//-------credentials of IBM Accounts------

#define ORG "zbgr67"//IBM ORGANITION ID

#define DEVICE_TYPE "fershidevicetype"
```

```
#define DEVICE_ID "fershideviceid"                    //Device ID mentioned in ibm watson IOT
Platform

#define TOKEN "fershiageona"     //Token      String

data3; float t;


char publishTopic[] = "iot-2/evt/Data/fmt/json";        // topic name and type of event perform  and
                                                              format in which data to be send

char subscribetopic[] = "iot-2/cmd/command/fmt/String";                  // cmd  REPRESENT
command type AND COMMAND IS TEST OF FORMAT STRING char
authMethod[] = "usetoken-auth";                                  // authentication method char token[] = TOKEN;  char
clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;                              //client id




PubSubClient client(server, 1883, callback ,wifiClient);

 void setup()// configureing the ESP32

{

  Serial.begin(115200);   dht.begin();   pinMode(LED,OUTPUT);   delay(10);

Serial.println();   wificonnect();   mqttconnect();



}  void loop()// Recursive

Function      {

 t = dht.readTemperature();


  Serial.print("temperature:");


  Serial.println(t);



  PublishData(t);   delay(1000);   if

(!client.loop()) {     mqttconnect();

  }

}
```

```
/*.....retrieving to  Cloud.....*/
 void PublishData(float temp) {   mqttconnect();//function call for  connecting to ibm
  /*    creating the String in in form JSon to update the data to ibm cloud   */
  String payload = "{\"temperature\":";   payload
+= temp;   payload += "}";
      Serial.print("Sending payload: ");
      Serial.println(payload);         if
(client.publish(publishTopic, (char*) payload.c_str()))
{
   Serial.println("Publish ok");// if it sucessfully upload data on the cloud then it will print publish ok in Serial monitor or else it will print publish failed
  } else {
   Serial.println("Publish failed");
  }
  } void mqttconnect() {   if
(!client.connected()) {
   Serial.print("Reconnecting client to ");
Serial.println(server);     while
(!!!client.connect(clientId, authMethod, token)) {
Serial.print(".");       delay(500);
   }          initManagedDevice();
Serial.println();
```

```
  } } void wificonnect() //function defination for wificonnect
{

      Serial.println();


      Serial.print("Connecting to ");



  WiFi.begin("Wokwi-GUEST", "", 6);//passing the wifi credentials to establish the connection   while
(WiFi.status() != WL_CONNECTED) {
delay(500);

    Serial.print(".");

  }

  Serial.println("");


  Serial.println("WiFi connected");

  Serial.println("IP address: ");

Serial.println(WiFi.localIP());

}  void initManagedDevice() {   if

(client.subscribe(subscribetopic)) {       Serial.println((subscribetopic));


    Serial.println("subscribe to cmd OK");

  } else {

    Serial.println("subscribe to cmd FAILED");

  }

}


void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)

{

Serial.print("callback invoked for topic: ");

Serial.println(subscribetopic);   for (int i =   0; i < payloadLength;
```

```
i++) {
//Serial.print((char)payload[i]);     data3 +=
(char)payload[i];
  }

  Serial.println("data: "+ data3);   if(data3=="lighton")
  {
Serial.println(data3); digitalWrite(LED,HIGH);

  }    else
  {
Serial.println(data3); digitalWrite(LED,LOW);
   } data3="";
     }
```