

# 1 Abstract

Without an internet connection it is impossible to install new packages on raspberry pis. This guide walks through the setup of an SSH tunnel so that packages can be installed using `apt-get`.

## 2 Requirements

- **Raspberry Pi** – A Raspberry Pi without an internet connection that needs to be able to `apt-get` packages.
- **Computer** – A computer with an internet connection, such as a DICE computer, which is able to SSH into the **Raspberry Pi**.

## 3 Setup

The following steps only need to be done once. Select a `<port-number>` between 1024 and 49151 and use it for all setup steps.

1. Create and edit `/etc/apt/apt.conf` on the **Raspberry Pi** to match the following:

```
1 Acquire::http::Proxy "http://localhost:<port-number>";  
2 Acquire::https::Proxy "https://localhost:<port-number>";
```

apt.conf

2. Edit `/etc/apt/sources.list` on the **Raspberry Pi** to match the following:

```
1 deb http://archive.raspbian.org/raspbian buster main contrib non-free rpi  
2 #Uncomment line below then 'apt-get update' to enable 'apt-get source'  
3 #deb-src http://archive.raspbian.org/raspbian buster main contrib non-free rpi
```

sources.list

3. Edit `/etc/apt/sources.list.d/raspi.list` on the **Raspberry Pi** to match the following:

```
1 deb http://archive.raspberrypi.org/raspbian/ buster main  
2 #Uncomment line below then 'apt-get update' to enable 'apt-get source'  
3 #deb-src http://archive.raspberrypi.org/raspbian/ buster main
```

raspi.list

The **Raspberry Pi** is now set up.

## 4 Usage

To set up an SSH tunnel, SSH into the **Raspberry Pi** from the **Computer** using the same `<port-number>` used during setup:

```
ssh -R <port-number>:archive.raspbian.org:80 <username>@<raspberrypi>
```

The **Raspberry Pi** has access to the Raspbian package repository while you keep the SSH connection open.

Some commands you may want to run:

- `sudo apt-get update` – Updates the package list.
- `sudo apt-get upgrade` – Upgrades installed packages.
- `sudo apt-get upgrade -fix-missing` – Upgrades installed packages and fixes broken packages. Needs to be run if `apt-get` reports broken packages.
- `sudo apt-get search <name>` – Lists packages matching `<name>`.
- `sudo apt-get install <name>` – Install package called `<name>`.