# EE 629 – IoT using Raspberry Pi

Lesson 5 – Exercises - **Done**

Docker

Docker is a tool designed to make it easier to create, deploy, and run applications by using containers. Containers allow a developer to package up an application with all of the parts it needs, such as libraries and other dependencies, and ship it all out as one package. For developers, it means that they can focus on writing code without worrying about the system that it will ultimately be running on. For operations staff, Docker gives flexibility and potentially reduces the number of systems needed because of its small footprint and lower overhead.

Publish-Subscribe Communication
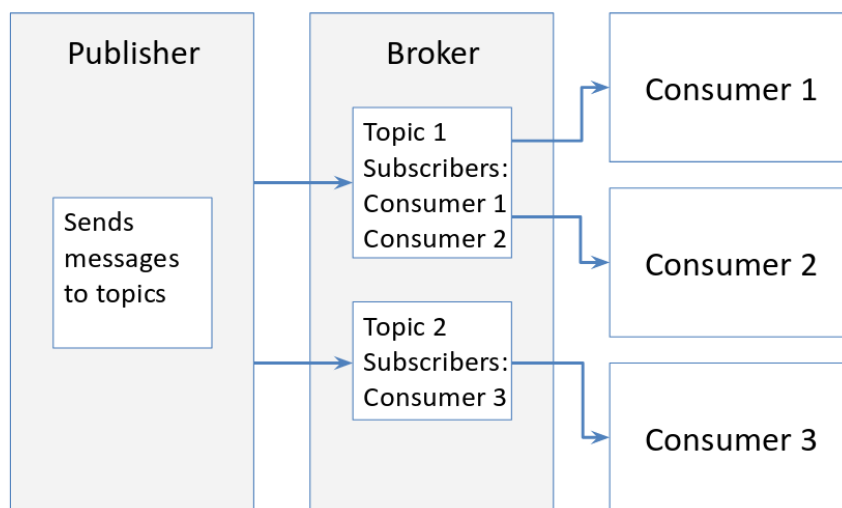
Docker Installation

Installed the docker on a Raspberry Pi and added pi to the Docker Group as a non-root user and logged out. Ran docker images designed to work on ARM and ran new image from Dockerfile

Crossbar:

Crossbar.io is an open source networking platform for distributed and microservice applications. It implements the open Web Application Messaging Protocol (WAMP), is feature rich, scalable, robust and secure. Let Crossbar.io take care of the hard parts of messaging so you can focus on your app's features.

WAMP
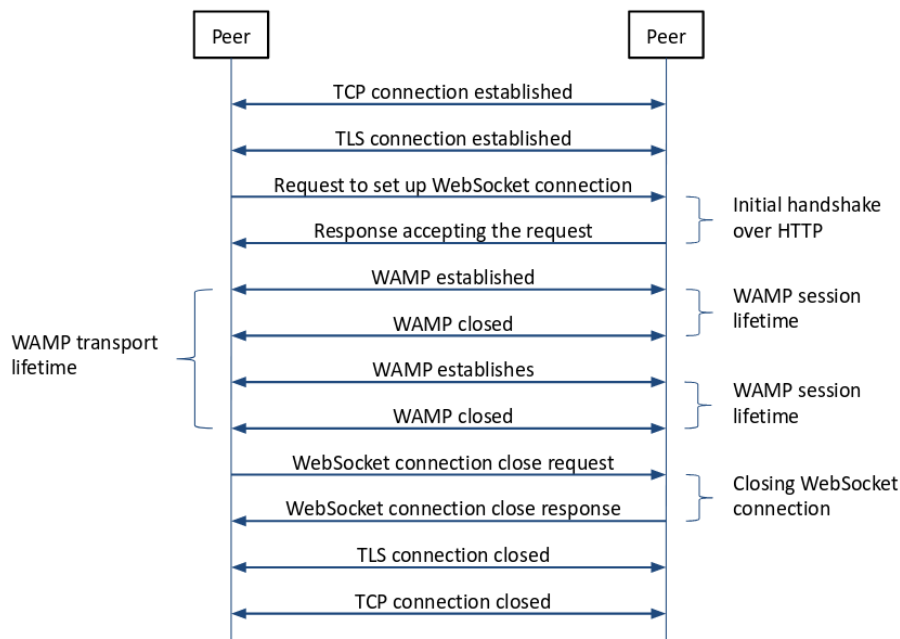
Lab A: Crossbar.io

Ran Crossbar.io router on Terminal 1

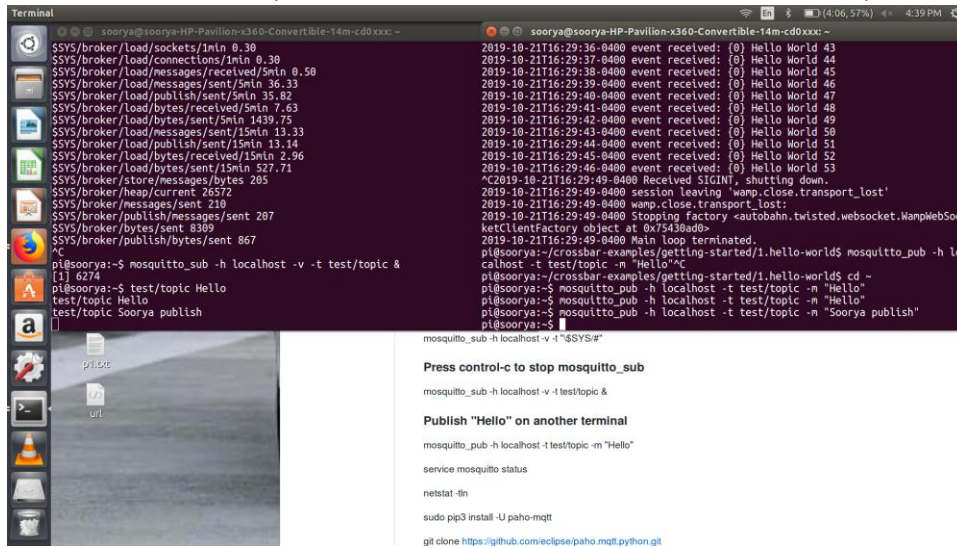Ran publish-client on Terminal 2

Ran subscribe-client on Terminal 3

Mosquitto and Paho:

The Eclipse Paho project provides open-source client implementations of MQTT and MQTT-SN messaging protocols aimed at new, existing, and emerging applications for the Internet of Things (IoT)

Lab B: Mosquitto and Paho

Installed and ran Mosquitto and Paho to subscribe on one terminal and publish on another terminal