Keysight Hacking Platform Getting Started

Blake Vermeer

March 22, 2017

Date Performed: March 21, 2017
Company: Keysight Technologies

1 Overview

The Keysight Hacking Platform is designed to have a development workflow similar to how firmware is developed in most Keysight products while yet at the same time being flexible enough that students can develop their own software / hardware for a Hackathon.

The Keysight Hacking Platform consists of:

- Raspberry Pi 3 with 2.8" capacitive touch screen shield
- Custom Yocto Linux image pre-loaded on the Raspberry Pi 3
- Fedora Linux Virtual Machine image with Qt Creator and the Yocto SDK pre-installed and configured with Qt Creator

The general workflow for creating applications using the KHP is the application is created in the Qt Creator program that is pre-installed in the virtual machine image. The application is then cross-compiled by Qt Creator using the Yocto SDK and is then sent over WiFi to the Raspberry Pi where the application is run and can be debugged remotely using Qt Creator.

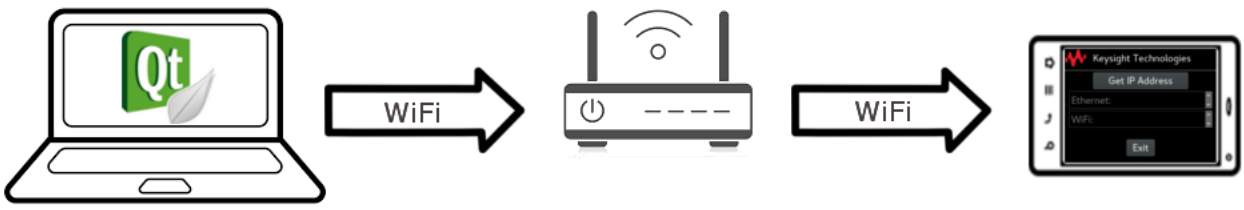

Figure 1: Qt App Deployment Workflow

2 Installing VirtualBox

3 Import the Virtual Machine

After install VirtualBox, the next step is to import the virtual machine image into VirtualBox. After starting up VirtualBox, choose "Import Appliance..." from the file menu.

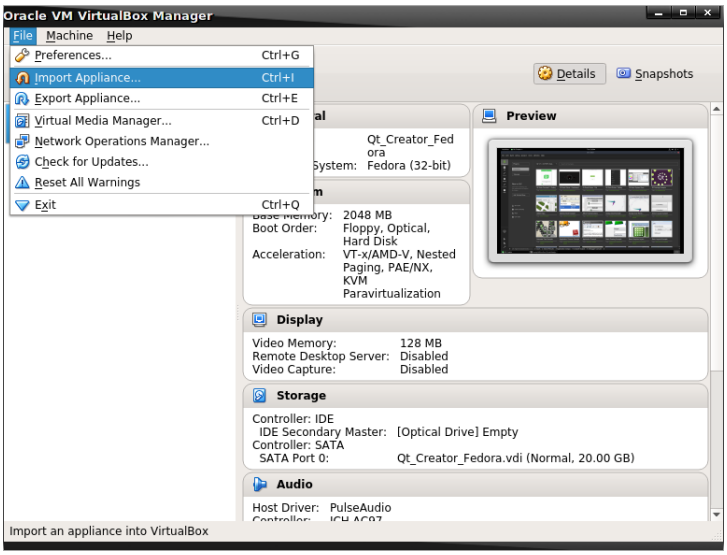

Figure 2: Import Virtual Machine

Navigate to the location of the virtual machine image (Qt_Creator_Fedora.ova) and then click next. In the next screen that appears (Appliance settings) make sure to click the checkbox to reinitialize the MAC addresses of all the network cards.

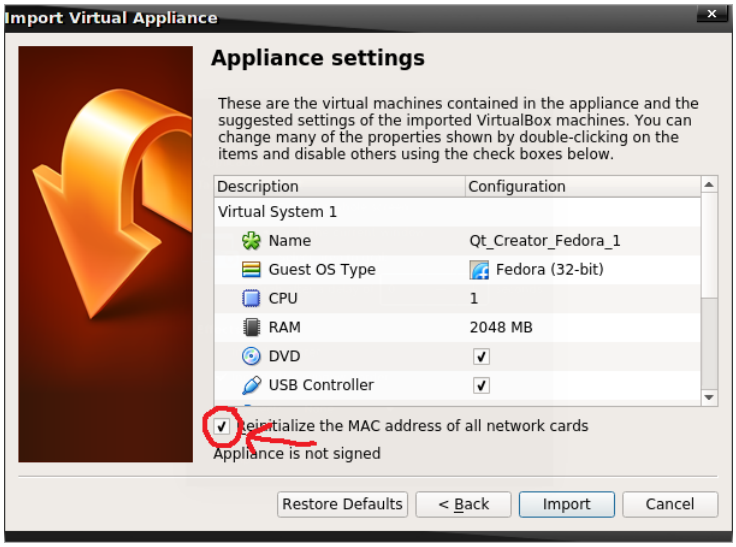

Figure 3: Import Virtual Machine Settings

After importing the virtual machine image, the main VirtualBox screen should appear similar to Figure 4. To start the virtual machine, highlight the "Qt_Creator_Fedora" virtual machine from the list and then click the start button.

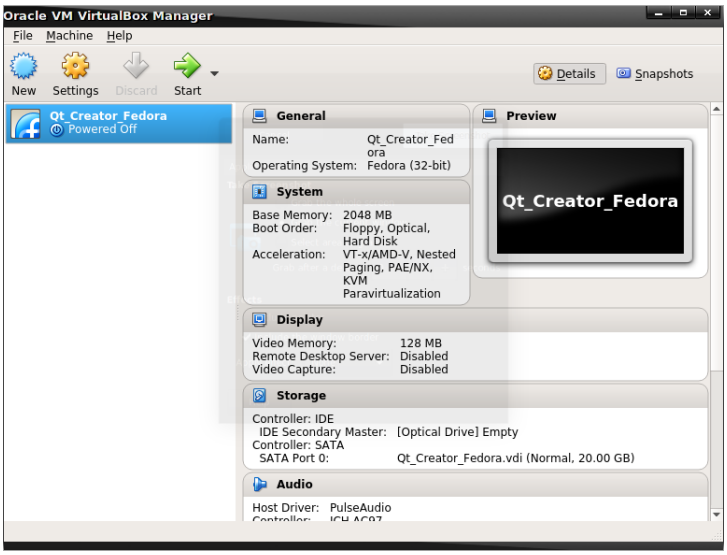

Figure 4: VirtualBox Main Window

4 Launching the Virtual Machine

5 Start Qt Creator and Connect to the Raspberry Pi