

Maintaining the build files

This document explains how to maintain the build files in the codebase.

Overview

On how to build the Node.js core, see [Building Node.js](#).

There are three main build files that may be directly run when building Node.js:

- `configure` : A Python script that detects system capabilities and runs [GYP](#). It generates `config.gypi` which includes parameters used by GYP to create platform-dependent build files. Its output is usually in one of these formats: Makefile, MSbuild, ninja, or XCode project files (the main Makefile mentioned below is maintained separately by humans). For a detailed guide on this script, see [configure](#).
- `vcbuild.bat` : A Windows Batch Script that locates build tools, provides a subset of the targets available in the [Makefile](#), and a few targets of its own. For a detailed guide on this script, see [vcbuild.bat](#).
- `Makefile` : A Makefile that can be run with GNU Make. It provides a set of targets that build and test the Node.js binary, produce releases and documentation, and interact with the CI to run benchmarks or tests. For a detailed guide on this file, see [Makefile](#).

On Windows `vcbuild.bat` runs [configure](#) before building the Node.js binary, on other systems `configure` must be run manually before running `make` on the `Makefile`.

vcbuild.bat

To see the help text, run `.\vcbuild help`. Update this file when you need to update the build and testing process on Windows.

configure

The `configure` script recognizes many CLI flags for special build formulas. Many are not represented by `vcbuild` shortcuts, and need to be passed either by:

- Calling `python configure --XXX --YYY=PPPP` directly, followed by `vcbuild noprojen`
- Setting `set config_flags=--XXX --YYY=PPPP` before calling `vcbuild`

To see the help text, run `python configure --help`. Update this file when you need to update the configuration process.

Makefile

To see the help text, run `make help`. This file is not generated, it is maintained by humans. This is not usually run on Windows, where [vcbuild.bat](#) is used instead.

Options

- `-j <n>` : number of threads used to build the binary. On the non-CI targets, the parallel tests will take up all the available cores, regardless of this option.