

This has a new binding scheme in building OpenSSL-3.0.0 library with Node.js. OpenSSL-3.0.0 uses a new build system with `Perl` for various supported platforms. See `openssl/Configurations/README` and `openssl/Configurations/README-design.md` in the OpenSSL source for details.

In order to build OpenSSL library without `Perl` in the build of Node.js for various supported platforms, platform dependent files (e.g. asm and header files) are pre-generated and stored into the `config/archs` directory.

- `config/Makefile` and `config/generate_gypi.pl`

`Makefile` has supported platform list and generates and copies platform dependent files (e.g. asm files) into arch directory with `generate_gypi.pl`. Platform dependent gypi files are also created obtaining build information from `configdata.pm` that is generated with `Configure` in the OpenSSL build system.

For Windows, `Configure` generates `makefile` that is only available to `nmake` command. `config/Makefile_VC-WIN32` and `config/Makefile_VC-WIN64A` are made by hand for the use of GNU make. If `makefile` rules or targets are changed in the version up of OpenSSL, they should be also updated.

- gyp and gypi files (`openssl*.{gyp,gypi}`)

`openssl.gyp` has two targets of openssl and openssl-cli referred from `node.gyp`. They include asm and no_asm gypi files with arch dependent gypi according to its build options and platforms. The gyp data which is common with asm and no_asm are stored in `openssl_common.gypi`.

- header files (`config/*.{h,h.tmpl}`)

`bn_conf.h`, `dso_conf.h` and `opensslconf.h` are platform dependent in the OpenSSL sources. They are replaced with `config/*.h.tmpl` files to include the file in the `../../../config/` and referred to each arch file that depends on asm and no-asm option. These headers are generated by the make target `generate_headers`.

Supported architectures for use of ASM

Here is a list of supported architectures for use of ASM in OpenSSL.

--dest-os	--dest-cpu	OpenSSL target arch	CI
aix	ppc	aix-gcc	o
aix	ppc64	aix64-gcc	o
linux	ia32	linux-elf	o
linux	x32	linux-x32	-
linux	x64	linux-x86_64	o
linux	arm	linux-armv4	o
linux	arm64	linux-aarch64	o
linux	ppc	linux-ppc	o
linux	ppc64	linux-ppc64	o
linux	ppc64(*1)	linux-ppc64le	o

linux	s390	linux32-s390x	o
linux	s390x	linux64-s390x	o
mac	ia32	darwin-i386-cc	-
mac	x64	darwin64-x86-cc	o
win	ia32	VC-WIN32	-
win	x64	VC-WIN64A	o
solaris	ia32	solaris-x86-gcc	o
solaris	x64	solaris64-x86_64-gcc	o
freebsd	ia32	BSD-x86	-
freebsd	x64	BSD-x86_64	o
openbsd	ia32	BSD-x86	-
openbsd	x64	BSD-x86_64	-
others	others	linux-elf	-

(*1: This needs to be configured with the variable of node_byteorder: little)

These are listed in [config/Makefile](#). Please refer [config/opensslconf_asm.h](#) for details.

Upgrading OpenSSL

Please refer to [maintaining-openssl](#).