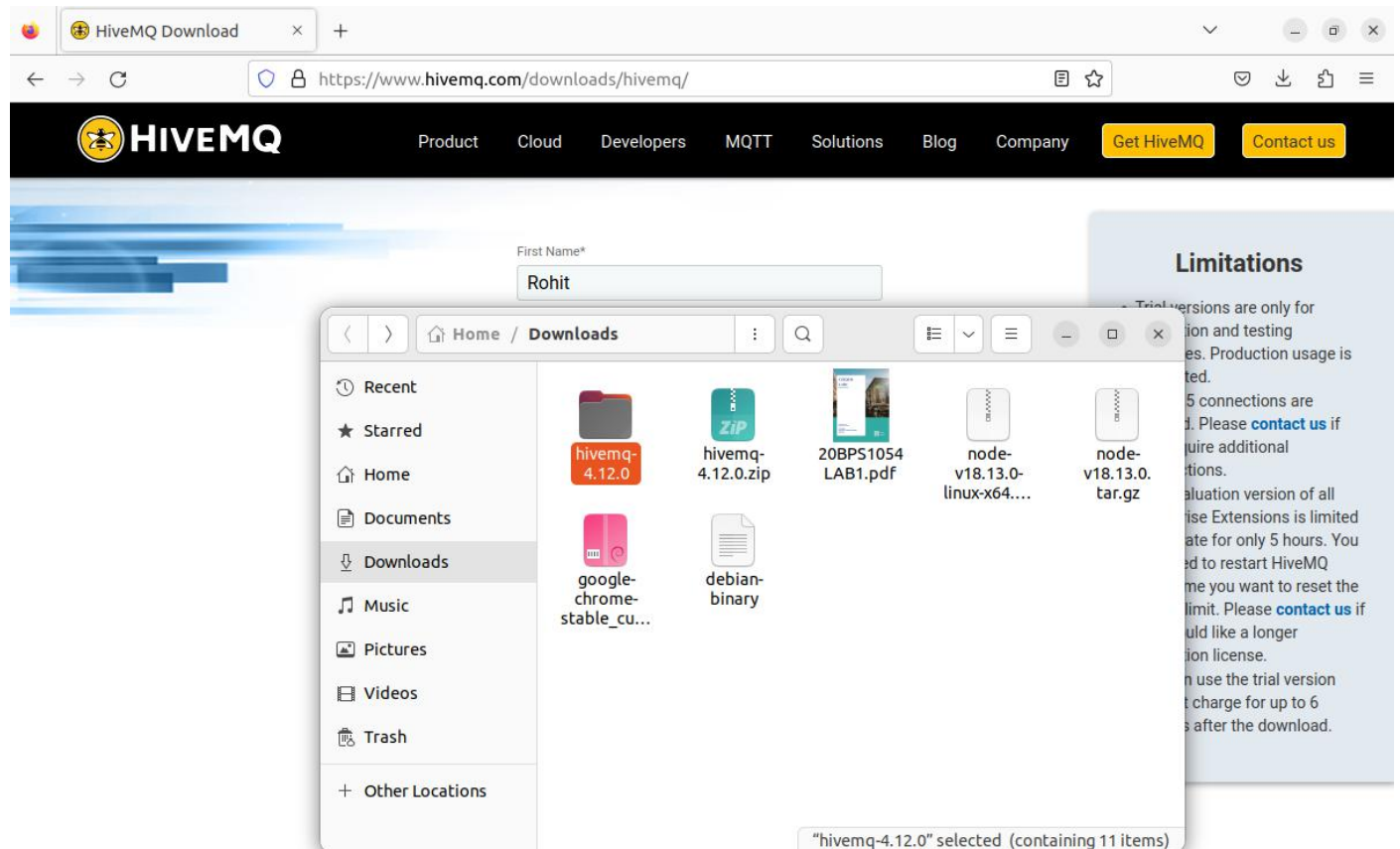


CPS SYSTEM DESIGN - CSE2034EXPERIMENT - 3MQTT

Downloading HiveMQ



Changing Port to 1884



Publisher 1:-

```
Open  + pub1.js ~/ Save [Menu] [Zoom] [Close]
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:-

```
Open  + pub2.js ~/ Save [Menu] [Zoom] [Close]
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:-

```
Open  + *pub3.js ~/ Save [Menu] [Zoom] [Close]
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:-

```
sub.js
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:-

```
rohit@rohit-VirtualBox: ~/Downloads/hivemq-4.12.0/bin
rohit@rohit-VirtualBox:~/Downloads/hivemq-4.12.0/bin$ ./run.sh
-----
HiveMQ
-----
HiveMQ Start Script for Linux/Unix v1.13
-----
HIVEMQ_HOME: /home/rohit/Downloads/hivemq-4.12.0

JAVA_OPTS: -Djava.net.preferIPv4Stack=true -noverify --add-opens java.base/java.lang=ALL-UNNAMED --add-opens java.base/java.nio=ALL-UNNAMED --add-opens java.base/sun.nio.ch=ALL-UNNAMED --add-opens jdk.management/com.sun.management.internal=ALL-UNNAMED --add-exports java.base/jdk.internal.misc=ALL-UNNAMED -Djava.security.egd=file:/dev/./urandom -Dcom.sun.management.jmxremote -Dcom.sun.management.jmxremote.port=9010 -Dcom.sun.management.jmxremote.local.only=false -Dcom.sun.management.jmxremote.authenticate=false -Dcom.sun.management.jmxremote.ssl=false -Duser.language=en -Duser.region=US -XX:+CrashOnOutOfMemoryError -XX:+HeapDumpOnOutOfMemoryError

JAVA_VERSION: 11
-----
2023-02-11 08:27:44,194 INFO - Starting HiveMQ Enterprise Server
2023-02-11 08:27:44,209 INFO - HiveMQ version: 4.12.0
2023-02-11 08:27:44,209 INFO - HiveMQ home directory: /home/rohit/Downloads/hivemq-4.12.0
2023-02-11 08:27:44,219 INFO - Log Configuration was overridden by /home/rohit/Downloads/hivemq-4.12.0/conf/logback.xml
2023-02-11 08:27:45,392 INFO - Successfully loaded configuration from '/home/rohit/Downloads/hivemq-4.12.0/conf/config.xml'.
2023-02-11 08:27:45,852 INFO - This node's ID is tW0Bo
2023-02-11 08:27:45,853 INFO - Clustering is disabled
2023-02-11 08:27:57,861 INFO - No valid license file found. Using trial license, restricted to 25 connections.
2023-02-11 08:27:59,454 INFO - This node uses '2' CPU cores.
2023-02-11 08:27:59,463 INFO - Starting HiveMQ extension system.
2023-02-11 08:27:59,667 INFO - Starting extension with id "hivemq-allow-all-extension" at /home/rohit/Downloads/hivemq-4.12.0/exten
```


Publisher 1 output:-

[illegible]

Publisher 2 output:-

[illegible]

Publisher 3 output:-

[illegible]

Subscriber output:-

A screenshot of a terminal window titled "rohit@rohit-VirtualBox: ~". The terminal shows a command prompt where the user has entered "node sub.js". Below the command, there are 20 identical lines of output. Each line reads: "Encrypted Key is YLWFF, plain string is VITCC and length of the string is 5". The terminal interface includes standard window controls at the top and tab management icons at the bottom left.

HiveMQ Dashboard

