

Compiling L5.4.24_2.1.0 BSP

(1) downloading yocto bsp (L5.4.24_2.1.0)

```
# rm -rf ~/bin
# mkdir ~/bin
# curl https://storage.googleapis.com/git-repo-downloads/repo > ~/bin/repo
# chmod a+x ~/bin/repo
# export PATH=~/bin:$PATH

# mkdir imx-yocto-bsp-5.4.24-2.1.0
# cd imx-yocto-bsp-5.4.24-2.1.0
# repo init -u https://source.codeaurora.org/external/imx/imx-manifest -b imx-linux-zeus -m imx-5.4.24-2.1.0.xml
```

```
weldong@ubuntu:~/imx-yocto-bsp-5.4.24-2.1.0$ repo init -u https://source.codeaurora.org/external/imx/imx-manifest -b imx-linux-zeus -m imx-5.4.24-2.1.0.xml
Downloading Repo source from https://gerrit.googlesource.com/git-repo
remote: Finding sources: 100% (7/7)
remote: Total 7 (delta 0), reused 7 (delta 0)
Unpacking objects: 100% (7/7), done.
repo: Updating release signing keys to keyset ver 2.3
Downloading manifest from https://source.codeaurora.org/external/imx/imx-manifest
Receiving objects: 100% (938/938), 248.87 KiB | 10.37 MiB/s, done.
Resolving deltas: 100% (539/539), done.
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Compressing objects: 100% (9/9), done.
remote: Total 9 (delta 1), reused 1 (delta 0)

Your identity is: "wlgros_sun" <weldong.sun@nxp.com>
If you want to change this, please re-run 'repo init' with --config-name

Testing colorized output (for 'repo diff', 'repo status'):
black red green yellow blue magenta cyan white
bold
Enable color display in this user account (y/N)? y

repo has been initialized in /home/weldong/imx-yocto-bsp-5.4.24-2.1.0
weldong@ubuntu:~/imx-yocto-bsp-5.4.24-2.1.0$
```

```
# cd .repo/manifests
# gedit imx-5.4.24-2.1.0.xml
```

Modify git to https like below:

```
<remote fetch="https://git.yoctoproject.org/git" name="yocto"/>
<remote fetch="https://github.com/Freescale" name="community"/>
<remote fetch="https://github.com/openembedded" name="oe"/>
<remote fetch="https://github.com/OSSystems" name="OSSystems"/>
<remote fetch="https://github.com/meta-qt5" name="QT5"/>
<remote fetch="https://github.com/TimesysGit" name="Timesys"/>
<remote fetch="https://github.com/meta-rust" name="rust"/>
<remote fetch="https://git.openembedded.org" name="python2"/>
<remote fetch="https://source.codeaurora.org/external/imx" name="CAF"/>
```

Save it and exit.

```
# cd ~/imx-yocto-bsp-5.4.24-2.1.0
# repo sync
```

```
weldong@ubuntu:~/imx-yocto-bsp-5.4.24-2.1.0/.repo/manifests$ cd ../../
weldong@ubuntu:~/imx-yocto-bsp-5.4.24-2.1.0$ repo sync
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (4/4), done.
remote: Enumerating objects: 32, done. 12.00 KiB/s
remote: Total 275 (delta 1), reused 0 (delta 0), pack-reused 271
Receiving objects: 100% (275/275), 61.04 KiB | 52.00 KiB/s, done.
Resolving deltas: 100% (148/148), done.
remote: Counting objects: 100% (32/32), done. remote: Counting objects: 12% (4/32)
remote: Compressing objects: 100% (17/17), done.
remote: Enumerating objects: 36, done. B | 119.00 KiB/s
remote: Counting objects: 100% (36/36), done.
remote: Compressing objects: 100% (23/23), done.
Receiving objects: 34% (2208/6493), 1.09 MiB | 201.00 KiB/s
```

Begin to compile i.MX8MQ BSP:

```
# DISTRO=fsl-imx-wayland MACHINE=imx8mqevk source imx-setup-release.sh -b build-wayland
```

If users want to use chromium, do it like below, otherwise omit the step.

Add CORE_IMAGE_EXTRA_INSTALL += "chromium-ozone-wayland" to local.conf

And use 8 thread to compile BSP

```
# gedit ./conf/local.conf
```

.....

```
BB_NUMBER_THREADS = "4"
```

```
PARALLEL_MAKE = "-j 4"
```

```
CORE_IMAGE_EXTRA_INSTALL += "chromium-ozone-wayland"
```

.....

Save it and exit.

[comment]

If your ubuntu has 8GB DDR, BB_NUMBER_THREADS can be set to "2", PARALLEL_MAKE can be set to "-j 2".

```
# bitbake chromium-ozone-wayland -c fetch
```

```
# bitbake imx-image-full
```

```
Parsing recipes: 100% |#####| TLine: 0:02:26
Parsing of 3213 .bb files complete (0 cached, 3213 parsed). 4671 targets, 458 skipped, 2 masked, 0 errors.
NOTE: Resolving any missing task queue dependencies

Build configuration:
BB_VERSION      = "1.44.0"
BUILD_SYS      = "x86_64-linux"
NATIVELSBSTRING = "ubuntu-18.04"
TARGET_SYS     = "aarch64-poky-linux"
MACHINE        = "imx8mqevk"
DISTRO         = "fsl-imx-wayland"
DISTRO_VERSION = "5.4-zeus"
TUNE_FEATURES  = "aarch64 cortexa53 crc crypto"
TARGET_FPU     = ""
meta
meta-poky      = "HEAD:cb9e741370e195d109353e51510bd829aa80c3"
meta-oe
meta-multimedia
meta-python   = "HEAD:9e6dd30669a2ad0598e9abfcd15ee0b523986b"
meta-freescale = "HEAD:c2a8d924f6200eeaf1bd1b61e7420e5da2f8fb"
meta-freescale-3rdparty = "HEAD:dbcc686f52c3c84db8cb86aa897344e373651b98"
meta-freescale-distro = "HEAD:ca27d12e496401336e62bcc60184bfff526c857"
meta-bsp
meta-sdk
meta-ml       = "HEAD:6e7809dfbd9d97b280fa896f5b7071163dacbf1"
meta-browser  = "HEAD:5f305ef0f842b4651efe88707cf9c03bc8b0cb3"
meta-rust     = "HEAD:a012a1027defe28495f06ed522a7a82bdd59a610"
meta-gnome
meta-networking
meta-filesystems = "HEAD:9e6dd30669a2ad0598e9abfcd15ee0b523986b"
meta-qt5     = "HEAD:1b0bcf8cb576d072f435a0177375e54424f07d1c9"
meta-python2  = "HEAD:231c3d74cf734c315e6ea8d69773d6cee9d"

Initialising tasks: 100% |#####| TLine: 0:00:08
State summary: Wanted 3084 Found 0 Missed 3084 Current 0 (0% match, 0% complete)
NOTE: Executing Tasks
NOTE: Setscene tasks completed
Currently 4 running tasks (43 of 8243) 0% |
0: quilt-native-0.66-r0 do_configure - 1s (pid 63629)
1: flex-native-2.0.0-r0 do_unpack - 0s (pid 6373)
2: binutils-cross-aarch64-2.32.0-r0 do_fetch - 0s (pid 63894)
3: gmp-native-6.1.2-r0 do_unpack - 0s (pid 63944)
```

```
Initialising tasks: 100% |#####| TLine: 0:00:08
State summary: Wanted 2952 Found 0 Missed 2952 Current 132 (0% match, 4% complete)
NOTE: Executing Tasks
NOTE: Setscene tasks completed
ERROR: chromium-ozone-wayland-75.0.3770.142-r0 do_check_fdlimit_for_linking: The current maximum number of open file descriptors is too low (1024), and causes ld.bfd to fail to link chromium. Please use ulimit -n to increase it to a higher value, such as 4096, or switch to gold or lld.
ERROR: logfile of failure stored in: /home/weldong/linux-yocto-bsp-5.4.24-2.1.0/build-wayland/tmp/work/aarch64-mx8mqevk-linux/chromium-ozone-wayland/75.0.3770.142-r0/temp/log.do_check_fdlimit_for_linking.0308
ERROR: Task (/home/weldong/linux-yocto-bsp-5.4.24-2.1.0/sources/meta-browser/recipes-browser/chromium/chromium-ozone-wayland-75.0.3770.142.bb:do_check_fdlimit_for_linking) failed with exit code 1
NOTE: Tasks Summary: Attempted 1865 tasks of which 1787 didn't need to be rerun and 1 failed.

Summary: 1 task failed:
/home/weldong/linux-yocto-bsp-5.4.24-2.1.0/sources/meta-browser/recipes-browser/chromium/chromium-ozone-wayland-75.0.3770.142.bb:do_check_fdlimit_for_linking
Summary: There was 1 ERROR message shown, returning a non-zero exit code.
weldong@ubuntu:~/linux-yocto-bsp-5.4.24-2.1.0/build-wayland$ ulimit -n 4096
weldong@ubuntu:~/linux-yocto-bsp-5.4.24-2.1.0/build-wayland$
```

Use `ulimit -n 4096` to solve the issue. Then continue.

```
# bitbake imx-image-full
```

```
Initialising tasks: 100% |#####| TLine: 0:00:06
State summary: Wanted 2941 Found 0 Missed 2941 Current 143 (0% match, 4% complete)
NOTE: Executing Tasks
NOTE: Setscene tasks completed
WARNING: cpuburn-arm-1.0:gitAUTOINC+ad7e640700-r0 do_fetch: failed to fetch URL git://github.com/ssvb/cpuburn-arm.git, attempting MIRRORS if available
WARNING: jailhouse-0.12-r0 do_fetch: Failed to fetch URL git://source.codeaurora.org/external/linux-jailhouse.git:protocolssh;branch=imx-5.4.24-2.1.0, attempting MIRRORS if available
Currently 8 running tasks (4187 of 8243) 50% |#####|
0: llvmlinux-5.4-r0 do_compile - 1h24m3s (pid 81106)
1: nodejs-native-10.16.3-r0 do_compile - 1h17m57s (pid 8431)
2: glibc-locale-2.30-r0 do_package (pid 64889) 99% |#####|
3: systemd-1.243.2-r0 do_compile (pid 92454) 44% |#####|
4: icu-64.2-r0 do_compile - 4m50s (pid 502)
5: libogg-1.3.4-r0 do_configure - 41s (pid 17208)
6: python3-3.7.7-r0 do_install - 27s (pid 17797)
7: openssl-1.1.1g-r0 do_package - 27s (pid 17902)
```

chromium compilation error:

```

ERROR: Task (/home/weidong/linux-yocto-bsp-5.4.24-2.1.0/sources/meta-browser/recipes-browser/chromium/chromium-ozone-wayland_75.0.3770.142.bb:do_configure) failed with exit code
Waiting for 2 running tasks to finish:
0: opencv-4.2.0.lnx-r0 do_compile (pid 87963) 29% |#####
1: arnnn-19.08-r1 do_compile (pid 95679) 15% |#####

```

Compile chromium-ozone-wayland separately.

```

# bitbake chromium-ozone-wayland -c cleansstate
# bitbake chromium-ozone-wayland -c compile

```

```

Error from pkg-config:
#####
Package dri was not found to the pkg-config search path.
Perhaps you should add the directory containing `dri.pc'
to the PKG_CONFIG_PATH environment variable
No package 'dri' found
See //content/gpu/BUILD.gn:128:28, which caused the file to be included.
config += [ "//build/config/linux/dri" ]
#####
WARNING: exit code 1 from a shell command.
ERROR: Logfile of failure stored in: /home/weidong/linux-yocto-bsp-5.4.24-2.1.0/build-wayland/tmp/work/aarch64-mxnn-poky-linux/chromium-ozone-wayland/75.0.3770.142-r0/tmp/log.do_
#####

```

Use the command to solve the problem.

```

# gedit ../sources/meta-imx/meta-sdk/dynamic-layers/browser-layer/recipes-browser/chromium/chromium-ozone-wayland_%.bbappend

```

Add mesa to DEPENDS

```

DEPENDS += "\
    libxkbcommon \
    virtual/egl \
    wayland \
    wayland-native \
    mesa \
"

```

Save and exit.

Continue to compile it.

```

# bitbake chromium-ozone-wayland -c compile

```

```

weidong@ubuntu:~/linux-yocto-bsp-5.4.24-2.1.0/build-wayland$ bitbake chromium-ozone-wayland -c compile
Loading cache: 100% |#####| Time: 0:00:01
Loaded 4671 entries from dependency cache.
NOTE: Resolving any missing task queue dependencies

Build Configuration:
BB_VERSION      = "1.44.0"
BUILD_SYS       = "x86_64-linux"
NATIVELSBSTRING = "ubuntu-18.04"
TARGET_SYS     = "aarch64-poky-linux"
MACHINE        = "linux8mvekv"
DISTRO         = "fsl-linux-wayland"
DISTRO_VERSION = "5.4-zeus"
TUNE_FEATURES  = "aarch64 cortexa53 crc crypto"
TARGET_FPU     = ""
meta
meta-poky      = "HEAD:cba967414370e195d109353e51510bd829aa86c3"
meta-oe
meta-multimedia
meta-python   = "HEAD:9e68d38669a2ad8598e9abf6cd15ee06b523986b"
meta-freescale = "HEAD:c2abd924f020bee1fb1d1b01e7420easda2f8fb"
meta-freescale-3rdparty = "HEAD:dbcc086f52c3c84dbcb80aa89734e4373651b98"
meta-freescale-distro = "HEAD:ca27d12e4964d1336e62bcc68184bfff526c857"
meta-bsp
meta-sdk
meta-ml       = "HEAD:6e7889dfbd9d97b288fa896f5870711e3dacbf1"
meta-browser  = "HEAD:5f305ef0f842b44651efe88787cf9c03bc8b0cb3"
meta-rust     = "HEAD:a012a1027defe28495f06ed52287a82bdd59a610"
meta-gnome
meta-networking
meta-filestems = "HEAD:9e68d38669a2ad8598e9abf6cd15ee06b523986b"
meta-gts      = "HEAD:1b8bcf8cb576d072f435a0177375e54424f07d1c9"
meta-python2  = "HEAD:231c3d74cfcf734c3415e86ea8dd97173d6ced9d"

Installing tasks: 100% |#####| Time: 0:00:01
NOTE: Executing Tasks
NOTE: Setscene tasks completed
NOTE: Tasks Summary: Attempted 1694 tasks of which 1682 didn't need to be rerun and all succeeded.

```

done, continue to compile full image

```

# bitbake imx-image-full

```