



Because this box has been stripped down for easy handling, you should know some essential facts:

- See also : IPTV-Multicast-OMM15\_Manual.1.4.pdf
- Factory defaults: It must be connected to the Internet to get the basic OS installed online
  - o After the installing of the basic OS it needs to get a script from a connected Linux Device running to prepare it for the Digital Signage / IPTV Multicast streaming's
  - o The STB displays Time and date information on the main screen so it needs a NTP connection either getting these from the router or from the internet.
  - o So it is almost helpful to have a tiny router installed which serves the boxes with small internet connection and also handles their DHCP.-IP addresses IPv4

We now like to give you a short introduction to setup a DHCP-Router for these boxes: Using a raspberry PI3/4 and its original Raspberry Pi OS: <https://www.raspberrypi.com/software/operating-systems/> and by acting under this tutorial: [https://linuxhint.com/raspberry\\_pi\\_wired\\_router/](https://linuxhint.com/raspberry_pi_wired_router/)

We assume that you are familiar with setting up a RPI: Download, use RPIImager and flash it. Than stay at the  $\mu$ SDCard by your windows/Linux-PC and add following to the USB-Boot-Folder:

### Things You Need:

In order to configure your Raspberry Pi as a wired router, you need the following things:

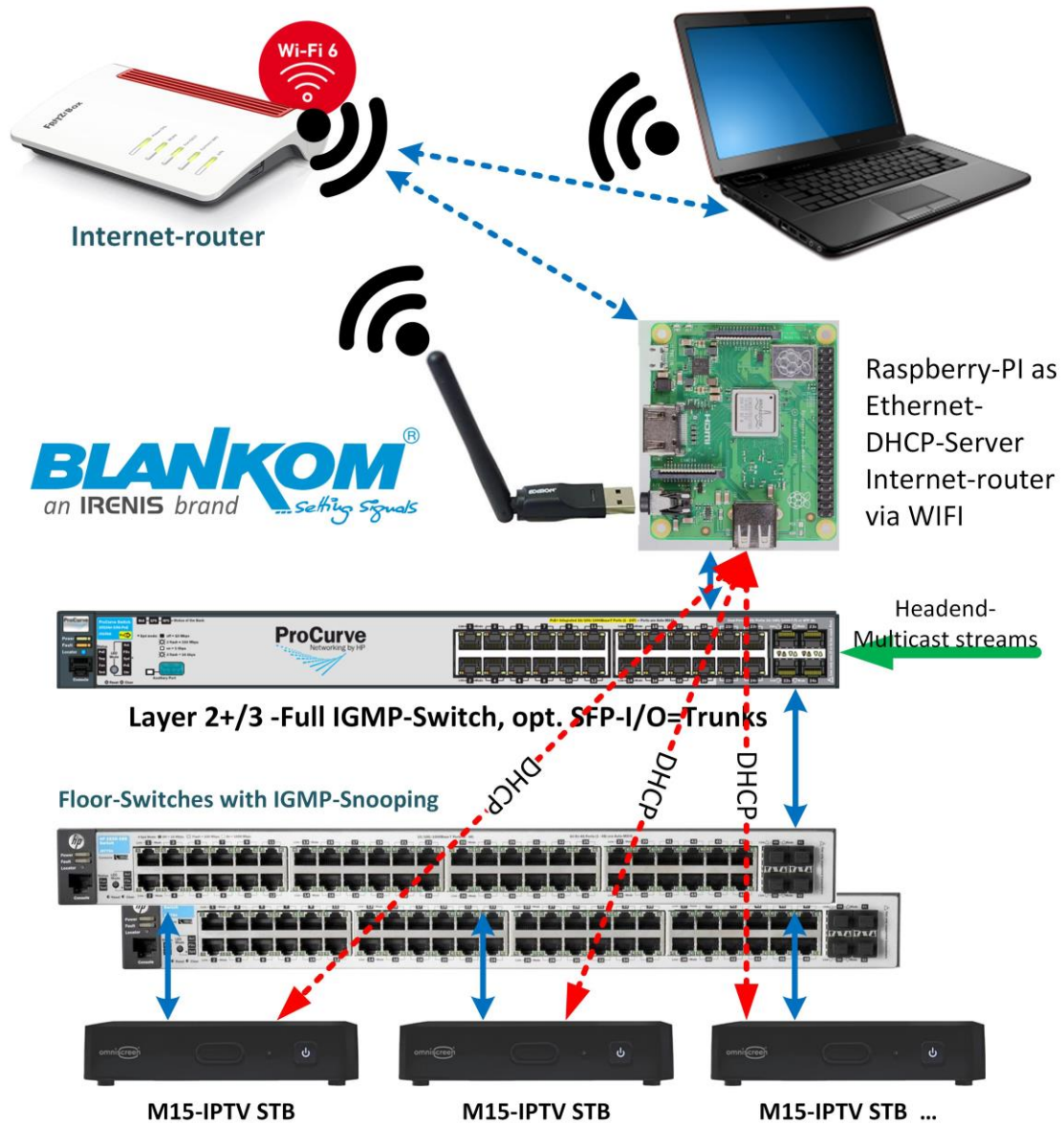
- 1) A Raspberry Pi single board computer
- 2) A Raspberry Pi power adapter or a 2.1A USB power bank
- 3) A SD card reader for flashing Raspbian OS onto the microSD card.
- 4) A microSD card
- 5) A network switch (10/100/1000 or 100/1000 Autosensing)
- 6) Ethernet cables
- 7) A Wi-Fi network to connect the Raspberry Pi to
- 8) A computer/laptop for configuring the Raspberry Pi

In this example case, we have an external WIFI-USB-Stick connected to the PI and a WIFI-in Reach.

We are using for this tutorial an older RPI2-Model.

The Network-switches can be set to the static IP address ranges and been managed by a connected PC in the same static or dynamic range at the switches. The Raspi can be handled by a laptop in the same WIFI - See picture:

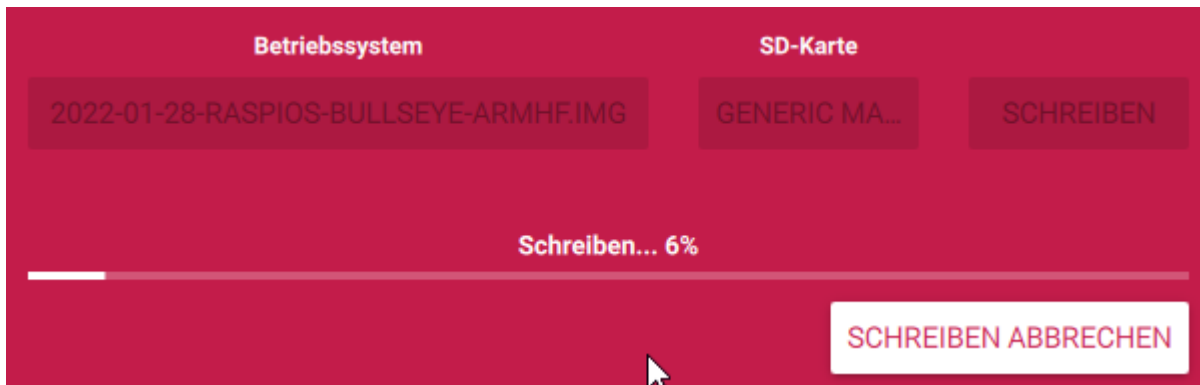
Quickstart M15 OmniscreenTV IPTV STB -> Setup a DHCP-Router powered by **BLANKOM**



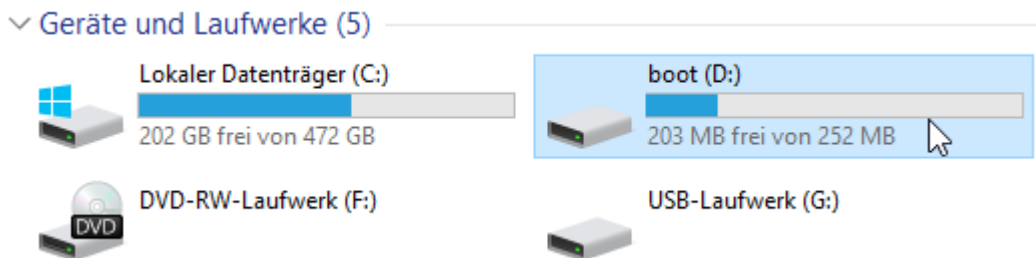
Flashing the OS:



Flashing:

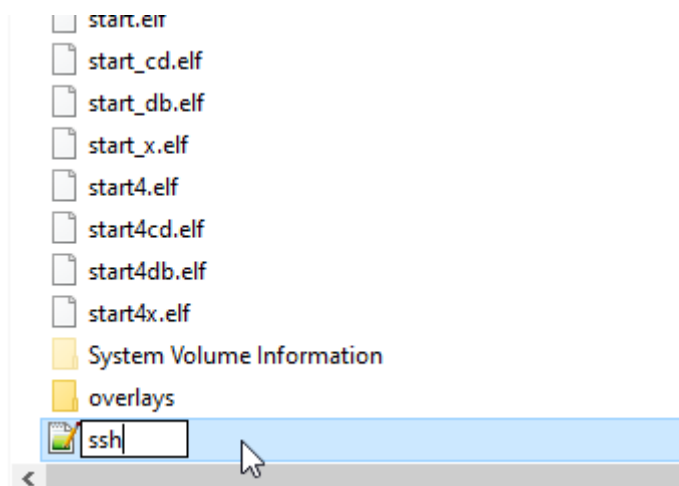


Re-Connect the USB-penkey: Now, you should see a **boot** drive on your computer. Navigate into it.



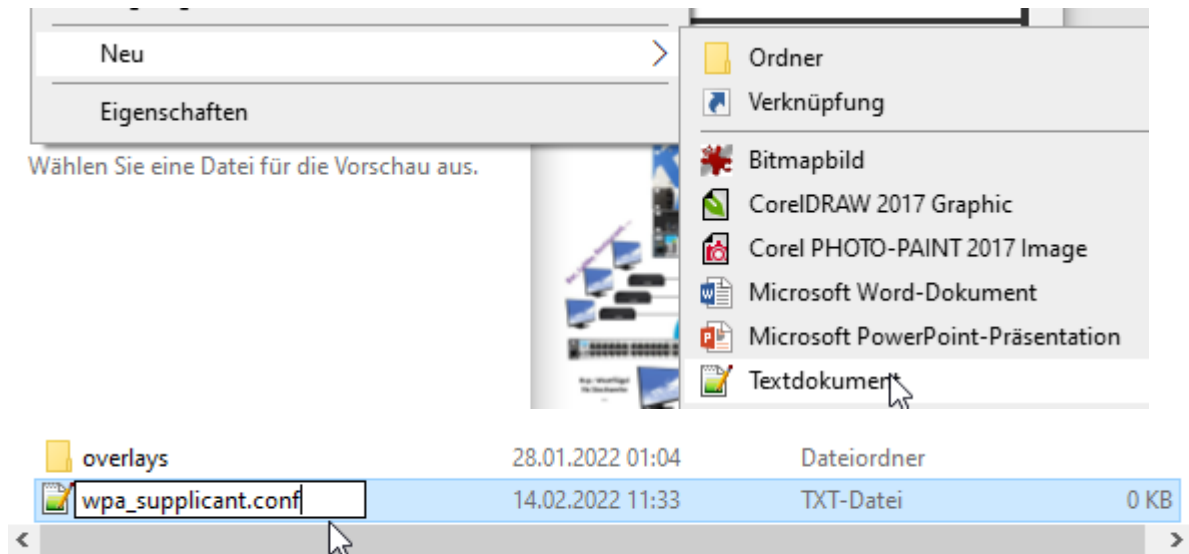
Do not format the 2<sup>nd</sup> linux partition (not visible under Windows)!!! Just go to the boot-partition and insert 2 files (use a notepad++ linux capable text editor – not a windows based please !:

Create an empty file named ssh



this enables the RPI accessible by Telnet/SSH after boot.

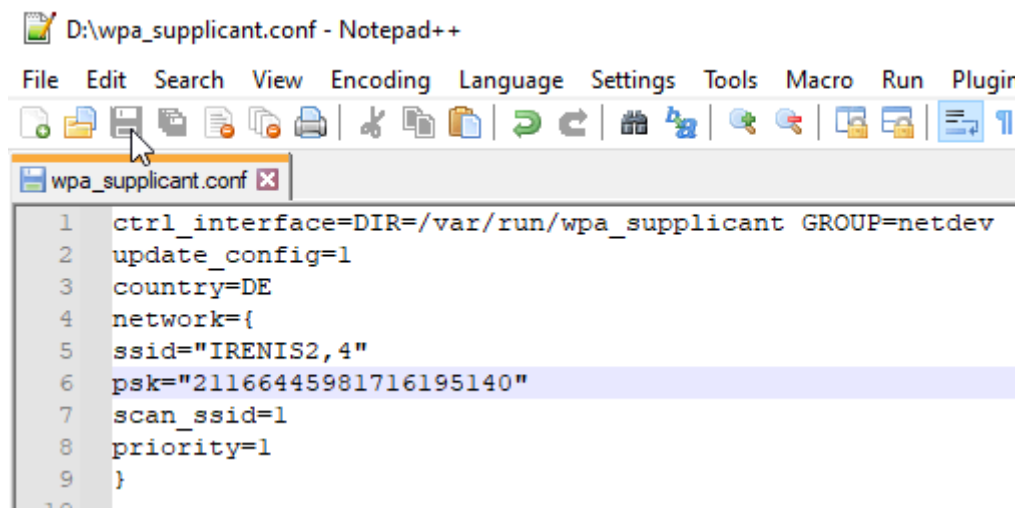
Create a new file **wpa\_supplicant.conf** and type in the following lines to it:



```
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1
country=US
network={
  ssid="YOUR_WIFI_SSID"
  psk="YOUR_WIFI_PASSWORD"
  scan_ssid=1
  priority=1
}
```

Change US to your land, DE in our case and here we use the I-Netrouter WIFI access:

WIFI-PW= 21166445981716195140 , SSID = IRENIS2,4



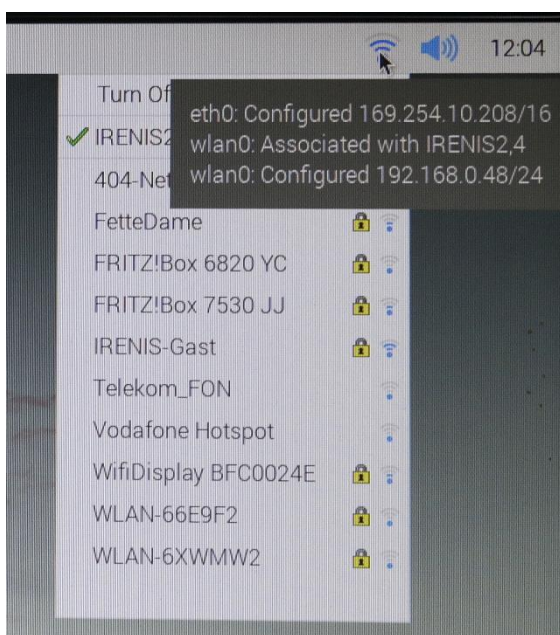
This file will be copied to the /etc/wpa... folder during/after boot.

Now it's time to eject the  $\mu$ SDcard and insert it into the RPI. Powering it up and connect the Switch with Ethernet before.

Let it boot, check connection and change the locales to your country and language in the next steps.



Select the WIFI access and let run the updates and check IP:



As you can see, the Ethernet port is not configured yet.

If you are running the RPI as headless device w/o a connected HDMI-Monitor, Check your router what IP address has been delivered to your RPI...

Terminal access by SSH with Putty or Kitty:

```
pi@raspberrypi: ~  
login as: pi  
pi@192.168.0.48's password:  
Linux raspberrypi 5.10.92-v7+ #1514 SMP Mon Jan 17 17:36:39 GMT 2022 armv7l  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
Last login: Fri Jan 28 02:31:02 2022  
pi@raspberrypi:~ $
```

Now, open the **cmdline.txt** file and add **ipv6.disable=1** at the end of the line to disable IPv6:

```
cd /boot
```

```
sudo nano cmdline.txt:
```

```
pi@raspberrypi:/boot $ sudo nano cmdline.txt  
pi@raspberrypi:/boot $ cat cmdline.txt  
console=serial0,115200 console=tty1 root=PARTUUID=b3435338-02 rootfstype=ext4 fs  
ck.repair=yes rootwait quiet splash plymouth.ignore-serial-consoles ipv6.disable  
=1  
pi@raspberrypi:/boot $
```

This may be done before the SDcard is inserted into the RPI.

## Configuring the Network:

Now, create a network configuration file for **wlan0** network interface as follows:

```
$ sudo nano /etc/network/interfaces.d/wlan0
```

```
pi@raspberrypi:~ $ sudo nano /etc/network/interfaces.d/wlan0
```

Now, type in the following lines and save the configuration file by pressing <Ctrl> + X followed by Y and <Enter>.

```
allow-hotplug wlan0  
iface wlan0 inet dhcp  
wpa-conf /etc/wpa_supplicant/wpa_supplicant.conf
```

```

GNU nano 3.2                               /etc/network/interfaces.d/wlan0           Modified
allow-hotplug wlan0
iface wlan0 inet dhcp
    wpa-conf /etc/wpa_supplicant/wpa_supplicant.conf
-
^G Get Help      ^O Write Out    ^W Where Is    ^K Cut Text    ^J Justify    ^C Cur Pos    M-U Undo
^X Exit          ^R Read File    ^\ Replace     ^U Uncut Text  ^T To Spell   ^_ Go To Line  M-E Redo
    
```

Now, create a network configuration file for **eth0** network interface as follows:

```
$ sudo nano /etc/network/interfaces.d/eth0
```

```
pi@raspberrypi:~ $ sudo nano /etc/network/interfaces.d/eth0
```

Now, type in the following lines and save the configuration file by pressing **<Ctrl> + X** followed by **Y** and **<Enter>**.

```

auto eth0
iface eth0 inet static
address 192.168.1.1
netmask 255.255.255.0
    
```

Select the range you want to go with the STB's.  
We keep it at 192.168.1.0/24...

**Now, disable dhcpd service with the following command:**

```
$ sudo systemctl disable dhcpd
```

```
pi@raspberrypi:~ $ sudo systemctl disable dhcpd
```

```

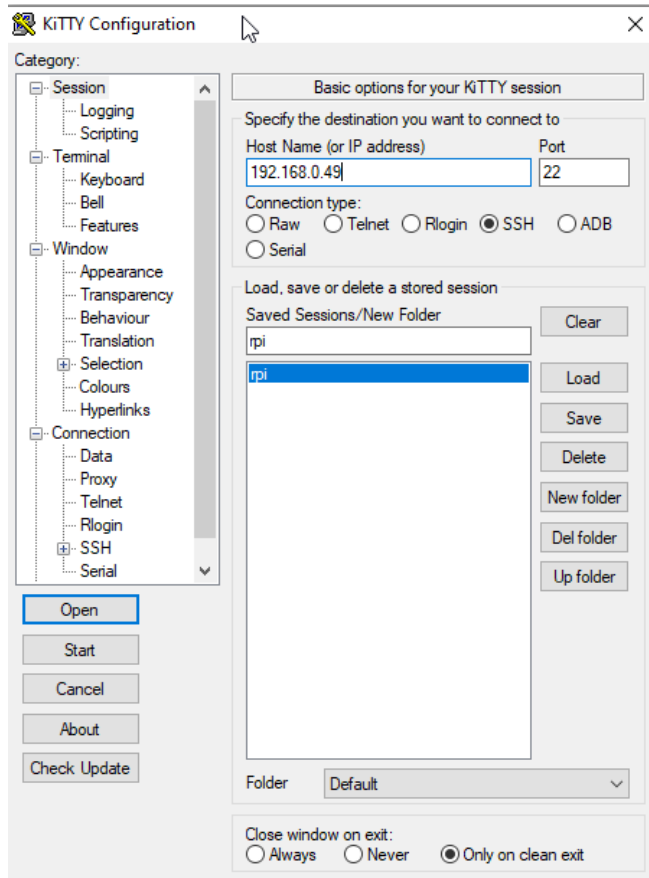
pi@raspberrypi:/boot $ sudo systemctl disable dhcpd
Synchronizing state of dhcpd.service with SysV service script with /lib/systemd
/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install disable dhcpd
Removed /etc/systemd/system/multi-user.target.wants/dhcpd.service.
pi@raspberrypi:/boot $ █
    
```

Now, restart your Raspberry Pi for the changes to take effect. SUDO REBOOT ...  
you know that

Once your Raspberry Pi starts, check the network configuration of **wlan0** network interface as follows:

```
$ ip addr show wlan0
```

**wlan0** should get an IP address via DHCP But it can be a different than before



Also, check the network configuration of **eth0** network interface as follows:

```
$ ip addr show eth0
```

A static IP address should be assigned to the **eth0** network interface.

```
pi@raspberrypi:~$ ip addr show eth0
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether b8:27:eb:58:2b:59 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.1/24 brd 192.168.1.255 scope global eth0
        valid_lft forever preferred_lft forever
pi@raspberrypi:~$
```

**wlan0** and **eth0**, both should be configured correctly.



# Configuring DHCP Server:

Now, update the APT package repository cache with the following command:

```
$ sudo apt update
```

```
pi@raspberrypi:~ $ sudo apt update
Hit:1 http://raspbian.raspberrypi.org/raspbian bullseye InRelease
Hit:2 http://archive.raspberrypi.org/debian bullseye InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
pi@raspberrypi:~ $ █
```

Install ISC DHCP server with the following command:

```
$ sudo apt install isc-dhcp-server
```

```
pi@raspberrypi:~ $ sudo apt install isc-dhcp-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libfuse2
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  libirs-export161 libiscfg-export163 policycoreutils selinux-utils
Suggested packages:
  isc-dhcp-server-ldap
The following NEW packages will be installed:
  isc-dhcp-server libirs-export161 libiscfg-export163 policycoreutils
  selinux-utils
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 1,592 kB of archives.
After this operation, 6,258 kB of additional disk space will be used.
Do you want to continue? [Y/n] █
```

Of course Y

```
• isc-dhcp-server.service - LSB: DHCP server
  Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
  Active: failed (Result: exit-code) since Sat 2020-02-22 10:30:47 GMT; 60ms ago
  Docs: man:systemd-sysv-generator(8)
  Process: 961 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=1/FAILURE)

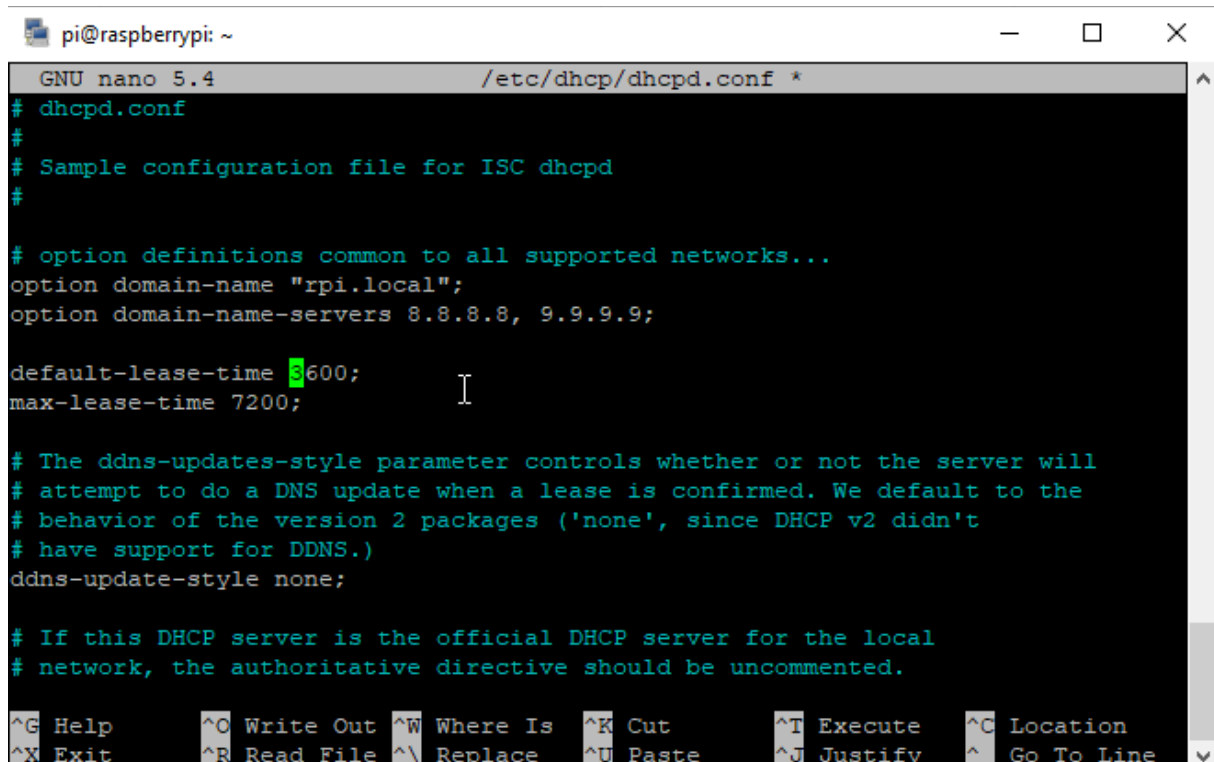
Feb 22 10:30:45 raspberrypi dhcpd[973]: bugs on either our web page at www.isc.org or in the README
file
Feb 22 10:30:45 raspberrypi dhcpd[973]: before submitting a bug. These pages explain the proper
Feb 22 10:30:45 raspberrypi dhcpd[973]: process and the information we find helpful for debugging.
Feb 22 10:30:45 raspberrypi dhcpd[973]:
Feb 22 10:30:45 raspberrypi dhcpd[973]: exiting.
Feb 22 10:30:47 raspberrypi isc-dhcp-server[961]: Starting ISC DHCPv4 server: dhcpdcheck syslog for
diagnostics. ... failed!
Feb 22 10:30:47 raspberrypi isc-dhcp-server[961]: failed!
Feb 22 10:30:47 raspberrypi systemd[1]: isc-dhcp-server.service: Control process exited, code=exited
, status=1/FAILURE
Feb 22 10:30:47 raspberrypi systemd[1]: isc-dhcp-server.service: Failed with result 'exit-code'.
Feb 22 10:30:47 raspberrypi systemd[1]: Failed to start LSB: DHCP server.
Processing triggers for man-db (2.8.5-2) ...
Processing triggers for libc-bin (2.28-10+rp1) ...
Processing triggers for systemd (241-7~deb10u2+rp1) ...
pi@raspberrypi:~$
```

Now, open the **dhcpd.conf** file as follows:

```
$ sudo nano /etc/dhcp/dhcpd.conf
```

```
pi@raspberrypi:~$ sudo nano /etc/dhcp/dhcpd.conf
```

Set the **domain-name** and **domain-name-servers** as follows.



```
pi@raspberrypi: ~
GNU nano 5.4 /etc/dhcp/dhcpd.conf *
# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#
# option definitions common to all supported networks...
option domain-name "rpi.local";
option domain-name-servers 8.8.8.8, 9.9.9.9;

default-lease-time 600;
max-lease-time 7200;

# The ddns-updates-style parameter controls whether or not the server will
# attempt to do a DNS update when a lease is confirmed. We default to the
# behavior of the version 2 packages ('none', since DHCP v2 didn't
# have support for DDNS.)
ddns-update-style none;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.

^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

Or any other DNS in your region which is reliable...

We increase the lease time to 90 hours instead of 10 (600 sec).

Scroll down a little bit and uncomment **authoritative;** line:

```
# If this DHCP server
# network, the autho
#authoritative;
# If this server
```

Than add these lines somewhere in the file:

```
subnet 192.168.1.0 netmask 255.255.255.0 {
range 192.168.1.50 192.168.1.240;
option routers 192.168.1.1;
option subnet-mask 255.255.255.0;
}
```

```
# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

subnet 192.168.1.0 netmask 255.255.255.0 {
range 192.168.1.50 192.168.1.240;
option routers 192.168.1.1;
option subnet-mask 255.255.255.0;
}

^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

CTRL X Save Y and exit it.

Now, open the **/etc/default/isc-dhcp-server** configuration file as follows:

```
$ sudo nano /etc/default/isc-dhcp-server
```

```
pi@raspberrypi:~ $ sudo nano /etc/default/isc-dhcp-server
```

Add, **eth0** to the **INTERFACESv4** variable and save the file.

```
pi@raspberrypi: ~
GNU nano 5.4 /etc/default/isc-dhcp-server *
# Defaults for isc-dhcp-server (sourced by /etc/init.d/isc-dhcp-server)

# Path to dhcpd's config file (default: /etc/dhcp/dhcpd.conf).
#DHCPDv4_CONF=/etc/dhcp/dhcpd.conf
#DHCPDv6_CONF=/etc/dhcp/dhcpd6.conf

# Path to dhcpd's PID file (default: /var/run/dhcpd.pid).
#DHCPDv4_PID=/var/run/dhcpd.pid
#DHCPDv6_PID=/var/run/dhcpd6.pid

# Additional options to start dhcpd with.
# Don't use options -cf or -pf here; use DHCPD_CONF/ DHCPD_PID instead
#OPTIONS=""

# On what interfaces should the DHCP server (dhcpd) serve DHCP requests?
# Separate multiple interfaces with spaces, e.g. "eth0 eth1".
INTERFACESv4="eth0"
INTERFACESv6=""

^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

Now, reboot the Raspberry Pi.

```
$ sudo reboot
```

```
pi@raspberrypi:~ $ sudo reboot
```

Once your Raspberry Pi starts, the isc-dhcp-server service should be active (running).

```
$ sudo systemctl status isc-dhcp-server
```

```
pi@raspberrypi:~$ sudo systemctl status isc-dhcp-server
● isc-dhcp-server.service - LSB: DHCP server
   Loaded: loaded (/etc/init.d/isc-dhcp-server; generated)
   Active: active (running) since Sat 2020-02-22 10:45:14 GMT; 14s ago
     Docs: man:systemd-sysv-generator(8)
  Process: 439 ExecStart=/etc/init.d/isc-dhcp-server start (code=exited, status=0/SUCCESS)
    Tasks: 1 (limit: 2200)
   Memory: 4.9M
    CGroup: /system.slice/isc-dhcp-server.service
            └─459 /usr/sbin/dhcpd -4 -q -cf /etc/dhcp/dhcpd.conf eth0

Feb 22 10:45:11 raspberrypi systemd[1]: Starting LSB: DHCP server...
Feb 22 10:45:11 raspberrypi isc-dhcp-server[439]: Launching IPv4 server only.
Feb 22 10:45:11 raspberrypi dhcpd[459]: Wrote 0 leases to leases file.
Feb 22 10:45:12 raspberrypi dhcpd[459]: Server starting service.
Feb 22 10:45:14 raspberrypi isc-dhcp-server[439]: Starting ISC DHCPv4 server: dhcpd.
Feb 22 10:45:14 raspberrypi systemd[1]: Started LSB: DHCP server.
pi@raspberrypi:~$
```

## Configuring the Firewall and Enable Packet Forwarding:

Now, install firewalld (daemon) as follows:

```
$ sudo apt install firewalld
```

```
pi@raspberrypi:~$ sudo apt install firewalld
```

Press Y and then press <Enter> to confirm the installation.

```
pi@raspberrypi:~$ sudo apt install firewalld
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libfuse2
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  gir1.2-nm-1.0 ipset iptables libip6tc2 libipset13 libnetfilter-contrack3
  libnfnetlink0 libnm0 python3-decorator python3-firewall python3-nftables
  python3-selinux python3-slip python3-slip-dbus
The following NEW packages will be installed:
  firewalld gir1.2-nm-1.0 ipset iptables libip6tc2 libipset13
  libnetfilter-contrack3 libnfnetlink0 libnm0 python3-decorator
  python3-firewall python3-nftables python3-selinux python3-slip
  python3-slip-dbus
0 upgraded, 15 newly installed, 0 to remove and 0 not upgraded.
Need to get 1,663 kB of archives.
After this operation, 8,164 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

firewalld should now be installed.

```
s (arptables) in auto mode
update-alternatives: using /usr/sbin/ebtables-nft to provide /usr/sbin/ebtables
(ebtables) in auto mode
Setting up python3-slip-dbus (0.6.5-2) ...
Setting up python3-firewall (0.9.3-2) ...
Setting up firewalld (0.9.3-2) ...
update-alternatives: using /usr/share/polkit-1/actions/org.fedoraproject.Firewal
lDl.server.policy.choice to provide /usr/share/polkit-1/actions/org.fedoraprojec
t.FirewallDl.policy (org.fedoraproject.FirewallDl.policy) in auto mode
Created symlink /etc/systemd/system/dbus-org.fedoraproject.FirewallDl.service ->
/lib/systemd/system/firewalld.service.
Created symlink /etc/systemd/system/multi-user.target.wants/firewalld.service ->
/lib/systemd/system/firewalld.service.
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for dbus (1.12.20-2) ...
Processing triggers for libc-bin (2.31-13+rpt2+rpil+deb11u2) ...
pi@raspberrypi:~ $
```

The **firewalld** service should be **active (running)** by default. Enter for checking:

```
$ sudo systemctl status firewalld
```

```
pi@raspberrypi:~ $ sudo systemctl status firewalld
● firewalld.service - firewalld - dynamic firewall daemon
   Loaded: loaded (/lib/systemd/system/firewalld.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2020-02-22 10:47:04 GMT; 16s ago
     Docs: man:firewalld(1)
   Main PID: 946 (firewalld)
    Tasks: 2 (limit: 2200)
   Memory: 17.5M
   CGroup: /system.slice/firewalld.service
           └─946 /usr/bin/python3 /usr/sbin/firewalld --nofork --nopid

Feb 22 10:47:02 raspberrypi systemd[1]: Starting firewalld - dynamic firewall daemon...
Feb 22 10:47:04 raspberrypi systemd[1]: Started firewalld - dynamic firewall daemon.
pi@raspberrypi:~ $
```

Now, allow DHCP traffic through the firewall with the following command:

```
$ sudo firewall-cmd --add-service=dhcp --permanent
```

```
pi@raspberrypi:~ $ sudo firewall-cmd --add-service=dhcp --permanent
success
pi@raspberrypi:~ $
```

Allow IP packet forwarding with the following command:

```
$ sudo firewall-cmd --add-masquerade --permanent
```

```
pi@raspberrypi:~ $ sudo firewall-cmd --add-masquerade --permanent
success
pi@raspberrypi:~ $
```

Finally, reboot your Raspberry Pi.

```
$ sudo reboot
```

```
pi@raspberrypi:~ $ sudo reboot
```

You are ready to go and connect a STB to your Switch. Attention: The STBs have 100BaseT ports only!

```

pi@raspberrypi:~$ tail -f /var/log/syslog
Feb 14 13:06:57 raspberrypi systemd[1]: systemd-timesynod.service: Succeeded.
Feb 14 13:06:57 raspberrypi systemd[1]: Stopped Network Time Synchronization.
Feb 14 13:06:57 raspberrypi systemd[1]: Starting Network Time Synchronization...
Feb 14 13:06:57 raspberrypi systemd[1]: Started Network Time Synchronization.
Feb 14 13:06:57 raspberrypi systemd-timesynod[1047]: Initial synchronization to
time server 192.168.0.1:123 (192.168.0.1).
Feb 14 13:06:57 raspberrypi dhclient[495]: bound to 192.168.0.49 -- renewal in 3
9283 seconds.
Feb 14 13:06:57 raspberrypi sh[495]: bound to 192.168.0.49 -- renewal in 39283 s
econds.
Feb 14 13:06:57 raspberrypi sh[1070]: wlan0=wlan0
Feb 14 13:07:05 raspberrypi pulseaudio[695]: GetManagedObjects() failed: org.fre
edesktop.DBus.Error.NoReply: Did not receive a reply. Possible causes include: t
he remote application did not send a reply, the message bus security policy bloc
ked the reply, the reply timeout expired, or the network connection was broken.
Feb 14 13:07:09 raspberrypi systemd[1]: Started Session 4 of user pi.
Feb 14 13:07:28 raspberrypi dhcpcd[560]: DHCPDISCOVER from 68:72:dc:00:43:01 via eth0
Feb 14 13:07:29 raspberrypi dhcpcd[560]: DHCPOFFER on 192.168.1.50 to 68:72:dc:00:43:01 (Combitel) via eth0
Feb 14 13:07:29 raspberrypi dhcpcd[560]: DHCPREQUEST for 192.168.1.50 (192.168.1.1) from 68:72:dc:00:43:01 (Combitel) via eth0
Feb 14 13:07:29 raspberrypi dhcpcd[560]: DHCPACK on 192.168.1.50 to 68:72:dc:00:43:01 (Combitel) via eth0

```

With

```
tail -f /var/log/syslog
```

you'll see the DHCP actions with every connected box.

Now we can prepare the Raspi for the FTP- channellist/group upload to the boxes and the initial IPTV setup of sending files, patching the Omniscreen default Firmware to the IPTV version:

The Raspi needs to have installed:

- bash OK already installed in this Raspian
- curl OK in this Raspian
- expect **No, so need to be installed**
- ssh OK in this Raspian

```

pi@raspberrypi:~$ sudo apt install expect
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libfuse2
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  tcl-expect tcl8.6
Suggested packages:
  tk8.6 tcl-tclreadline
The following NEW packages will be installed:
  expect tcl-expect tcl8.6
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 410 kB of archives.
After this operation, 699 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://raspbian.raspberrypi.org/raspbian bullseye/main armhf tcl8.6 armhf 8.6.11+dfsg-1 [123 kB]
Get:2 http://ftp.gwdg.de/pub/linux/debian/raspbian/raspbian bullseye/main armhf tcl-expect armhf 5.45.4-2 [121 kB]
Get:3 http://ftp.gwdg.de/pub/linux/debian/raspbian/raspbian bullseye/main armhf expect armhf 5.45.4-2 [166 kB]
Fetched 410 kB in 1s (420 kB/s)
Selecting previously unselected package tcl8.6.
(Reading database ... 101751 files and directories currently installed.)
Preparing to unpack .../tcl8.6_8.6.11+dfsg-1_armhf.deb ...
Unpacking tcl8.6 (8.6.11+dfsg-1) ...
Selecting previously unselected package tcl-expect:armhf.
Preparing to unpack .../tcl-expect_5.45.4-2_armhf.deb ...
Unpacking tcl-expect:armhf (5.45.4-2) ...
Selecting previously unselected package expect.
Preparing to unpack .../expect_5.45.4-2_armhf.deb ...
Unpacking expect (5.45.4-2) ...
Setting up tcl8.6 (8.6.11+dfsg-1) ...
Setting up tcl-expect:armhf (5.45.4-2) ...
Setting up expect (5.45.4-2) ...
Processing triggers for man-db (2.9.4-2) ...
Processing triggers for libc-bin (2.31-13+rpt2+rp11+deb11u2) ...
pi@raspberrypi:~$

```

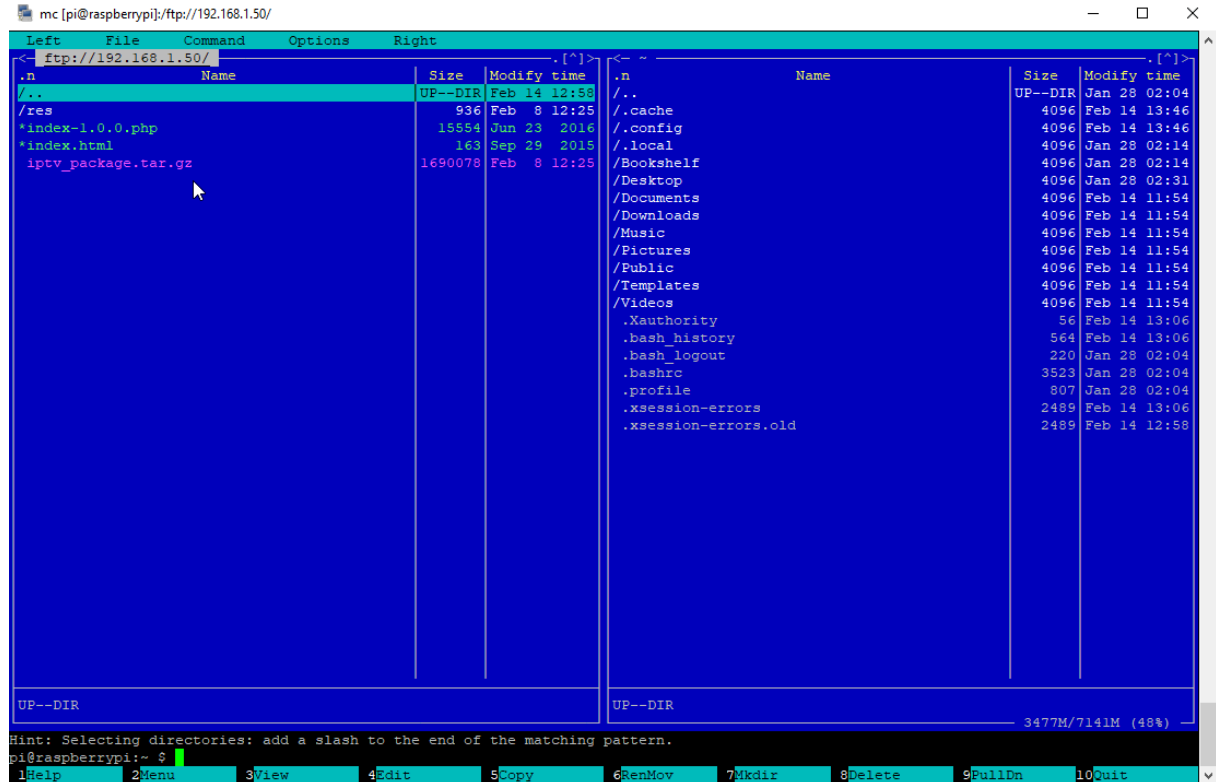
It is almost helpful to install the Midnight Commander on the RPI:

```
sudo apt install mc
```

Via the RPI to manage the STB:

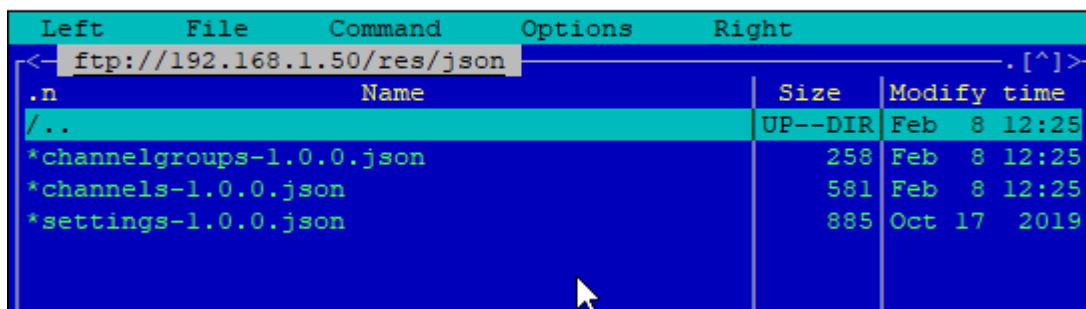
You need to install an FTP client or use the midnight commander:

After the STB has been IPTV-Patched, you can connect to its IP by FTP using MC:



After the IPTV patch the FTP access does not need a user/password combination and is open. So you can down- / upload new channel-lists and groups:

mc [pi@raspberrypi]:/ftp://192.168.1.50/res/json



SSH connectivity to the box and a few php commands after you entered into the IPTV Box by SSH:

User: **admin**

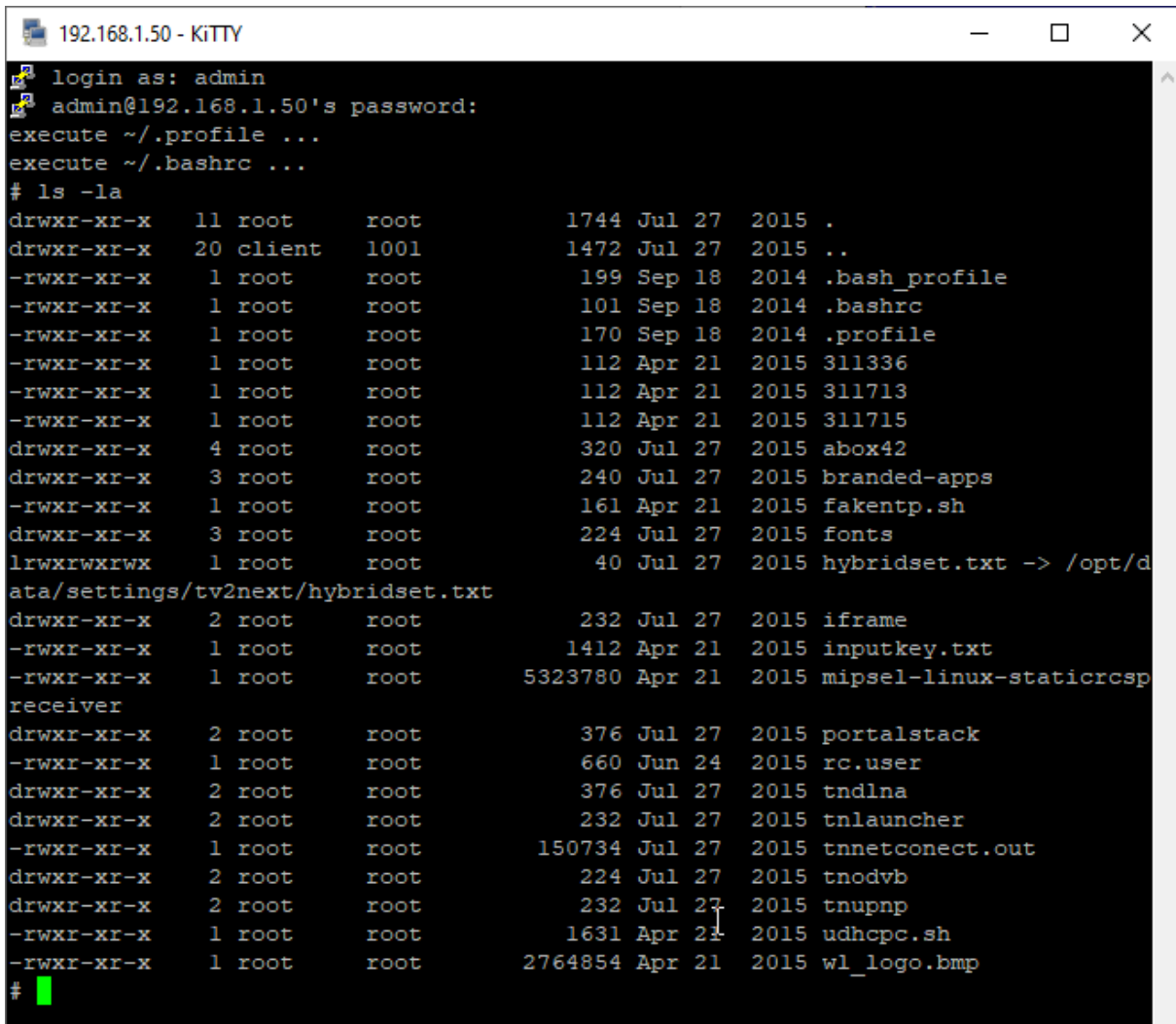
Password: **O9kAdBQcTH7q3kNh**

'O' not '0' !!!

```

pi@raspberrypi:~$ sudo apt install putty-tools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  putty-doc
The following NEW packages will be installed:
  putty-tools
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 332 kB of archives.
After this operation, 2,019 kB of additional disk space will be used.
Get:1 http://ftp.gwdg.de/pub/linux/debian/raspbian/raspbian bullseye/main armhf putty-tools armhf 0.74-1 [332 kB]
Fetched 332 kB in 1s (379 kB/s)
Selecting previously unselected package putty-tools.
(Reading database ... 101829 files and directories currently installed.)
Preparing to unpack .../putty-tools_0.74-1_armhf.deb ...
Unpacking putty-tools (0.74-1) ...
Setting up putty-tools (0.74-1) ...
Processing triggers for man-db (2.9.4-2) ...
    
```

Of course your PC (or the RASPI itself) with Putty installed (ssh comandline will also work) can establish the remote connection to the IPTV-STB:



```

192.168.1.50 - KITTY
login as: admin
admin@192.168.1.50's password:
execute ~/.profile ...
execute ~/.bashrc ...
# ls -la
drwxr-xr-x  11 root    root      1744 Jul 27  2015 .
drwxr-xr-x  20 client  1001     1472 Jul 27  2015 ..
-rwxr-xr-x   1 root    root      199 Sep 18  2014 .bash_profile
-rwxr-xr-x   1 root    root      101 Sep 18  2014 .bashrc
-rwxr-xr-x   1 root    root      170 Sep 18  2014 .profile
-rwxr-xr-x   1 root    root      112 Apr 21  2015 311336
-rwxr-xr-x   1 root    root      112 Apr 21  2015 311713
-rwxr-xr-x   1 root    root      112 Apr 21  2015 311715
drwxr-xr-x   4 root    root      320 Jul 27  2015 abox42
drwxr-xr-x   3 root    root      240 Jul 27  2015 branded-apps
-rwxr-xr-x   1 root    root      161 Apr 21  2015 fakentp.sh
drwxr-xr-x   3 root    root      224 Jul 27  2015 fonts
lrwxrwxrwx   1 root    root        40 Jul 27  2015 hybridset.txt -> /opt/d
ata/settings/tv2next/hybridset.txt
drwxr-xr-x   2 root    root      232 Jul 27  2015 iframe
-rwxr-xr-x   1 root    root     1412 Apr 21  2015 inputkey.txt
-rwxr-xr-x   1 root    root    5323780 Apr 21  2015 mipsel-linux-staticrcsp
receiver
drwxr-xr-x   2 root    root      376 Jul 27  2015 portalstack
-rwxr-xr-x   1 root    root      660 Jun 24  2015 rc.user
drwxr-xr-x   2 root    root      376 Jul 27  2015 tndlna
drwxr-xr-x   2 root    root      232 Jul 27  2015 tnlauncher
-rwxr-xr-x   1 root    root    150734 Jul 27  2015 tnnetconnect.out
drwxr-xr-x   2 root    root      224 Jul 27  2015 tnodvb
drwxr-xr-x   2 root    root      232 Jul 27  2015 tnupnp
-rwxr-xr-x   1 root    root     1631 Apr 21  2015 udhcpc.sh
-rwxr-xr-x   1 root    root    2764854 Apr 21  2015 wl_logo.bmp
#
    
```

Usefull ssh commands with PHP in the box:

- **Factory reset:**  
php -r 'tncommon\_startfactoryreset(0, "AreYouSure");'
- Disable screensaver (ON by default):  
php -r 'tncommon\_enablescreensaver(0);'
- Print available php tncommon api functions:  
php -r 'print\_r(get\_extension\_funcs("tncommon"));'



...

There are a lot more .... For the specialistst who knows php...

One essential file for the STB-Configuration is:

hybridset.txt and is linked /stored in an extra flash nonvolatile partition:

```
# ls -la
drwxr-xr-x  11 root    root      1744 Jul 27  2015 .
drwxr-xr-x  20 client  1001     1472 Jul 27  2015 ..
-rwxr-xr-x   1 root    root      199  Sep 18  2014 .bash_profile
-rwxr-xr-x   1 root    root      101  Sep 18  2014 .bashrc
-rwxr-xr-x   1 root    root      170  Sep 18  2014 .profile
-rwxr-xr-x   1 root    root      112  Apr 21  2015 311336
-rwxr-xr-x   1 root    root      112  Apr 21  2015 311713
-rwxr-xr-x   1 root    root      112  Apr 21  2015 311715
drwxr-xr-x   4 root    root      320  Jul 27  2015 abox42
drwxr-xr-x   3 root    root      240  Jul 27  2015 branded-apps
-rwxr-xr-x   1 root    root      161  Apr 21  2015 fakentp.sh
drwxr-xr-x   3 root    root      224  Jul 27  2015 fonts
lrwxrwxrwx   1 root    root        40  Jul 27  2015 hybridset.txt -> /opt/data/settings/tv2next/hybridset.txt
```

cd /opt/data/settings/tv2next/:

```
# cd /opt/data/settings/tv2next/
# ls -la
drwxr-xr-x   2 root    root      360  Jan  1  1970 .
drwxr-xr-x   9 root    root     2008 Feb  8 23:11 ..
-rwxr-xr-x   1 root    root     112  Jan  1  1970 311336
-rwxr-xr-x   1 root    root     112  Jan  1  1970 311713
-rwxr-xr-x   1 root    root    10037 Feb  8 23:25 hybridset.txt
#
```

```
# df -h
Filesystem      Size      Used Available Use% Mounted on
rootfs          114.1M    114.1M      0 100% /
ubi0_0          114.1M    114.1M      0 100% /
devtmpfs        64.0K      0      64.0K   0% /dev
tmpfs           64.0K      0      64.0K   0% /dev
tmpfs           131.7M     2.5M    129.1M   2% /tmp
tmpfs           64.0K      0      64.0K   0% /mnt
tmpfs           4.0M     24.0K     4.0M   1% /var
ubil_0          111.1M    19.8M    86.7M  19% /opt/data/settings
ubi2_0           53.5M     60.0K    50.7M   0% /mnt/tnfs
#
```

This file hybridset.txt is transferred with the IPTV patch from Omniscreen to this IPTV simple P&P design.

You can modify it to adjust eg. NTP-addresses and time/date/country settings. Please note, many of these config-entries are only for bigger installations with a middleware-server and extra hbbtv tools in the webkit browser and should not work here in the simple P&P setup:

```
[network]
#network.prefdns=208.67.222.222
network.prefdns=192.168.0.1
#network.ntp=time.abox42.com
#network.ntp=192.53.103.108
network.ntp=time.windows.com
#example: if you use a domain and no IP than DNS need to be connected and
configured properly, maybe better to use 192.53.103.108 or .104 in Germany
# hier sollten lokale Daten rein: DNS kann z.B. weltweit der Google sein 8.8.8.8
oder neutral 9.9.9.9, NTP Server sollte ein lokaler genommen werden.
# Kommentarzeilen die vom linux ignoriert werden fangen mit der raute an
```

[key]

```
#key.portal=http://localhost/nanoapps/branded/brandeddashboard/index.html
key.portal=http://localhost/developer/index.html
key.info=http://

[apps]
# the app which will be activated when the box startup.
FirstRunApp=portalstack
# the app which will be run
# for example: if we define RunPortal=portalstack, it means there is a portalstack
directory under rootfs/root, a portalstack.sh file under the portalstack directory,
support to start/stop/restart the subsystem.
#           And the app name of portalstack is /dbus/portalstack, the dbus name
of portalstack is dbus.Portalstack, the path name of portalstack is
/dbus/Portalstack, the interface name of portalstack is dbus.App
RunPortal=portalstack

# im Folgenden sollte z.B. die Timezone gesetzt werden - was das im einzelnen
alles macht weiss ich auch noch nicht
[nano]
nano_enable=1
serviceprovider=abox42
hddsys_enabled=0
#nano_hdd=/mnt/HDDSYS
hddsys_encrypted=0
hddsys_install_app=0
#timezone=Australia/Canberra
timezone=Europe/Berlin
language=en
#language=de
currency=eur
developermode=0
bundle_list=m20-webkit
bundle=default-m20-webkit
welcomevideo.url=/nano-
lamp/var/www/htdocs/nanoapps/abox42/apps/userhomedashboard/img/welcome.mp4
app_auto_update=0
app_hourly_updates=0
# url which is used to check if box is online
#online_check_url=http://check.abox42.com
online_check_url=https://web.de
# timeout for check_url request
online_check_timeout=10
# ttl for entry in apc cache - check interval is calculated from this value (50%)
online_check_apc_ttl=30
# configure timeout for ajax call for installing/updating nano apps (default 90
seconds)
app_install_or_update_ajax_timeout=90
# configure url of red button loop video
loopvideo.stream=http://localhost/api/device/img/loop.mov
# enable (1) or disable (0) auto_install
app_auto_install_on_boot=1
# enable (1) or disable (0) firmware version check (and update) on boot
fw_version_check=0
# enable (1) or disable (0) SSI version check (and update) on boot
ssi_version_check=0
# change language in expert - enabled(1) or disabled(0)
language_chooser_is_enabled=1
# get statistical informations via diagstat_module - 0=disabled 1=enabled
statistics_enabled=0
# enable facebook registration - 0=disabled 1=enabled
#facebook_enabled=1
#facebook_blue_button_enabled=1
facebook_enabled=0
facebook_blue_button_enabled=0

## developer app:
## 1 == disable usage of external USB Stick for local apps (default is 0 == USB
Stick is required)
developer_without_usbstick=1
```

```
[saas]
## used for nano apps ---Software as a service???
#saas.lcm.url=https://m15.lifecycleabox42app.com/provisioning/
#saas.lcm.secret=abox42-m15prod-89be579233bba59c5324afed7d677331
#saas.signature.url=https://m15.signatureabox42app.com/api2/
#saas.signature.secret=abox42-m15prod-7a4aa6f2d119b38e10db5b8acb6fdc069
# saas.cm.url=https://m15.customersabox42app.com/api/
# saas.cm.secret=m15prod_a5850a50ff73c21c305247b59c326579
# saas.tvs.url=https://m15.tvservicesabox42app.com/api/
# saas.tvs.secret=m15prod_caf3fb45cb3a487a611e966d6d90c28b
# saas.reporting.url=https://m15.collectorabox42app.com/inbox

[Device]
# "none" is also valid value here
productname=Omniscreen OMM15
marketing_version=1.10
retailer=BLANKOM
affiliate=BLANKOM
brand_key=COMB0017
brand_description=Combitel Branded

[system]
screensaver.timeout=300
screensaver.enable=0
screensaver.style=1
## standby.timeout is only used for some debug version
standby.timeout=0
## this will enable log printouts to syslog, normally locate in /var/log/messages
#enablelogs=1
enablelogs=0
## this will enable HDCP authentication
hdcpc.enable=1
system.defaultTimezone=Europe/Berlin
#system.defaultTimezone=Australia/Canberra

[user-agent]
## special useragent for certain hosts, they will be grouped by ^, different ua
separated by ^ will be used open url with hosts separated by ^, for example, url
with host ce.radiotime.com in second group will use the useragent in second group
of specialuseragentvalue
## character & will be replaced by ; since content after ; will be discarded
## browser.useragent will be used as default useragent, priority of special
useragent is higher than default useragent
#browser.specialuseragenthosts=hbbtv.ardmediathek.de,itv.ard.de,*.hbbtv-
connect.de,*.rovicorp.com,hbbtv.swisstxt.ch,tv.iview.abc.net.au,tv.tenplay.com.au,h
bbtv.switchmedia.asia,hbbtv.freeviewplus.net.au^ce.radiotime.com,tv.tunein.com,hbbt
v.prosieben.de,hbbtv.sat1.de,hbbtv.kabeleins.de^*.maxdome.de,82.79.128.163^*.weepee
.tv,*.my-stream.eu
#browser.specialuseragentvalue=Mozilla/5.0 (Embedded& Linux) AppleWebKit/534.34
(KHTML, like Gecko& HbbTV/1.1.1 (&tv2next&ABox42-M15&1.0.0&1.0.0&)& en)
Safari/534.34^Opera/9.80 (Linux& U& HbbTV/1.1.1 (&tv2n&videoweb&1.0.0&1.0.0&)& en)
Presto/2.8.115 Version/11.10^Mozilla/5.0 (Embedded& Linux) AppleWebKit/534.34
(KHTML, like Gecko& (&tv2next&ABOX42 m-series&1.0.0&1.0.0&)& en) Safari/534.34^Weebox
(M12-1.0& 1.10 2030.2006.1947.0)/Browser Webkit 535.22
#browser.defaultuseragent=Mozilla/5.0 (Embedded& Linux) AppleWebKit/534.34 (KHTML,
like Gecko& (&tv2next&ABox42-M15&1.0.0&1.0.0&)& en) Safari/534.34
#player.specialuseragenthosts=*.weepee.tv,*.my-stream.eu
#player.specialuseragentvalue=Weebox (M12-1.0& 1.10 2030.2006.1947.0)/Player 1.0
#player.defaultuseragent=HbbTV/1.1.1 (&tv2n&ABox42-M15&0.0.0&1.0.0&)
TV2PLAYER/0.0.0.1

[browser]
## 0: default value, disable going to brandedapp.url on startup.
## 1: enable going to brandedapp.url on startup.
startpage_enable=0
## only work when startpage_enable is 1.
#brandedapp.url=
## 0: default value, this parameter does not take effect and will be ignored.
## 1: go to url in /opt/data/settings/nano-htdocs/developer/STARTURL.TXT or
brandedapp.url if valid on startup.
```

```

## 2: go to index.html or index.php or deploy.php in /opt/data/settings/nano-
htdocs/developer if valid on startup.
check_starturl=0
## only valid when branded app url works.
## 0: default value, this parameter does not take effect and will be ignored.
## 1: will always go to branded app url on HOME key pressed.
browser.alwaysopenbrandedappurl=0
## only valid when branded app url works.
## 0: default value, will check network is valid or not before go to branded app
url on startup, if not valid then go to dashboard.
## 1: will not check network is valid or not, just go to branded app url on
startup, if not valid then go to network error page.
browser.disablenetworkvalidcheck=0
browser.pageloadtimeout=30000
browser.errorpageurl=file:///webkit/webui/networkerror/index.html
browser.tabcontrolbarurl=file:///webkit/webui/tabcontrolbar/index.html
browser.stbprotocolsupport=1
browser.enableremotedebug=1
## 0: default value, all keys will be handled by default behavior in browser first,
if browser does not handle it then webpage will get keyinput.
## 1: all keys will be send to webpage first, if webpage handle it, default
behavior in browser will be prevented.
## 2: only back/reload/portal/mute/vol+/- will be send to webpage first, if webpage
handle it, default behavior in browser will be prevented.
## 3: only mute/vol+/-/power/back/teletext/reload will be send to webpage first, if
webpage handle it, default behavior in browser will be prevented.
browser.sentkeytopagefirst=1
## only valid when browser.sentkeytopagefirst is not 0.
## default behavior will be prevented in these hosts so disable sentkeytopagefirst
feature to make default behavior like HOME key work.
browser.keytopagefirstexhosts=*.*maxdome.de
## back key will always be send to page in these hosts since it is required in
certain apps like kabelkiosk.
browser.alwaysbacktopagehosts=*ce.nowtilus.tv,*.*rovicorp.com
browser.spatialnavdisabledhosts=*.*youtube.com
## 0: disabled, browser validate certificates
## 1: default value, enabled, browser don't validate certificates
browser.insecure=0
## All HTTPS Certificates for all Hosts/Domains listed here (comma separated list,
* wildcard allowed) will not be validated.
#browser.insecurehosts=localhost,json.bild.de
## used to set in which host webpage resource with following mimetypes will parsed
as "text/html".
## {"application/ce-html+xml", "application/vnd.hbbtv.xhtml+xml"}
#browser.parsecehtmlashtmlhosts=json.bild.de,hbbtv.wetter.com,ninehbbtv.freeviewplu
s.net.au
## used to set in which host application manager plugin will be enabled.
#browser.enableappmgrpluginhosts=www.tagesschau.de,www.kikaplus.net,autostart.abc.f
reeviewplus.net.au,ninehbbtv.freeviewplus.net.au,hbbtv.freeviewplus.net.au,tv.iview
.abc.net.au
## used to set in which host "keypress" event will be converted to "keydown" event
to handle key input correctly.
#browser.converkeypresstokeydown=*.*maxdome.de,*.*kinderkino.de,*.*mytvscout.de
## used to set in which application url the application will be blocked.
#browser.blockedapplicationurls=http://hbbtv.freeviewplus.net.au/index.html
## 1: use stream url from zattoo as channel bound in video/broadcast plugin
## 0: will not request stream url from zattoo
#browser.bindbroadcastchannelviazattoo=0
## used to set which exclusive hosts should be set highlighted.
#intelliHighlightedExHosts=localhost,abox42.com,videoweb.de,*.*tagesschau.de,itv.mit
-xperts.com,hbbtv.ardmediathek.de,tv-
html.irt.de,cehtml.arte.tv,hbbtv.yavido.tv,*.*aupeo.com,*.*kbia.de,webtv.sevenload.co
m,*.*hoerbuch-
direkt.tv,hse24.aps.de,*.*services.nrmnh.tv,videoweb.portalzine.tv,nettv.bild.de,idc
p.iplaydev.extdev.bbc.co.uk,hbbtv.daserste.de,hbbtv.br.de,www.br-
online.de,*.*codevise.de,cehtml.arte.tv,digitaltext.rtl.de,mini.maxdome.de,hbbtv.wel
tderwunder.de,koops.e-
media.de,nacamar.haktar.org,hbbtv.wetter.com,*.*ard.de,arte.vo.llnwd.net,tv2next.com
,hbbtv.sat1.de,hbbtv.prosieben.de,meta-
morph.de,192.168.1.144,www.interloqmedia.se,nettv.cinetrailer.tv,*.*mytvscout.de,*.*n

```

```
acamar.net,*.connectedvod.com,*.redbull.tv,*.kabeleins.de,*.kinderkino.de,82.79.128
.163:8080,websiteapp.download.arte.tv,digitalbloom.dev.ping247.de,*.hatcolorsoft.co
m,*.kicker.de,*.nacamar.net,*.putpat.tv,*.onlinetvrecorder.com,*.connept.tv,4tl.ch,
*.assense.com,*.tv-id.net,*.grid-service.net,*.sportdigital.services.nrmmh.tv,*.n-
tv.de,*.sport1.de,*.nexxclients.com,*.international-
tv.de,*.radiotime.com,*.kinowelttv.c.nmdn.net,*.tvbuddy.com,*.youtube.com,*.motorsp
ort-
total.com,*.nowtilus.tv,*.hollystar.ch,*.jaast.com,*.autozine.de,*.freshmilk.tv,*.c
ellmp.de,*.swissinfo.ch,*.swisstxt.ch
## used to set in which hosts script inject is allowed.
scriptInjectedHosts=localhost,127.0.0.1

[proxy]
#proxy.server=192.168.2.100
#proxy.port=8888
#proxy.username=usr
#proxy.password=pwd
#proxy.excludedhosts=localhost,127.0.0.1











[vm]
#add verimatrix server IP and port here
#vm.server=74.62.179.31
#vm.port=12686

#server and port for vmx viewright web/ott
#vmweb.server=74.62.179.10
#vmweb.port=80
```

---

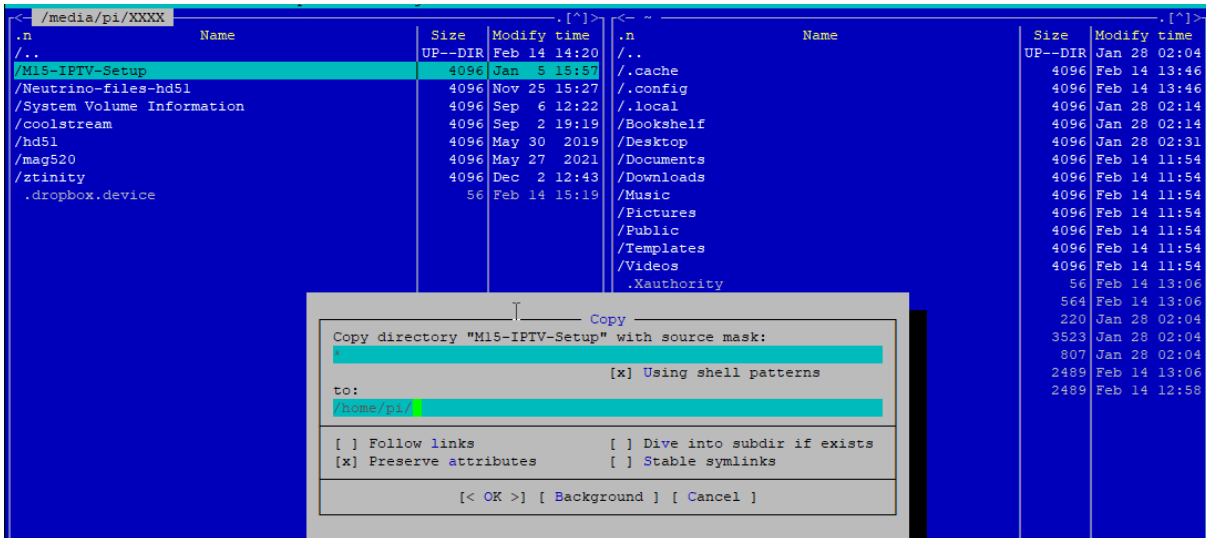
## Back to the Raspi:

To use the RPI as the STB-Managing – unit, we copy the Box necessary content to it:

 abox_42_iptv_setup.sh	01.11.2019 01:00	SH-Datei	1 KB
 abox_42_iptv_setup.tar.gz	08.11.2019 09:50	GZ-Datei	1.657 KB
 channelgroups-1.0.0.json	30.10.2020 12:16	JSON-Datei	1 KB
 channelgroups-full.json	18.09.2020 15:45	JSON-Datei	2 KB
 channels-1.0.0.json	24.11.2021 14:07	JSON-Datei	1 KB
 channels-full.json	23.09.2020 12:17	JSON-Datei	38 KB
 hybridset.txt	25.11.2021 10:55	TXT-Datei	12 KB
 hybridset.txt.org	01.11.2019 01:54	ORG-Datei	11 KB
 IPTV_conf_abox42v6.pdf	01.11.2019 13:00	Adobe Acrobat D...	200 KB
 iptv_package.tar.gz	01.11.2019 00:39	GZ-Datei	1.651 KB

By using curl or any ftp or just a USB stick and MC:

The USB stick is almost likely auto mounted by the RPI:



After transfer they are located under a folder in the pi-home:

```

pi@raspberrypi:~ $ ls -la
total 88
drwxr-xr-x 15 pi pi 4096 Feb 14 14:22 .
drwxr-xr-x 3 root root 4096 Jan 28 02:04 ..
-rw----- 1 pi pi 564 Feb 14 13:06 .bash_history
-rw-r--r-- 1 pi pi 220 Jan 28 02:04 .bash_logout
-rw-r--r-- 1 pi pi 3523 Jan 28 02:04 .bashrc
drwxr-xr-x 2 pi pi 4096 Jan 28 02:14 Bookshelf
drwxr-xr-x 7 pi pi 4096 Feb 14 13:46 .cache
drwx----- 8 pi pi 4096 Feb 14 13:46 .config
drwxr-xr-x 2 pi pi 4096 Jan 28 02:31 Desktop
drwxr-xr-x 2 pi pi 4096 Feb 14 11:54 Documents
drwxr-xr-x 2 pi pi 4096 Feb 14 11:54 Downloads
drwxr-xr-x 3 pi pi 4096 Jan 28 02:14 .local
drwxr-xr-x 2 pi pi 4096 Jan 5 15:57 M15-IPTV-Setup
drwxr-xr-x 2 pi pi 4096 Feb 14 11:54 Music
drwxr-xr-x 2 pi pi 4096 Feb 14 11:54 Pictures
-rw-r--r-- 1 pi pi 807 Jan 28 02:04 .profile
drwxr-xr-x 2 pi pi 4096 Feb 14 11:54 Public
drwxr-xr-x 2 pi pi 4096 Feb 14 11:54 Templates
drwxr-xr-x 2 pi pi 4096 Feb 14 11:54 Videos
-rw----- 1 pi pi 56 Feb 14 13:06 .Xauthority
-rw----- 1 pi pi 2489 Feb 14 13:06 .xsession-errors
-rw----- 1 pi pi 2489 Feb 14 12:58 .xsession-errors.old
pi@raspberrypi:~ $
    
```

We need to check the execution bit of the script:

```
pi@raspberrypi:~/M15-IPTV-Setup $ ls -la
total 3600
drwxr-xr-x  2 pi pi    4096 Jan  5 15:57 .
drwxr-xr-x 15 pi pi    4096 Feb 14 14:22 ..
-rw-r--r--  1 pi pi    958 Nov  1 2019 abox_42 IPTV setup.sh
-rw-r--r--  1 pi pi 1696072 Nov  8 2019 abox_42 IPTV setup.tar.gz
-rw-r--r--  1 pi pi    258 Oct 30 2020 channelgroups-1.0.0.json
-rw-r--r--  1 pi pi   1937 Sep 18 2020 channelgroups-full.json
-rw-r--r--  1 pi pi    581 Nov 24 15:07 channels-1.0.0.json
-rw-r--r--  1 pi pi   37918 Sep 23 2020 channels-full.json
-rw-r--r--  1 pi pi   11290 Nov 25 11:55 hybridset.txt
-rw-r--r--  1 pi pi   10625 Nov  1 2019 hybridset.txt.org
-rw-r--r--  1 pi pi 204128 Nov  1 2019 IPTV_conf_abox42v6.pdf
-rw-r--r--  1 pi pi 1690078 Nov  1 2019 iptv_package.tar.gz
pi@raspberrypi:~/M15-IPTV-Setup $
```

No it isn't !!! so we need to make it executable:

```
sudo chmod 755 abox 42 iptv setup.sh:
```

```
pi@raspberrypi:~/M15-IPTV-Setup $ sudo chmod 755 abox_42 IPTV setup.sh
pi@raspberrypi:~/M15-IPTV-Setup $ ls -la
total 3600
drwxr-xr-x  2 pi pi    4096 Jan  5 15:57 .
drwxr-xr-x 15 pi pi    4096 Feb 14 14:22 ..
-rwxr-xr-x  1 pi pi    958 Nov  1 2019 abox_42 IPTV setup.sh
-rw-r--r--  1 pi pi 1696072 Nov  8 2019 abox_42 IPTV setup.tar.gz
-rw-r--r--  1 pi pi    258 Oct 30 2020 channelgroups-1.0.0.json
-rw-r--r--  1 pi pi   1937 Sep 18 2020 channelgroups-full.json
-rw-r--r--  1 pi pi    581 Nov 24 15:07 channels-1.0.0.json
-rw-r--r--  1 pi pi   37918 Sep 23 2020 channels-full.json
-rw-r--r--  1 pi pi   11290 Nov 25 11:55 hybridset.txt
-rw-r--r--  1 pi pi   10625 Nov  1 2019 hybridset.txt.org
-rw-r--r--  1 pi pi 204128 Nov  1 2019 IPTV_conf_abox42v6.pdf
-rw-r--r--  1 pi pi 1690078 Nov  1 2019 iptv_package.tar.gz
pi@raspberrypi:~/M15-IPTV-Setup $
```

Now we can use that to change values in an already DHCP-connected STB:

Example: we change the DNS in the hybridset.txt to google:

```
[network]
#network.prefdns=208.67.222.222
network.prefdns=8.8.8.8
#network.ntp=time.abox42.com
network.ntp=192.53.103.108
#network.ntp=time.windows.com
# hier sollten lokale Daten rein: DNS kann z.B. weltweit der Google sein 8.8.8.8
oder neutral 9.9.9.9, NTP Server sollte ein lokaler genommen werden.
...
```

So we know the IP address of the box – but if not just tail -f /var/log/syslog

```
pi@raspberrypi:~/M15-IPTV-Setup $ ./abox_42 IPTV setup.sh 192.168.1.50
Uploading files...
Updating ABOX42 192.168.1.50...
send: spawn id exp4 not open
  while executing
"send "O9kAdBQcTH7q3kNh\r""
Refreshing 192.168.1.50...
done
pi@raspberrypi:~/M15-IPTV-Setup $
```

Do the ./ before the \*.sh script.

Hybridset.txt will be overwritten as well as the channels – and group.json – files which contains the channel-list and groups for the user:

That worked:

```
drwxr-xr-x  2 root    root          360 Jan  1  1970 .
drwxr-xr-x  9 root    root          2008 Feb  8 23:11 ..
-rwxr-xr-x  1 root    root           112 Jan  1  1970 311336
-rwxr-xr-x  1 root    root           112 Jan  1  1970 311713
-rwxr-xr-x  1 root    root          10037 Feb  8 23:25 hybridset.txt
# cat *.txt
[network]
#network.prefdns=208.67.222.222
network.prefdns=9.9.9.9
#network.prefdns=192.168.1.1
#network.ntp=time.abox42.com
#network.ntp=192.53.103.108
network.ntp=time.windows.com
# hier sollten lokale Daten rein: DNS kann z.B. weltweit der Google sein
  genommen werden.
# Kommentarzeilen die vom linux ignoriert werden fangen mit der raute an
```

DNS changed to 9.9.9.9 ... ping it ;-)

Ntp time to time.windows.com

So that's all for the moment,

- You now have a DHCP-Server and STB config manager by a RASPBERRY PI

some more stuff in the other PDF...

[IPTV-Multicast-OMM15\\_Manual.1.1.4.pdf](#)