I.MX8M STANDALONE BUILD

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NXP

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Prepare Toolchain

DISTRO=fsl-imx-wayland   MACHINE=imx8mqevk source fsl-setup-release.sh -b imx8mqevk_meta-toolchain

bitbake meta-toolchain

After build done, you will find toolchain installation file in imx8mqevk_meta-toolchain/tmp/deploy/sdk

fsl-imx-wayland-glibc-x86_64-meta-toolchain-aarch64-toolchain-4.9.51-mx8-ga.sh

Install The Toolchain

Run installation file

chmod +x fsl-imx-wayland-glibc-x86_64-meta-toolchain-aarch64-toolchain-4.9.51-mx8-ga.sh

./fsl-imx-wayland-glibc-x86_64-meta-toolchain-aarch64-toolchain-4.9.51-mx8-ga.sh

Enter target directory for SDK (default: /opt/fsl-imx-wayland/4.9.51-mx8-ga):

You are about to install the SDK to "/opt/fsl-imx-wayland/4.9.51-mx8-ga". Proceed[Y/n]? **Y**

After finish the installation you will find the toolchain is in the /opt/fsl-imx-wayland/4.9.51-mx8-ga

Build uboot

git clone https://source.codeaurora.org/external/imx/uboot-imx
cd uboot-imx
git tag
git checkout rel_imx_4.9.51_8mq_ga

source /opt/fsl-imx-wayland/4.9.51-mx8-ga/environment-setup-aarch64-poky-linux

make imx8mq_evk_config
CC="$CC" make

After build done, you will find
u-boot-nodtb.bin
spl/**u-boot-spl.bin**
arch/arm/dts/**fsl-imx8mq-evk.dtb**

Build Linux Kernel

git clone https://source.codeaurora.org/external/imx/linux-imx
cd linux-imx
git tag
git checkout rel_imx_4.9.51_8mq_ga

source /opt/fsl-imx-wayland/4.9.51-mx8-ga/environment-setup-aarch64-poky-linux

make defconfig

LDFLAGS="" CC="$CC" make

After build done, you will find

arch/arm64/boot/dts/freescale/**fsl-imx8mq-evk.dtb**
arch/arm64/boot/**Image**

Get firmware and Extract

wget http://www.freescale.com/lgfiles/NMG/MAD/YOCTO/firmware-imx-7.4.bin

chmod +x firmware-imx-7.4.bin

./firmware-imx-7.4.bin

```
|-- ddr
|   `-- synopsys
|       |-- ddr3_dmem_1d.bin
|       |-- ddr3_imem_1d.bin
|       |-- ddr4_dmem_1d.bin
|       |-- ddr4_dmem_2d.bin
|       |-- ddr4_imem_1d.bin
|       |-- ddr4_imem_2d.bin
|       |-- lpddr4_pmu_train_1d_dmem.bin
|       |-- lpddr4_pmu_train_1d_imem.bin
|       |-- lpddr4_pmu_train_2d_dmem.bin
|       `-- lpddr4_pmu_train_2d_imem.bin
|-- epdc
|   |-- epdc_E060SCM.fw
|   |-- epdc_E60_V110.fw
|   |-- epdc_E60_V220.fw
|   |-- epdc_E97_V110.fw
|   `-- epdc_ED060XH2C1.fw.nonrestricted
|-- hdmi
|   `-- cadence
|       |-- dpfw.bin
|       |-- hdmitxfw.bin
|       `-- signed_hdmi_imx8m.bin
|-- sdma
|   |-- sdma-imx25-to1.bin
|   |-- sdma-imx31-to1.bin
|   |-- sdma-imx31-to2.bin
|   |-- sdma-imx35-to1.bin
|   |-- sdma-imx35-to2.bin
|   |-- sdma-imx51-to3.bin
|   `-- sdma-imx53-to1.bin
`-- vpu
    |-- vpu_fw_imx27_TO1.bin
    |-- vpu_fw_imx27_TO2.bin
    |-- vpu_fw_imx51.bin
    |-- vpu_fw_imx53.bin
    |-- vpu_fw_imx6d.bin
    `-- vpu_fw_imx6q.bin
```

Build ATF

git clone https://source.codeaurora.org/external/imx/imx-atf
cd imx-atf
git tag
git checkout rel_imx_4.9.51_8mq_ga

source /opt/fsl-imx-wayland/4.9.51-mx8-ga/environment-setup-aarch64-poky-linux

make clean PLAT=imx8mq

LDFLAGS="" make PLAT=imx8mq

After build done, you will find

build/imx8mq/release/**bl31.bin**

Build imx-mkimage and Generate flash.bin

git clone https://source.codeaurora.org/external/imx/imx-mkimage
cd imx-mkimage
git tag
git checkout rel_imx_4.9.51_8mq_ga

source /opt/fsl-imx-wayland /4.9.51-mx8-ga/environment-setup-aarch64-poky-linux

uboot:
cp **u-boot-nodtb.bin** imx-mkimage/iMX8M/
cp spl/**u-boot-spl.bin** imx-mkimage/iMX8M/
cp arch/arm/dts/**fsl-imx8mq-evk.dtb** imx-mkimage/iMX8M/
cp tools/**mkimage** imx-mkimage/iMX8M/mkimage_uboot
firmware:
cp hdmi/cadence/**signed_hdmi_imx8m.bin** imx-mkimage/iMX8M/
cp ddr/synopsys/**lpddr4_pmu_train_1d_imem.bin** imx-mkimage/iMX8M/
cp ddr/synopsys/**lpddr4_pmu_train_1d_dmem.bi**n imx-mkimage/iMX8M/
cp ddr/synopsys/**lpddr4_pmu_train_2d_imem.bin** imx-mkimage/iMX8M/
cp ddr/synopsys/**lpddr4_pmu_train_2d_dmem.bin** imx-mkimage/iMX8M/
atf:
cp build/imx8mq/release/**bl31.bin** imx-mkimage/iMX8M/

Build flash.bin:

make SOC=iMX8M clean
make SOC=iMX8M flash_hdmi_spl_uboot

After build done, you will find
iMX8M/**flash.bin**

Burn the flash.bin

dd if=flash.bin of=/dev/sd[x] bs=1K seek=33

Ex: dd if=flash.bin of=/dev/sd**c** bs=1K seek=33

Replace spl/u-boot-spl.bin and u-boot- nodtb.bin to the imx-mkimage for new flash binary.
 if you want to update spl, need re-grenerate the flash binary
 if only update the u-boot.itb, can dd binary directly, it was still created by mkimage tool.

dd if= u-boot.itb of=/dev/sd[x] bs=1K seek=384

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