APPLICATION NOTE

Raspberry Pi4 Hawkeye Image – Installation Procedure

Required minimal version for server: Hawkeye 6.0.x (May 2025)

Introduction

This doc explains how to install image on a raspberry pi 4. Raspberry Pi 4 is low-cost hardware that can be very convenient to deploy at remote locations. Keysight provides an image for software that will allow to run its agent. Purchasing recommended model of Raspberry Pi with ad hoc casing, SD card, power supply etc. is not responsibility of Keysight – it is highly recommended to follow the recommendations.

With the Raspberry Pi 4, you can obtain low-cost hardware; configure it and the agent on it; then ship it to another location.

The installation will require licensing available on Hawkeye server to be enabled from the Hawkeye software controller and minimum version of Hawkeye server 6.0.x (released in May 2025).

Hardware requirements

The recommended hardware to purchase and assemble is the following:

Raspberry Pi 4 Model B (4GB model)

SD card with 32G memory. Recommended models are:

- Recommended -> SanDisk Extreme (32 GB)
- Samsung EVO Plus (32GB)

You may need USB adapter for SD card for flashing the image to your microSD card if your laptop doesn't have a SD card slot available. Some recommended models are available on raspberry pi foundation site.

Other Raspberry Pi models won't be supported by the image. In particular, the image will not support Raspberry pi 4 2G model.

It is strongly recommended to get official case and power supply found in Raspberry Pi software foundation.

Link to the foundation for recommendations on hardware:

https://www.raspberrypi.org/products/raspberry-pi-4-model-b/

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Burning the Image

Raspberry Pi foundation has image burner available at the following link:

https://www.raspberrypi.org/software/ it is

available for windows, mac, and Linux

1. Download the "Raspberry Pi Imager" from raspberrypi.org/software for your operating system
2. Download the image from Keysight web site

   https://ixiapublic.s3.amazonaws.com/hawkeye/6.0.4/G40-pi4_image.img.gz
3. Run the imager
4. "Choose OS" -> select last entry "Use Custom"

   It brings up a file selection window for select the image.

   "Choose Storage" -> The SD drive should be displayed as a 32 GB Mass Storage Device.

   NOTE: If the size displayed is smaller, this is likely because SD card has some preconfigured partition.
5. Click on "WRITE" – the writing process takes a few minutes.

Configuring Pi4

1. Once the SD card is burnt with the Pi4 image, plug the SD card back into the Raspberry Pi4 and boot the device. Default IP configuration is DHCP on LAN interface

   Find the IP address of the Raspberry Pi:

   - If your computer is on the same LAN as the Raspberry Pi you can use a scan tool to find its ip. Use port 10117 TCP port to scan and find IP address.
   - Alternatively, connect the Raspberry Pi to a screen with mouse and keyboard; open a console window and find the device's IP address. Then, on your computer, open a browser tab and go to that IP.

   Default username / password: root/keysight

2. Login or ssh to the Pi4 device with the credentials (root/keysight) and run 'probeConfigure' command. You will be prompted for probe name and registration server, use Hawkeye Server IP or hostname for registration server.
3. Pi4 is preset for DHCP, it will get the IP address. For static IP assignments, edit the following file

   /etc/dhcpcd.conf

   ```
   sudo nano /etc/dhcpcd.conf

   interface NETWORK
   static ip_address=STATIC_IP/24
   static routers=ROUTER_IP
   static domain_name_servers=DNS_IP
   ```

   Replace the emboldened names as follows:

   • NETWORK – your network connection type: eth0 (Ethernet) or wlan0 (wireless).

   • STATIC_IP – the static IP address you want to set for the Raspberry Pi.

   • ROUTER_IP – the gateway IP address for your router on the local network.

   • DNS_IP – the DNS IP address (typically the same as your router's gateway address).

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Here is an example configuration to set the static IP to 192.168.1.120 with a wireless connection to a router at 192.168.1.254:

```
interface wlan0
static ip_address=192.168.1.120/24
static routers=192.168.1.254
static domain_name_servers=192.168.1.254
```

Configuring WLAN Connection

1. Log into the Pi4 as root and issue this command “wifiConnect”. This will quickly scan the available access points.
2. Please select an access point SSID
3. Please select an access point BSSID
4. This will generate a configuration asking to enter the Password/Pre- Shared Key
5. Then it will connect to the access point and get the IP address.
6. A question will be prompted to you asking if you would like to make this a default connection (y/n)
7. Selecting Yes will make your Wi-Fi connection persistent and retain the configuration

Hawkeye support scope

Hawkeye support for pi 4 software image allows control and update of the software on the pi. Keysight team is verifying functionality and performance levels of pi4 on LAN and standard Wi-Fi connectivity with using:

- Sandisk Ultra (32 GB minimum required)
- Official Raspberry pi 4 case
  - https://www.raspberrypi.org/products/raspberry-pi-4-case/
- Official power supply
  - https://www.raspberrypi.org/products/type-c-power-supply/

It is recommended to use same hardware and not do any software modification (add or update software packages, add third party software) to maintain maximum compatibility with Keysight performance and functionality. Different casing might affect Wi-Fi performance levels as the Wi-Fi chipset is on the internal board.

No support will be provided on Hardware and any modification on standard software from Keysight will be full end user responsibility, Keysight can not guarantee full functionality and performance level in case of software modifications and will only recommend reimaging to standard Keysight pi 4 image in case of problems reported after such modifications.

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