

MbedTLS 3.6.5 Linux build with cmake for eosal library.

eosal comes with readily built mbedTLS libraries and headers for 64 bit linux (AMD64). If it is acceptable to use precompiled mbedTLS, there is no need to do anything to enable TLS. This instruction can be used as reference for other hardware or to update mbedTLS version.

The 64 bit .a library files are in /coderoot/eosal/dependencies/linux/linux_generic_amd64_gcc directory.

Corresponding include headers are in /coderoot/eosal/dependencies/linux/include/mbedtls directory.

In Linux, there are three libraries for mbedTLS components: libmbedtls.a libmbedx509.a libmbedcrypto.a. Debug builds end with extra 'd', for example libmbedtls.a is release build while libmbedtlsd.a is debug build. Compile with -lmbedtls -lmbedx509 -lmbedcrypto, order of these libraries is important.

Install build dependencies.

```
sudo apt update  
sudo apt install build-essential cmake git
```

Uncompress source code. I uncompressed mbedtls-3.6.5.tar.bz2 to /home/iocafe/mbedtls/mbedtls-3.6.5 (now this is the MbedTLS source root folder).

Run cmake and build/install with GNU make. I created directory /home/iocafe/mbedtls/build to be used as build directory:

```
cd /home/iocafe/mbedtls  
mkdir build  
cd build  
cmake -DCMAKE_BUILD_TYPE=Release -DUSE_STATIC_MBEDTLS_LIBRARY=On -DUSE_SHARED_MBEDTLS_LIBRARY=Off  
make  
  
cd /home/iocafe/mbedtls  
mkdir buildd  
cd buildd  
cmake -DCMAKE_BUILD_TYPE=Debug -DUSE_STATIC_MBEDTLS_LIBRARY=On -DUSE_SHARED_MBEDTLS_LIBRARY=Off  
make
```

Optional, install to operating system and update library cache. This allows other project to use mbedTLS just built.

```
cd /home/iocafe/mbedtls/build  
sudo make install  
sudo ldconfig
```

Copy libraries to use (for 64 bit PC linux computer)

- Copy libmbedtls.a, libmbedcrypto.a, and libmbedx509.a from /home/iocafe/mbedtls/build/library to /coderoot/eosal/dependencies/linux/linux_generic_amd64_gcc. This is the release build.
- Rename libmbedtls.a, libmbedcrypto.a, and libmbedx509.a in /home/iocafe/mbedtls/buildd/library debug build directory to libmbedtlsd.a, libmbedcryptod.a, and libmbedx509d.a Then copy the renamed files to /coderoot/eosal/dependencies/linux/linux_generic_amd64_gcc.

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