**Name:Rohit Krishnan**                                    **Reg no : 20BPS1045**

# CPS SYSTEM DESIGN - CSE2034

# EXPERIMENT - 3

# MQTT

## Downloading HiveMQ



## Changing Port to 1884

## Publisher 1:-

**pub1.js** `~/`

```javascript
1 var mqtt = require('mqtt');
2 var client = mqtt.connect('mqtt://localhost:1884');
3 client.on('connect', function () {
4       setInterval(function(){
5
6           client.publish('packet', 'VITCC');
7           console.log('Packet Published: VITCC');
8 }),3000;
9 });
```

## Publisher 2:-

**pub2.js** `~/`

```javascript
1 var mqtt = require('mqtt');
2 var client = mqtt.connect('mqtt://localhost:1884');
3
4 client.on('message', function (topic, message) {
5   var packet = message.toString();
6   var encrypted_packet = '';
7   for (var i = 0; i < packet.length; i++) {
8     var c = packet[i];
9     encrypted_packet += String.fromCharCode((c.charCodeAt(0) + 3 - 65) % 26 + 65);
10  }
11  client.publish('encrypted_packet', encrypted_packet);
12  console.log('Encrypted Packet Published: ' + encrypted_packet);
13 });
14
15 client.on('connect', function () {
16  client.subscribe('packet');
17 });
```

## Publisher 3:-

**\*pub3.js** `~/`

```javascript
1 var mqtt = require('mqtt');
2 var client = mqtt.connect('mqtt://localhost:1884');
3
4 client.on('message', function (topic, message) {
5   var packet_length = message.toString().length;
6   client.publish('packet_length', packet_length.toString());
7   console.log('Packet Length Published: ' + packet_length);
8 });
9
10 client.on('connect', function () {
11  client.subscribe('encrypted_packet');
12 });
```

## Subscriber:-

```javascript
1 var mqtt = require('mqtt');
2 var client = mqtt.connect('mqtt://localhost:1884');
3
4 var encrypted_packet = '';
5 var packet_length = 0;
6
7 client.on('message', function (topic, message) {
8   if (topic == 'encrypted_packet') {
9     encrypted_packet = message.toString();
10  } else if (topic == 'packet_length') {
11    packet_length = message.toString();
12  }
13  if (encrypted_packet != '' && packet_length != 0) {
14    var decrypted_packet = '';
15    for (var i = 0; i < encrypted_packet.length; i++) {
16      var c = encrypted_packet[i];
17      decrypted_packet += String.fromCharCode((c.charCodeAt(0) - 3 - 65 + 26) % 26 + 65);
18    }
19    console.log('Encrypted Key is ' + encrypted_packet + ', plain string is ' + decrypted_packet
   + ' and length of the string is ' + packet_length);
20 }
21 });
22
23 client.on('connect', function () {
24 client.subscribe('encrypted_packet');
25 client.subscribe('packet_length');
26 });
27
28
```

## Starting HiveMQ:-

**Publisher 1 output:-**

```
rohit@rohit-VirtualBox:~$ node pub1.js
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
Packet Published: VITCC
```

**Publisher 2 output:-**

```
rohit@rohit-VirtualBox:~$ node pub2.js
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
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Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
Encrypted Packet Published: YLWFF
```

## Publisher 3 output:-

```
rohit@rohit-VirtualBox:~$ node pub3.js
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
Packet Length Published: 5
```

## Subscriber output:-

```
rohit@rohit-VirtualBox:~$ node sub.js
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Pucblisted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5
```
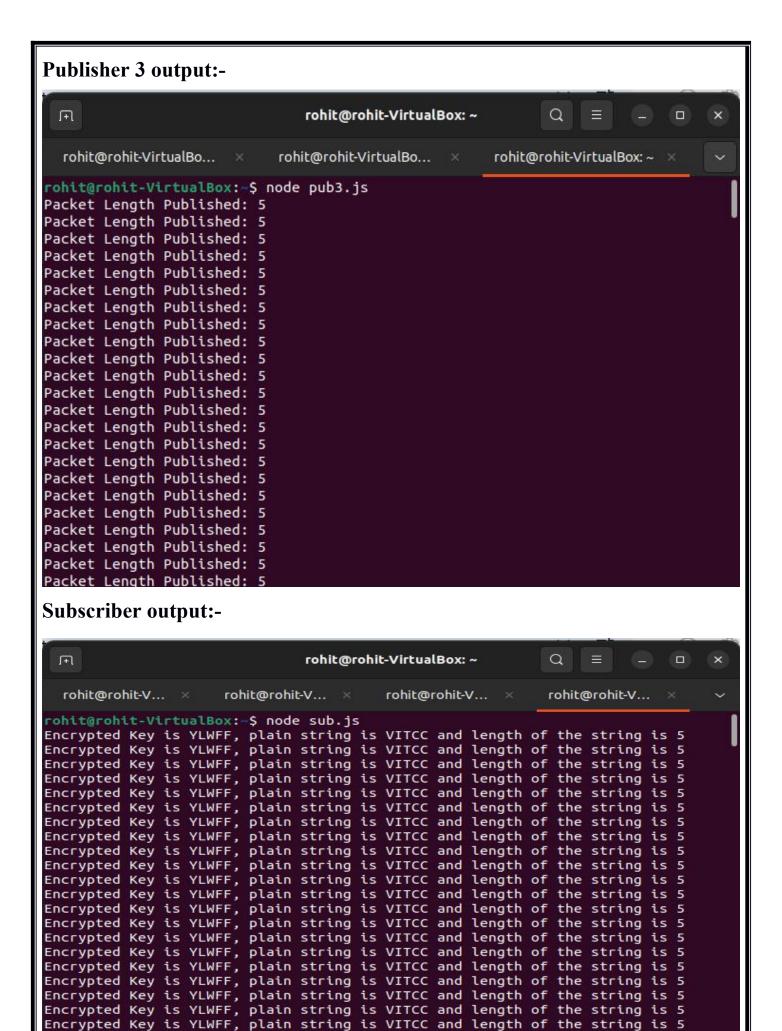
# HiveMQ Dashboard