

How to receive files using OBEX Protocol on 88W8987 + iMX8MN-EVK based on Linux 5.x.x

1. Background

External case: [00526337](#)

Customer project: [POSTEK pronter](#)

2. Platform & Driver version

Kernel 5.15.71, 5.4.70 and 5.10.72 Linux prebuilt image, can reproduce this issue.

3. Issue description and error logs

When DUT is receiving file through OBEX, it shows error:

"disconnected: Unicode conversion failed: Conversion from character set 'UTF-16BE' to 'UTF-8' is not supported"

● Part 1: Reproduce

1. Load driver after download kernel 5.10.72 pre-built image.

```
root@imx8mnevk:~# uname -srm
Linux 5.10.72-lts-5.10.y+ga68e31b63f86 aarch64
root@imx8mnevk:~# modprobe moal mod_para=nxp/wifi_mod_para.conf
[ 1991.828751] wlan: loading out-of-tree module taints kernel.
[ 1991.854226] wlan: Loading MWLAN driver
[ 1991.858386] wlan: Driver loaded successfully
[ 1991.858472] wlan: Register to Bus Driver ...
root@imx8mnevk:~# [ 1991.867100] vendor=0x02DF device=0x9149 class=0 function=1
[ 1991.874103] Attach moal handle ops, card interface type: 0x105
[ 1991.880762] SD8987: init module param from usr cfg
[ 1991.885624] card_type: SD8987, config block: 0
[ 1991.890100] cfg80211_wext=0xf
[ 1991.893085] max_vir_bss=1
[ 1991.895721] cal_data_cfg=none
[ 1991.898689] ps_mode = 1
[ 1991.901442] auto_ds = 1
[ 1991.903915] host_mlme=enable
[ 1991.906817] fw_name=nxp/sdiouart8987_combo_v0.bin
[ 1991.911555] SDIO: max_segs=128 max_seg_size=65535
[ 1991.916271] rx_work=1 cpu_num=4
[ 1991.919457] Attach wlan adapter operations.card_type is 0x105.
[ 1991.925670] wlan: Enable TX SG mode
[ 1991.929182] wlan: Enable RX SG mode
[ 1991.934911] Request firmware: nxp/sdiouart8987_combo_v0.bin
[ 1992.303848] wlan: FW download over, firmwarelen=568984 downloaded 568984
[ 1993.170901] WLAN FW is active
[ 1993.173881] on_time is 1993171087250
[ 1993.229047] fw_cap_info=0x181c7f03, dev_cap_mask=0xffffffff
[ 1993.234648] max_p2p_conn = 8, max_sta_conn = 8
[ 1993.259911] wlan: version = SD8987---16.92.21.p11.1-MM5X16283.p2-GPL-(FP92)
[ 1993.268637] wlan: Register to Bus Driver Done
```

2. hciattach /dev/ttymx0 any 115200 flow

```
root@imx8mnevk:~# hciattach /dev/ttymx0 any 115200 flow
Setting TTY to N_HCI line discipline
Device setup complete
```

3. hciconfig hci0 up
4. hciconfig -a

```
root@imx8mnevk:~# hciconfig hci0 up
root@imx8mnevk:~# hciconfig -a
hci0: Type: Primary Bus: UART
      BD Address: 20:4E:F6:20:98:F0 ACL MTU: 1016:5 SCO MTU: 60:12
      UP RUNNING
      RX bytes:1456 acl:0 sco:0 events:86 errors:0
      TX bytes:1238 acl:0 sco:0 commands:86 errors:0
      Features: 0xff 0xfe 0x8f 0xfe 0xdb 0xff 0x7b 0x87
      Packet type: DM1 DM3 DM5 DH1 DH3 DH5 HV1 HV2 HV3
      Link policy: RSWITCH HOLD SNIFF
      Link mode: SLAVE ACCEPT
      Name: 'imx8mnevk'
      Class: 0x200000
      Service Classes: Audio
      Device Class: Miscellaneous,
      HCI Version: 5.2 (0xb) Revision: 0x8300
      LMP Version: 5.2 (0xb) Subversion: 0x100b
      Manufacturer: Marvell Technology Group Ltd. (72)
```

5. Scan remote Bluetooth device and pair, trust it as our trusted device.

```
root@imx8mnevk:~# bluetoothctl
Agent registered
[CHG] Controller 20:4E:F6:20:98:F0 Pairable: yes
[bluetooth]# untrust D8:6C:02:C4:98:90
[CHG] Device D8:6C:02:C4:98:90 Trusted: no
Changing D8:6C:02:C4:98:90 untrust succeeded
[bluetooth]# remove D8:6C:02:C4:98:90
[DEL] Device D8:6C:02:C4:98:90 metzu x8
Device has been removed
[bluetooth]# scan_on
Discovery started
[CHG] Controller 20:4E:F6:20:98:F0 Discovering: yes
[NEW] Device FF:0A:9C:AB:D3:11 FF-0A-9C-AB-D3-11
[NEW] Device E0:92:6E:8B:B0:76 E0-92-6E-8B-B0-76
[CHG] Device FF:0A:9C:AB:D3:11 Name: D21
[CHG] Device FF:0A:9C:AB:D3:11 Alias: D21
[CHG] Device FF:0A:9C:AB:D3:11 ManufacturerData Key: 0x004c
[CHG] Device FF:0A:9C:AB:D3:11 ManufacturerData Value:
  02 15 00 00 99 99 00 00 10 00 80 00 00 17 7a 00 .....z.
  00 02 aa aa bb bb ce .....
[CHG] Device FF:0A:9C:AB:D3:11 ManufacturerData Key: 0x012e
[CHG] Device FF:0A:9C:AB:D3:11 ManufacturerData Value:
  15 49 d3 b6 00 b6 2a 46 4c 30 4d 30 4a 30 30 37 .I....*FL0M0J007
  30 0
[NEW] Device F8:EC:E8:D7:64:F0 D280UT
[NEW] Device EF:1E:FC:7A:19:7C D30
[NEW] Device 88:88:88:88:88:88 Mt-HTS
```

```

[CHG] Device 88:88:88:88:88:88 RSSI: -70
[CHG] Device 88:88:88:88:88:88 RSSI: -82
[CHG] Device 88:88:88:88:88:88 RSSI: -72
[NEW] Device 5C:F3:70:61:C7:0A NXP
[NEW] Device 00:02:72:3E:8C:59 NXP
[NEW] Device E4:FD:A1:EE:EE:88 HUAWEI
[CHG] Device 00:02:72:3E:8C:59 RSSI: -72
[CHG] Device 00:02:72:3E:8C:59 RSSI: -85
[CHG] Device 00:02:72:3E:8C:59 RSSI: -75
[NEW] Device D8:6C:02:C4:98:90 meizu X8
[NEW] Device 44:E5:17:18:37:AA NXL66544
[CHG] Device 00:02:72:3E:8C:59 RSSI: -84

```

```

[bluetooth]# pair E4:FD:A1:EE:EE:88
Attempting to pair with E4:FD:A1:EE:EE:88
[DEL] Device 5C:F3:70:61:C7:0B NXP
[CHG] Device E4:FD:A1:EE:EE:88 Connected: yes
Request confirmation
[agent] Confirm passkey 688058 (yes/no): yes
[CHG] Device E4:FD:A1:EE:EE:88 Modalias: bluetooth:v010Fp107Ed1436
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 0000046a-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001105-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 0000110a-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 0000110c-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001112-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001115-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001116-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 0000111f-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 0000112f-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001132-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001200-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001800-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 00001801-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 0000fdd1-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 0000fe35-0000-1000-8000-00805f9b34fb
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 11c8b310-80e4-4276-afc0-f81590b2177f
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 8ce255c0-200a-11e0-ac64-0800200c9a66
[CHG] Device E4:FD:A1:EE:EE:88 UUIDs: 9664aa26-d76c-43ad-9775-d310f253a408
[CHG] Device E4:FD:A1:EE:EE:88 ServicesResolved: yes
[CHG] Device E4:FD:A1:EE:EE:88 Paired: yes
Pairing successful

```

```

[HUAWEI]# trust E4:FD:A1:EE:EE:88
[CHG] Device E4:FD:A1:EE:EE:88 Trusted: yes
Changing E4:FD:A1:EE:EE:88 trust succeeded

```

- Receive file: From Android Phone to imx8MN:
 Firstly need to input: `/usr/libexec/bluetooth/obexd -a -n -r /home/ &` on I.MX8MN side,
 then choose a file on Android Phone send to i.MX8MN.
 Note: Please remember to quit bluetoothctl after you sent successfully.
 And if returns:
 "Name already in use
 obexd[1114]: manager_init failed"
 you can kill obexd, then restart it again like below.

```

root@imx8mnev:~# /usr/libexec/bluetooth/obexd -r /home/root -a -n
obexd[1114]: OBEX daemon 5.56
Name already in use
obexd[1114]: manager_init failed
root@imx8mnev:~# killall obexd
obexd[1079]: Terminating
root@imx8mnev:~#
[1]+  Done                  /usr/libexec/bluetooth/obexd -a -n -r /home/
root@imx8mnev:~#
root@imx8mnev:~#
root@imx8mnev:~# /usr/libexec/bluetooth/obexd -r /home/root -a -n
obexd[1116]: OBEX daemon 5.56
obexd[1116]: CONNECT(0x0), <unknown>(0xff)
obexd[1116]: CONNECT(0x0), <unknown>(0x0)
obexd[1116]: disconnected: Unicode conversion failed: Conversion from character set "UTF-16BE" to "UTF-8" is not supported

```

```

[bluetooth]# quit
root@imx8mnev:~# /usr/libexec/bluetooth/obexd -a -n -r /home/ &
[1] 1066
root@imx8mnev:~# obexd[1066]: OBEX daemon 5.56
obexd[1066]: CONNECT(0x0), <unknown>(0xff)
obexd[1066]: CONNECT(0x0), <unknown>(0x0)
obexd[1066]: disconnected: Unicode conversion failed: Conversion from character set "UTF-16BE" to "UTF-8" is not supported

```

Until now, I have reproduced customer's issue.

The error is:

disconnected: Unicode conversion failed: Conversion from character set "UTF-16BE" to "UTF-8"

● Part 2: Root cause



cschramm commented on 7 May 2015

Member

OBEX uses UCS-2 in headers. obexd uses glib to convert between UTF-32 and UTF-8. glib uses iconv and iconv somehow seems to depend on the locale. No idea why, but at least there's nothing we can do about that in blueman.

For detailed discussion about this issue, can refer to below link:

<https://github.com/blueman-project/blueman/issues/275>

● Part 3: Solution

According to Weidong's guide " How to Transfer File from Linux Platform To other devices Via Bluetooth - Based on i.MX8MN-EVK And Linux 5.4.70_2.3.0 BSP", I found the solution.

Need to add bluez and related libs to file system.

● Part 4: Verification

Because I have 5.15.71 yocto source code, I will test it on kernel 5.15.71 as an experiment.

1. Firstly, download the whole 5.15.71 yocto source code according to i.MX Yocto Project User's Guide.pdf, then configure the DISTRO and MACHINE with below command:

```
# DISTRO=fsl-imx-xwayland MACHINE=imx8mnev source imx-setup-release.sh -b build-xwayland
```

2. Pay attention!!! Here is the point!!!

gedit ./conf/local.conf

Add following line to local.conf, then compile the yocto BSP.

```
IMAGE_INSTALL:append = " bluez5 bluez5-noinst-tools bluez5-obex  
openobex obexftp glibc-gconv-utf-16 glibc-utils"
```

Shown as below:

```
# Switch to Debian packaging and include package-management in the image  
PACKAGE_CLASSES = "package_deb"  
EXTRA_IMAGE_FEATURES += "package-management"  
IMAGE_INSTALL:append= "bluez5 bluez5-noinst-tools bluez5-obex openobex obexftp glibc-gconv-utf-16 glibc-utils"
```

Note: If you are using kernel before 5.10, like 5.10.72 or 5.4.70, please use below:

```
IMAGE_INSTALL_append = " bluez5 bluez5-noinst-tools bluez5-obex  
openobex obexftp glibc-gconv-utf-16 glibc-utils"
```

Save and Exit.

3. Then begin to compile bsp.

```
# bitbake imx-image-multimedia
```

This process may take several hours, please be patient.

4. Download kernel 5.15.71 pre-built image for i.MX 8MN on our website:
<https://www.nxp.com/design/software/embedded-software/i-mx-software/embedded-linux-for-i-mx-applications-processors:IMXLINUX>

Past Releases

Linux Past Releases

Release	Build Sources and Documentation	Supported Platforms/Demo Images	Incremental Releases
Linux 5.15.71 2.2.0	<ul style="list-style-type: none">DocumentationSee README on instructions for each release.SCFW Porting Kit 1.15.0AACPlus CodecVerisilicon IDENXP Wi-Fi Driver Features and Release NotesuPower Firmware Porting Kit 1.1.0	<ul style="list-style-type: none">i.MX 8DXL EVKi.MX 8M Plus EVKi.MX 8M Nano DDR3L EVKi.MX 8M Nano EVKi.MX 8M Mini EVKi.MX 8M Quad EVKi.MX 8QuadXPlus(C0) MEKi.MX 8QuadMax MEKi.MX 7ULP EVKi.MX 6UltraLite, i.MX 6ULL, i.MX 6ULZ, i.MX 7Duali.MX 6SLL EVKi.MX 6QuadPlus, i.MX 6Quad, i.MX 6DualPlus, i.MX 6Dual, i.MX 6DualLite, i.MX 6Solo, i.MX 6SoloXi.MX 8M EVKs boot image(SystemReady-IR certified)	

5. Copy rootfs、Image、dtb and imx-boot-imx8mnevk-sd.bin-flash_evk from your compiled successfully directory to pre-built Demo image directory.

You can find them in this directory:

```
~/imx-yocto-bsp/build-xwayland/tmp/deploy/images/imx8mnevk/
```

For example:

```
imx-image-multimedia-imx8mnevk-20230410062207.rootfs.tar.zst
```

```
Image
```

```
imx8mn-evk.dtb
```

```
imx-boot-imx8mnevk-sd.bin-flash_evk
```

OSDisk (C:) > work > Linux_prebuilt_image > 8MN > LF_v5.15.71-2.2.0_images_IMX8MNEVK

Name	Date modified	Type	Size
GPLv2	2023/2/14 14:47	File	19 KB
Image	2023/4/10 11:49	File	30,349 KB
Image_linux_source_code	2023/3/10 15:39	File	30,349 KB
Image-imx8_all.bin	2023/2/14 14:51	FTE Binary Export File	30,349 KB
Image-imx8mnevk_original.bin	2023/2/14 14:47	FTE Binary Export File	30,349 KB
imx8mn-ddr4-evk.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-ddr4-evk-ak5558.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-ddr4-evk-lk.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-ddr4-evk-rm67191.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-ddr4-evk-rm67191-cmd-ram.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-ddr4-evk-rm67199.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-ddr4-evk-rm67199-cmd-ram.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-ddr4-evk-rpmsg.dtb	2023/2/14 14:47	DTB File	43 KB
imx8mn-ddr4-evk-usd-wifi.dtb	2023/2/14 14:47	DTB File	42 KB
imx8mn-evk.dtb	2023/4/10 11:49	DTB File	42 KB
imx8mn-evk.dtb_linux_source_code	2023/3/10 15:23	DTB_LINUX_SOURCE_...	42 KB

OSDisk (C:) > work > Linux_prebuilt_image > 8MN > LF_v5.15.71-2.2.0_images_IMX8MNEVK

Name	Date modified	Type	Size
imx8mn-evk-rpmsg.dtb	2023/2/14 14:47	DTB File	43 KB
imx8mn-evk-usd-wifi.dtb	2023/2/14 14:47	DTB File	42 KB
imx-boot-imx8mn-ddr4-evk-fspi.bin-flash_ddr4_evk_flexspi	2023/2/14 14:51	BIN-FLASH_DDR4_EV...	1,880 KB
imx-boot-imx8mn-ddr4-evk-sd.bin-flash_ddr4_evk	2023/2/14 14:51	BIN-FLASH_DDR4_EV...	1,848 KB
imx-boot-imx8mnevk-sd.bin-flash_evk	2023/4/10 11:49	BIN-FLASH_EVK File	1,977 KB
imx-boot-imx8mnevk-sd.bin-flash_evk_original	2023/2/14 14:51	BIN-FLASH_EVK_ORI...	1,977 KB
imx-boot-imx8mn-lpddr4-evk-fspi.bin-flash_evk_flexspi	2023/2/14 14:51	BIN-FLASH_EVK_FLEX...	2,009 KB
imx-boot-imx8mn-lpddr4-evk-sd.bin-flash_evk	2023/2/14 14:51	BIN-FLASH_EVK File	1,977 KB
imx-image-full-imx8mnevk.manifest	2023/2/14 14:51	MANIFEST File	124 KB
imx-image-full-imx8mnevk.tar.zst	2023/2/14 14:51	ZST File	1,121,055 KB
imx-image-full-imx8mnevk.wic	2023/2/14 14:49	WIC File	8,254,292 KB
imx-image-multimedia-imx8mnevk.manifest	2023/2/14 14:51	MANIFEST File	112 KB
imx-image-multimedia-imx8mnevk.tar.zst	2023/2/14 14:51	ZST File	746,311 KB
imx-image-multimedia-imx8mnevk.wic	2023/2/14 14:51	WIC File	5,847,543 KB
imx-image-multimedia-imx8mnevk-20230410062207.rootfs.tar.zst	2023/4/10 14:30	ZST File	746,774 KB
licenses-fsl-imx-xwvland_imx8mnevk.tar.gz	2023/2/14 14:47	GZ File	7.033 KB

6. Modifying example_kernel_emmc.uuu as uuu programming script

Copy demo-image/samples/example_kernel_emmc.uuu to upper directory, and modify

items below:

_flash.bin --> **imx-boot-imx8mnevk-sd.bin-flash_evk**

_Image --> **Image**

_board.dtb --> **imx8mn-evk.dtb**

_initramfs.cpio.gz.uboot ---> **fsl-image-mfgtool-initramfs-**

imx_mfgtools.cpio.gz.u-boot

_rootfs.tar.bz2 --> **imx-image-multimedia-imx8mnevk-20230410062207.rootfs.tar.zst**

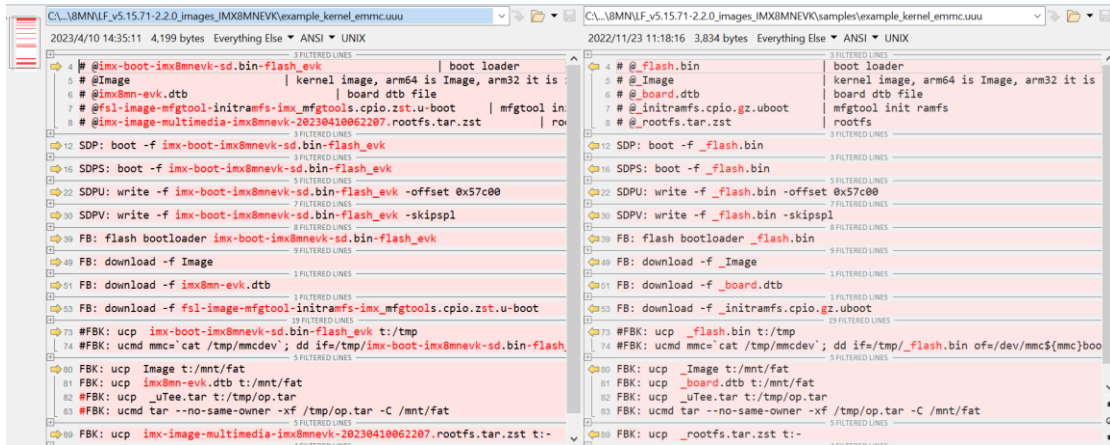
Comment these 2 lines:

#FBK: ucp _uTee.tar t:/tmp/op.tar

#FBK: ucmd tar -xf /tmp/op.tar -C /mnt/fat

Save & Exit.

Shown as below:



7. Programming images to i.MX8MN-EVK board

Change board to USB download mode, then flash with uuu tool:

Set SW1101: PIN1=ON, PIN2=OFF

```
C:\work\Linux_prebuilt_image\8MN\LF_v5.15.71-2.2.0_images_IMX8MNEVK>uuu C:\work\Linux_prebuilt_image\8MN\LF_v5.15.71-2.2.0_images_IMX8MNEVK\example_kernel_emmc_uuu
uuu (Universal Update Utility) for nxp imx chips -- libuuu_1.4.243-0-ged48c51

Success 1   Failure 0

2:4   21/21 [Done]   ] FBK: DONE
```

8. Booting i.MX8MN-EVK board (Change board to boot mode) and log-in with root

Set SW1101: PIN1=OFF, PIN2=ON

9. Loading WIFI/BT driver

```

imx8mnevk login: root
root@imx8mnevk:~#
root@imx8mnevk:~#
root@imx8mnevk:~#
root@imx8mnevk:~#
root@imx8mnevk:~# modprobe moal mod_para=nxp/wifi_mod_para.conf
[ 25.612155] wlan: loading out-of-tree module taints kernel.
[ 25.643546] wlan: Loading MWLAN driver
[ 25.648218] wlan: Register to Bus Driver ...
[ 25.652609] vendor=0x02DF device=0x9149 class=0 function=1
[ 25.658177] Attach moal handle ops, card interface type: 0x105
[ 25.664712] SD8987: init module param from usr cfg
[ 25.669553] card_type: SD8987, config block: 0
[ 25.674016] cfg80211_wext=0xf
[ 25.676995] max_vir_bss=1
[ 25.679629] cal_data_cfg=none
[ 25.682599] ps_mode = 1
[ 25.685056] auto_ds = 1
[ 25.687517] host_mlme=enable
[ 25.690399] fw_name=nxp/sdiouart8987_combo_v0.bin
[ 25.695132] SDIO: max_segs=128 max_seg_size=65535
[ 25.699853] rx_work=1 cpu_num=4
[ 25.703019] Attach wlan adapter operations.card_type is 0x105.
[ 25.709507] wlan: Enable TX SG mode
[ 25.713031] wlan: Enable RX SG mode
[ 25.723541] Request firmware: nxp/sdiouart8987_combo_v0.bin
[ 25.975705] wlan: FW download over, firmwarelen=603832 downloaded 603832
[ 26.815468] rc rc0: two consecutive events of type space
[ 26.839600] WLAN FW is active
[ 26.842604] on_time is 26839167500
[ 26.900268] fw_cap_info=0x181d7f03, dev_cap_mask=0xffffffff
[ 26.905872] max_p2p_conn = 8, max_sta_conn = 8
[ 26.910623] SDIO rx aggr: 1 block_size=512
[ 26.914803] wlan: Enable RX SG mode
[ 26.918320] mpa_rx_buf_size=65280
[ 26.933510] Register NXP 802.11 Adapter wlan0
[ 26.943880] Register NXP 802.11 Adapter uap0
[ 26.951166] Register NXP 802.11 Adapter wfd0
[ 26.955571] wlan: version = SD8987---16.92.21.p69.3-MM5X16366.p5-GPL-(FP92)
[ 26.964430] wlan: Register to Bus Driver Done
[ 26.968876] wlan: Driver loaded successfully

```

10. Enable Bluetooth


```

root@imx8mnevk:~# hciattach /dev/ttymx0 any 115200 flow
Setting TTY to N_HCI line discipline
Device setup complete
root@imx8mnevk:~# [ 76.101279] NET: Registered PF_ALG protocol family

root@imx8mnevk:~#
root@imx8mnevk:~#
root@imx8mnevk:~# hciconfig hci0 up
root@imx8mnevk:~# hciconfig -a
hci0: Type: Primary Bus: UART
      BD Address: 20:4E:F6:20:98:F0 ACL MTU: 1016:5 SCO MTU: 60:12
      UP RUNNING
      RX bytes:1498 acl:0 sco:0 events:90 errors:0
      TX bytes:1270 acl:0 sco:0 commands:90 errors:0
      Features: 0xff 0xfe 0x8f 0xfe 0xdb 0xff 0x7b 0x87
      Packet type: DM1 DM3 DM5 DH1 DH3 DH5 HV1 HV2 HV3
      Link policy: RSWITCH HOLD SNIFF
      Link mode: PERIPHERAL ACCEPT
      Name: 'imx8mnevk'
      Class: 0x200000
      Service Classes: Audio
      Device Class: Miscellaneous,
      HCI Version: 5.2 (0xb) Revision: 0x8300
      LMP Version: 5.2 (0xb) Subversion: 0x1045
      Manufacturer: Marvell Technology Group Ltd. (72)

```

11. With bluetoothctl tool, power on and scan the target remote Android Bluetooth device Redmi Note 9 4G (22:22:54:24:44:8F)

```

root@imx8mnevk:~# bluetoothctl
Agent registered
[CHG] Controller 20:4E:F6:20:98:F0 Pairable: yes
[bluetooth]# power on
Changing power on succeeded
[bluetooth]# scan on
Discovery started
[CHG] Controller 20:4E:F6:20:98:F0 Discovering: yes
[NEW] Device EF:1E:FC:7A:19:7C D30
[NEW] Device 5C:F3:70:61:C7:0B Mt-HID
[NEW] Device 00:02:72:3E:3E:D2 Mt-HID
[NEW] Device ED:61:1C:B5:5B:68 D28IN
[CHG] Device EF:1E:FC:7A:19:7C ManufacturerData Key: 0x012e
[CHG] Device EF:1E:FC:7A:19:7C ManufacturerData Value:
 15 49 d3 b6 00 b6 2a 46 4c 30 4d 30 4a 30 32 54 .I...*FLOM0J02T
 57                                     W
[CHG] Device EF:1E:FC:7A:19:7C ManufacturerData Key: 0x004c
[CHG] Device EF:1E:FC:7A:19:7C ManufacturerData Value:
 02 15 00 00 99 99 00 00 10 00 80 00 00 17 7a 00 .....z.
 00 02 aa aa bb bb ce                .....
[NEW] Device FF:0A:9C:AB:D3:11 D21
[NEW] Device E0:92:6E:8B:B0:76 E0-92-6E-8B-B0-76
[NEW] Device 08:7C:BE:86:79:87 MiKettle
[NEW] Device 52:DB:2B:0F:CC:E2 52-DB-2B-0F-CC-E2
[CHG] Device 00:02:72:3E:3E:D2 RSSI: -85
[NEW] Device D7:55:8A:B1:45:11 D22
[NEW] Device F8:EC:E8:D7:64:F0 D28OUT

```

```
[NEW] Device 22:22:54:24:44:8F Redmi Note 9 4G
[CHG] Device 24:41:8C:4A:84:B2 RSSI: -77
[bluetooth]# scan off
Discovery stopped
[CHG] Device 22:22:54:24:44:8F RSSI is nil
[CHG] Device 74:B2:A0:2F:44:B5 TxPower is nil
[CHG] Device 74:B2:A0:2F:44:B5 RSSI is nil
[CHG] Device 55:36:6A:D9:08:AA TxPower is nil
[CHG] Device 55:36:6A:D9:08:AA RSSI is nil
```

12. Pair with target remote Bluetooth device Redmi Note 9 4G (22:22:54:24:44:8F)

```
[bluetooth]# pair 22:22:54:24:44:8F
Attempting to pair with 22:22:54:24:44:8F
[CHG] Device 22:22:54:24:44:8F Connected: yes
Request confirmation
[agent] Confirm passkey 477978 (yes/no): yes
[CHG] Device 22:22:54:24:44:8F Bonded: yes
[CHG] Device 22:22:54:24:44:8F Modalias: bluetooth:v038Fp1200d1436
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001105-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 0000110a-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 0000110c-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001112-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001115-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001116-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 0000111f-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 0000112f-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001132-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001200-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001800-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 00001801-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 0000fdaa-0000-1000-8000-00805f9b34fb
[CHG] Device 22:22:54:24:44:8F UUIDs: 98b97136-36a2-11ea-8467-484d7e99a198
[CHG] Device 22:22:54:24:44:8F ServicesResolved: yes
[CHG] Device 22:22:54:24:44:8F Paired: yes
Pairing successful
```

13. Trust the target remote Bluetooth device:

```
[bluetooth]# trust 22:22:54:24:44:8F
[CHG] Device E0:92:6E:8B:B0:76 RSSI: -79
[CHG] Device 22:22:54:24:44:8F Trusted: yes
Changing 22:22:54:24:44:8F trust succeeded
```

14. Set our DUT is discoverable so that remote Bluetooth device can find us when send file to us.

```
[bluetooth]# discoverable on
Changing discoverable on succeeded
[CHG] Controller 20:4E:F6:20:98:F0 Discoverable: yes
[bluetooth]# quit
```

15. With below command to enter receiving file mode and set received directory:

/usr/libexec/bluetooth/obexd -a -n -r /home/root/ &

If you meet the same error with me that show Name already in use, please follow below screenshot to kill the obexd then try again.

16. Choose a file on remote Android phone, and send by Bluetooth, then choose our DUT as the receiving target.



选择蓝牙设备



imx8mnevk

已保存



NXL66202



Mi 10



NXL66191



NXL66544



刷新

17. You can see send successfully on Android phone, and can also find the file in the /home/root/ directory on DUT.

```
root@imx8mnevk:~# /usr/libexec/bluetooth/obexd -a -n -r /home/root/ &
[2] 634
root@imx8mnevk:~# obexd[634]: OBEX daemon 5.65
Name already in use
obexd[634]: manager_init failed

[2]+ Done(1) /usr/libexec/bluetooth/obexd -a -n -r /home/root/
root@imx8mnevk:~#
root@imx8mnevk:~#
root@imx8mnevk:~#
root@imx8mnevk:~# killall obexd
obexd[626]: Terminating
root@imx8mnevk:~#
[1]+ Done /usr/libexec/bluetooth/obexd -a -n -r /home/root/
root@imx8mnevk:~#
root@imx8mnevk:~#
root@imx8mnevk:~# /usr/libexec/bluetooth/obexd -a -n -r /home/root/ &
[1] 636
root@imx8mnevk:~# obexd[636]: OBEX daemon 5.65
obexd[636]: CONNECT(0x0), <unknown>(0xff)
obexd[636]: CONNECT(0x0), <unknown>(0x0)
obexd[636]: PUT(0x2), <unknown>(0xff)
obexd[636]: PUT(0x2), Continue(0x10)
obexd[636]: DISCONNECT(0x1), <unknown>(0xff)
obexd[636]: DISCONNECT(0x1), Success(0x20)
obexd[636]: disconnected: Transport got disconnected
```

下午5:11

73



2023年2月14日

18:13 | Security



nRF Connect

MULTIMEDIA

Adjust media volume

Allow the app to adjust media volume

PRIVACY

Get location info

get precise location (GPS and network-based)

Get info about installed apps

get info about the apps installed on this

文件传输

发给：“imx8mnevK”

文件：/storage/emulated/0/Android/
data/com.miui.gallery/cache/

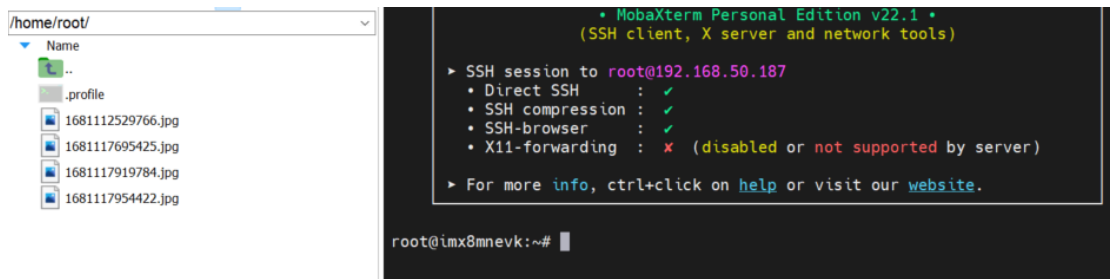
SecurityShare/1681117695425.jpg

文件
蓝牙传输：/storage/emulated/0/
Android/data/com.miui.gallery/cache/
SecurityShare/1681117695425.jpg 已发

送

100%

确定



18. Right-click the file, and download it to our PC's desktop, you can open and see the file.

Finished by Christine.Li.
10/04/2023