




SPRINT 2

TEAM ID	PNT2022TMID04076
Project Name	IoT Based smart crop Protection system for agriculture
Maximum mark	20 marks

STEP1: Download and Install NODE JS.



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Downloads


Latest LTS Version: 18.12.1 (includes npm 8.19.2)


Download the Node.js source code or a pre-built installer for your platform, and start developing today.

LTS
Recommended For Most Users

Current
Latest Features


Windows Installer
node-v18.12.1-x64.msi


macOS Installer
node-v18.12.1.pkg


Source Code
node-v18.12.1.tar.gz

Windows Installer (.msi)
Windows Binary (.zip)
macOS Installer (.pkg)
macOS Binary (.tar.gz)
Linux Binaries (x64)

32-bit	64-bit
32-bit	64-bit
64-bit / ARM64	
64-bit	ARM64
64-bit	

STEP2: Setup node.js and configure command prompt for error check.open node-red from the generated link.

```
node-red
4 Nov 18:48:05 - [info] Node-RED version: v3.0.2
4 Nov 18:48:05 - [info] Node.js version: v18.12.0
4 Nov 18:48:05 - [info] Windows_NT 10.0.19044 x64 LE
4 Nov 18:48:26 - [info] Loading palette nodes
4 Nov 18:48:44 - [info] Settings file : C:\Users\ELCOT\.node-red\settings.js
4 Nov 18:48:45 - [info] Context store : 'default' [module=memory]
4 Nov 18:48:45 - [info] User directory : \Users\ELCOT\.node-red
4 Nov 18:48:45 - [warn] Projects disabled : editorTheme.projects.enabled=false
4 Nov 18:48:45 - [info] Flows file : \Users\ELCOT\.node-red\flows.json
4 Nov 18:48:45 - [info] Creating new flow file
4 Nov 18:48:45 - [warn]

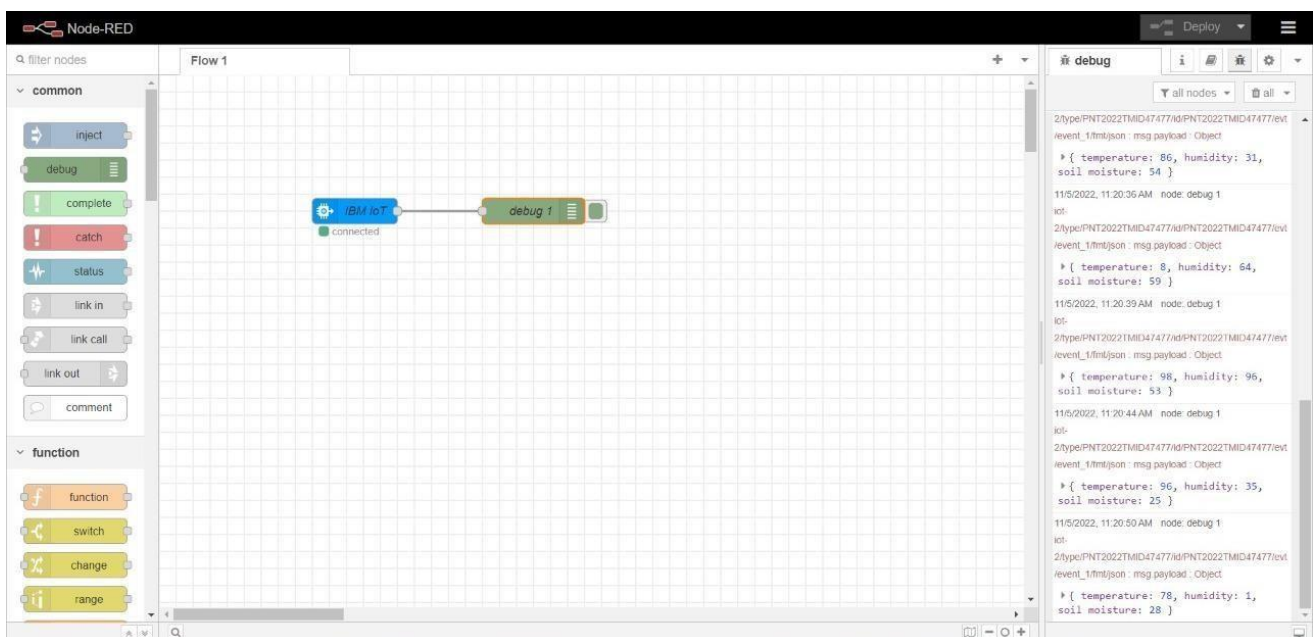
-----
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

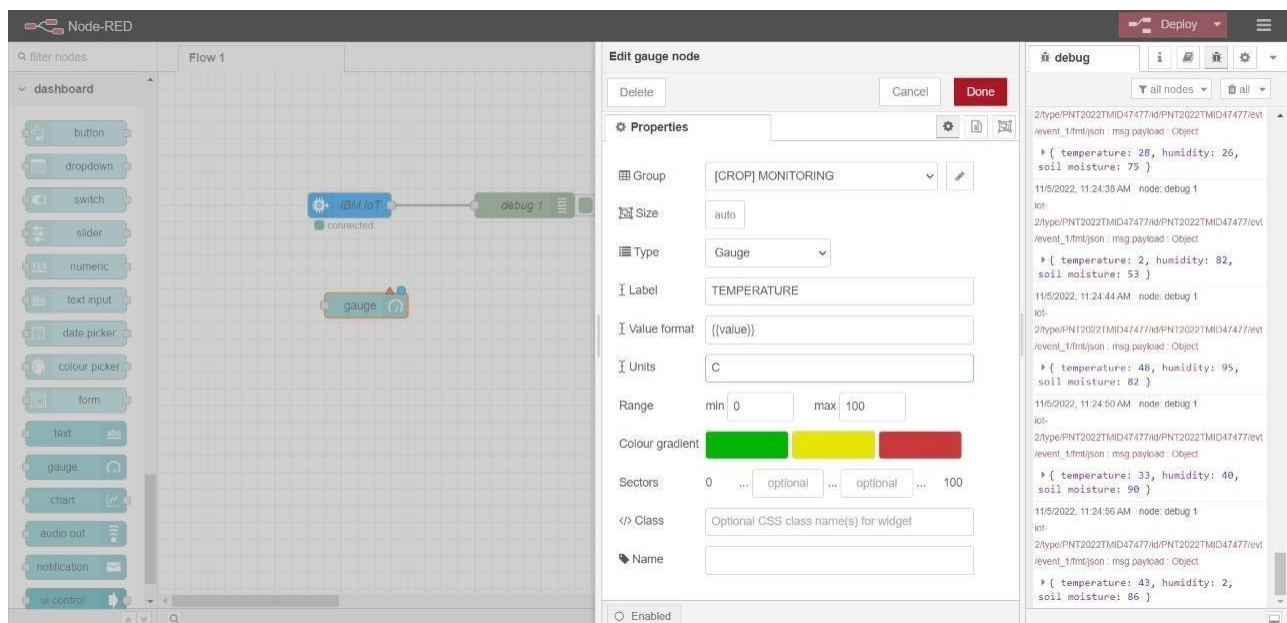
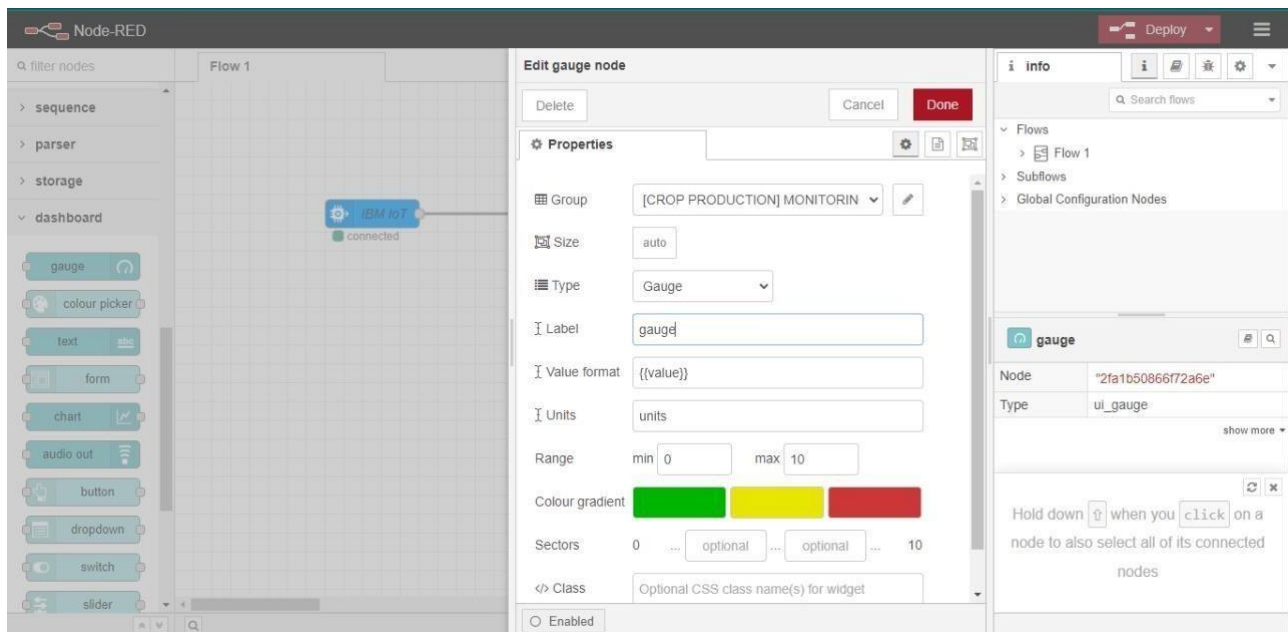
You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
-----

4 Nov 18:48:45 - [warn] Encrypted credentials not found
4 Nov 18:48:45 - [info] Starting flows
4 Nov 18:48:46 - [info] Started flows
4 Nov 18:48:46 - [info] Server now running at http://127.0.0.1:1880/
```

STEP3: Connect IBM IOT in and Debug 1 and Deploy.



STEP4: Edit gauge node (Here the gauge nodes are named as Temperature, Humidity and Soil moisture).



STEP 5: PYTHON CODE:

Python 3.10.7 (tags/v3.10.7:6cc6b13, Sep 5 2022, 14:08:36) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

```
import cv2
```

```
import numpy as np
```

```
import wiot.sdk.device
```

```
import playsound
```

```
import random
```

```
import time
```

```
import datetime
```

```
import ibm_boto3
```

```
from ibm_botocore.client import Config, ClientError
```

```
#CloudantDB
```

```
from cloudant.client import Cloudant
```

```
from cloudant.error import CloudantException
```

```
from cloudant.result import Result, ResultByKey
```

```
from clarifai_grpc.channel.clarifai_channel import ClarifaiChannel
```

```
from clarifai_grpc.grpc.api import service_pb2_grpc
```

```
stub = service_pb2_grpc.V2Stub(clarifaiChannel.get_grpc_channel())
```

```
from clarifai_grpc.grpc.api import service_pb2, resource_pb2
```

```
from clarifai_grpc.grpc.api.status import status_code_pb2
```

```
#This is how you authenticate
```

```
metadata = (('authorization', 'key 0620e202302b4508b90eab7efe7475e4'),)
```

```
COS_ENDPOINT = "https://s3.jp-tok.cloud-object-storage.appdomain.cloud"
```

```
COS_API_KEY_ID = "g5d4qO8EIgv4TWUCJj4hfEzgalqEjrDbE82AJDWIAOHo"
```

```
COS_AUTH_ENDPOINT = "https://iam.cloud.ibm.com/identity/token"
```

```
COS_RESOURCE_CRN =
```

```
"crn:v1:bluemix:public:cloud-object-storage:global:a/c2fa2836eaf3434bbc8b5b58fefff3f0:62e450fd-4c82-4153-ba41-ccb53adb8111::"
```

```
clientdb = cloudant("apikey-W2njldnwtjO16V53LAVUCqPwc2aHTLmlj1xXvtdGKJBn",
```

```
"88cc5f47c1a28afbfb8ad16161583f5a",
```

```
url="https://d6c89f97-cf91-48b7-b14b-c99b2fe27c2f-bluemix.cloudantnosqldb.appdomain.cloud")
```

```
clientdb.connect()
```

```
#Create resource
```

```
cos = ibm_boto3.resource("s3",  
    ibm_api_key_id=COS_API_KEY_ID,  
    ibm_service_instance_id=COS_RESOURCE_CRN,  
    ibm_auth_endpoint=COS_AUTH_ENDPOINT,  
    config=Config(signature_version="oauth"),  
    endpoint_url=COS_ENDPOINT  
)
```

```
def multi_part_upload(bucket_name, item_name, file_path):
```

```
    try:
```

```
        print("Starting file transfer for {0} to bucket: {1}\n".format(item_name, bucket_name))
```

```
        #set 5 MB chunks
```

```
        part_size = 1024 * 1024 * 5
```

```
        #set threshold to 15 MB
```

```
        file_threshold = 1024 * 1024 * 15
```

```
        #set the transfer threshold and chunk size
```

```
        transfer_config = ibm_boto3.s3.transfer.TransferConfig(  
            multipart_threshold=file_threshold,
```

```
            multipart_chunksize=part_size
```

```
        )
```

```
        #the upload_fileobj method will automatically execute a multi-part upload
```

```
        #in 5 MB chunks size
```

```
        with open(file_path, "rb") as file_data:
```

```
            cos.Object(bucket_name, item_name).upload_fileobj(  
                Fileobj=file_data,
```

```
                Config=transfer_config
```

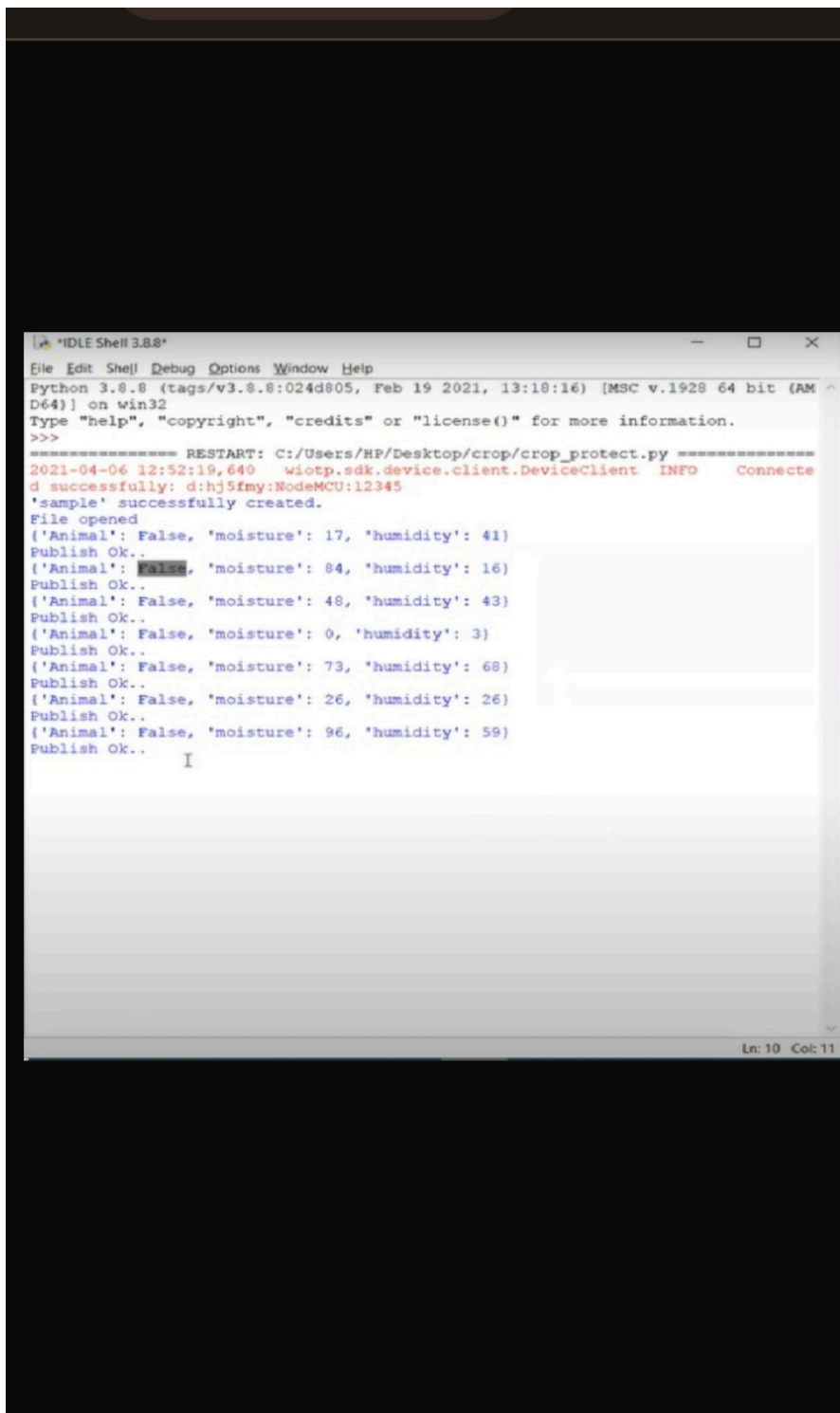
```
            )
```

```
            print("Transfer for {0} Complete!\n".format(item_name))
```

```
    except ClientError as be:
```

```
        print("CLIENT ERROR: {0}\n".format(be))
```

STEP 6: OUTPUT



```
Python 3.8.8 (tags/v3.8.8:024d805, Feb 19 2021, 13:18:16) [MSC v.1928 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/Users/HP/Desktop/crop/crop_protect.py =====
2021-04-06 12:52:19,640 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:hj5fmy:NodeMCU:12345
'sample' successfully created.
File opened
{'Animal': False, 'moisture': 17, 'humidity': 41}
Publish Ok..
{'Animal': False, 'moisture': 84, 'humidity': 16}
Publish Ok..
{'Animal': False, 'moisture': 48, 'humidity': 43}
Publish Ok..
{'Animal': False, 'moisture': 0, 'humidity': 3}
Publish Ok..
{'Animal': False, 'moisture': 73, 'humidity': 68}
Publish Ok..
{'Animal': False, 'moisture': 26, 'humidity': 26}
Publish Ok..
{'Animal': False, 'moisture': 96, 'humidity': 59}
Publish Ok..
I
```