Base Setup

OS installation

Download PI OS image and follow the image installation steps.

Enable ssh

In order to be able to remote ssh into the server edit the sshd configuration file. And set the following parameters:

```
# nano /etc/ssh/sshd_config
--------------------------

# Authentication:

LoginGraceTime 2m
AllowUsers root pi
PermitRootLogin yes
StrictModes yes
#MaxAuthTries 6
#MaxSessions 10

---------------------------
# systemctl restart ssh
```

Networking

/etc/hostname

```
# nano /etc/hostname
--------------------
domoticz
```

/etc/hosts

```
# nano /etc/hosts
---------------------
127.0.0.1   localhost
::1     localhost ip6-localhost ip6-loopback
ff02::1     ip6-allnodes
```

```
ff02::2     ip6-allrouters

127.0.1.1   domoticz
```

/etc/network/interfaces

```
# nano /etc/network/interfaces
-----------------------------
auto lo eth0
iface lo inet loopback

#iface eth0 inet manual
iface eth0 inet static
address 192.168.178.xx
netmask 255.255.255.0
network 192.168.178.0
broadcast 192.168.178.255
gateway 192.168.178.1
```

resolv.conf

```
# nano /etc/resolv.conf
----------------------
nameserver 192.168.178.1
nameserver fdaa:66:67:a::1
```

Migrate Root Filesystem to F2FS

Raspberry SD card

Adjust fstab

```
# nano /etc/fstab
-----------------
proc                  /proc           proc    defaults          0       0
PARTUUID=5d3fca68-01  /boot/firmware  vfat    defaults          0       2
PARTUUID=5d3fca68-02  /               f2fs    defaults,noatime,nodiratime  0
1
tmpfs                 /var/log        tmpfs
defaults,noatime,nosuid,mode=0755,size=80m    0 0
tmpfs                 /var/tmp        tmpfs
defaults,noatime,nosuid,size=30m    0 0
```

Disable Wifi + Bluetooth

```
# nano /boot/config.txt
-----------------------
[all]
dtoverlay=disable-wifi
dtoverlay=disable-bt
```

Disable Services

Let's disable services that are automatically started but we do not need:

```
systemctl stop NetworkManager
systemctl disable NetworkManager
systemctl mask NetworkManager

systemctl stop serial-getty@ttyAMA0
systemctl disable serial-getty@ttyAMA0
systemctl mask serial-getty@ttyAMA0

systemctl mask avahi-daemon
systemctl mask bluetooth.service
systemctl mask alsa-state.service
systemctl mask triggerhappy
systemctl mask wpa_supplicant.service
systemctl mask hciuart.service
systemctl mask rpi-display-backlight
systemctl mask ModemManager
```

Set the Welcome Text

```
# nano /etc/motd
----------------

_______                        _   _
|  _  \                      | | (_)
| | | |___  _ __ ___   ___ | |_ _  ___ ____
| | | / _ \| '_ ` _ \ / _ \| __| |/ __|_  /
| |/ / (_) | | | | | | (_) | |_| | (__ / /
|___/ \___/|_| |_| |_|\___/ \__|_|\___/___|
```

Locale

For setting up locales see section Locale. On our Home server the configuration should be as follows:

```
# locale -a
---------------
C
C.utf8
en_GB.utf8
en_US.utf8
nl_NL.utf8
POSIX

# cat /etc/default/locale
-------------------------

#  File generated by update-locale
LANG=en_US.UTF-8
LANGUAGE="en_US:en"
LC_TIME="nl_NL.UTF-8"
LC_NUMERIC="nl_NL.UTF-8"
LC_MONETARY="nl_NL.UTF-8"
LC_PAPER="nl_NL.UTF-8"
```

Apt-Get Update

When getting the following message: *“key is stored in legacy trusted.gpg keyring (/etc/apt/trusted.gpg), see the DEPRECATION section in apt-key(8) for details”*. It is a warning message. A warning does not stop the procedure. You can continue upgrading your system even if you see this warning message during an update.If you don’t like seeing the warning message, you can take some manual steps to get rid of it. Import the key:

```
# apt-key list
--------------
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d
instead (see apt-key(8)).
/etc/apt/trusted.gpg
--------------------
pub   rsa2048 2012-04-01 [SC]
      A0DA 38D0 D76E 8B5D 6388  7281 9165 938D 90FD DD2E
uid           [ unknown] Mike Thompson (Raspberry Pi Debian armhf ARMv6+VFP)
<mpthompson@gmail.com>
sub   rsa2048 2012-04-01 [E]

/etc/apt/trusted.gpg.d/raspberrypi-archive-stable.gpg
-----------------------------------------------------
pub   rsa2048 2012-06-17 [SC]
      CF8A 1AF5 02A2 AA2D 763B  AE7E 82B1 2992 7FA3 303E
uid           [ unknown] Raspberry Pi Archive Signing Key
sub   rsa2048 2012-06-17 [E]
```

The offending key is the first one (Mike Thompson). You should the last 8 characters (excluding the space) under the line after pub. So from the line “A0DA 38D0 D76E 8B5D 6388 7281 9165 938D 90FD

DD2E", I'll take the last 8 characters "90FD DD2E", remove the space and then use it to import the GPG key in its dedicated file under the /etc/apt/trusted.gpg.d directory:

sudo apt-key export 90FDDD2E | sudo gpg –dearmour -o /etc/apt/trusted.gpg.d/mikethompson.gpg

I created a new file mikethompson.gpg here The filename does not matter but it's good for identification. If the command runs successfully, you won't see any message. You can verify that by checking if the newly created gpg file exists or not.

Power Saving

- Disable the blinking cursor:Cursor blink off
- Configure PowerTop: Powertop
- Tune ASPM: ASPM on Linux

Install frequently used packages

```
# apt-get install sudo
# apt-get install iputils-ping
# apt-get install nano
# apt-get install less
```