Since I switched from Linux Mint 19.1 to Ubuntu 19.04 on my Dell XPS laptop a while ago, I’ve just been using Brave browser installed from packages. Today I decided to refresh the compiling Brave browser project and get fresh Brave version compiled in Ubuntu.

In mid-July 2019, the Brave browser version I compiled was 0.69.72.
Before We Start

Building a massive project like Brave browser from source is a lot of fun, but comes with a caveat: you need to install all sorts of libraries and build tools required to complete the build process.

Normally you wouldn’t need these installed on your laptop or desktop, so best approach is to build Brave on a virtual machine or dedicated build server.

Prepare Ubuntu 19.04 For Compiling Code

Just like the last time, I’m installing basic packages like this:

greys@xps:~$ sudo apt-get install build-essential libgnome-keyring-dev python-setuptools npm

Install Dependencies Required for Brave Browser

There’s lots of additional libraries that Brave browser might need as part of build process.

Turns out, an excellent script for installing dependencies comes with Brave source code, and it’s Ubuntu friendly so we’re in luck. Just run it with sudo privileges and it will install quite a bunch of packages that are needed and used by the browser:

greys@xps:/storage/proj/brave-browser $ sudo ./src/build/install-build-deps.sh

Finding missing packages...
Packages required: libasound2:i386 libcap2:i386 libelf-
I believe quite a bit of this is installed due to cross-platform compatibility – so the script brings your system to a level capable of compiling Brave browser not only on your Ubuntu OS and platform but also for other hardware systems like 32-bit (i386 ones) and ARM based systems.

I also ended up installing Java (JDK) because it was needed by one of the npm build stages:

greys@xps:~$ sudo apt-get install openjdk-12-jdk-headless

Prepare Lots of Disk Space

In Linux Mint I had the directory of about 67GB, but in my Ubuntu 19.04 experiments this time my Brave browser source code directory went up to as much as 85GB (the size goes down towards the later stage of build process).

Download Brave browser and Chromium code from GitHub

First, we create new directory and go into it, /storage/proj in my case:

greys@xps:~$ mkdir -p /storage/proj
greys@xps:~$ cd /storage/proj

... now we download Brave code from GitHub. As you can see, and this stage it’s a modest codebase:

greys@xps:/storage/proj $ git clone git@github.com:brave/brave-browser.git
Cloning into 'brave-browser'...
remote: Enumerating objects: 48, done.
remote: Counting objects: 100% (48/48), done.
remote: Compressing objects: 100% (35/35), done.
remote: Total 11554 (delta 25), reused 29 (delta 13), pack-
reused 11506
Receiving objects: 100% (11554/11554), 2.26 MiB | 4.73 MiB/s, done.
Resolving deltas: 100% (7852/7852), done.
greys@xps:/storage/proj $ ls
brave-browser
greys@xps:/storage/proj $ du -sh brave-browser/
3.5M brave-browser/

It’s time to **install npm dependencies:**

greys@xps:/storage/proj/brave-browser $ npm install
npm WARN npm npm does not support Node.js v10.15.2
npm WARN npm You should probably upgrade to a newer version of
node as we
npm WARN npm can't make any promises that npm will work with
this version.
npm WARN npm Supported releases of Node.js are the latest
release of 4, 6, 7, 8, 9.
npm WARN npm You can find the latest version at
https://nodejs.org/

npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@1.2.9
(node_modules/fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported
platform for fsevents@1.2.9: wanted
{"os":"darwin","arch":"an$"}    (current:
{"os":"linux","arch":"x64"})

added 499 packages from 347 contributors in 4.119s

And, finally, the biggest download in the procedure – download
Chromium codebase:

greys@xps:/storage/proj/brave-browser $ npm run init
npm WARN npm npm does not support Node.js v10.15.2
npm WARN npm You should probably upgrade to a newer version of
node as we
npm WARN npm can't make any promises that npm will work with this version.
npm WARN npm Supported releases of Node.js are the latest release of 4, 6, 7, 8, 9.
npm WARN npm You can find the latest version at https://nodejs.org/

> brave@0.69.72 init /storage/proj/brave-browser
> node ./scripts/sync.js --init

Brave Browser Sync starting
Updating submodules...
/storage/proj/brave-browser: git submodule sync
/storage/proj/brave-browser: git submodule update --init --recursive
Submodule 'vendor/depot_tools' (https://chromium.googlesource.com/chromium/tools/depot_tools.git) registered for path 'vendor/depot_tools'
Submodule 'vendor/gn-project-generators' (git://github.com/brave/gn-project-generators) registered for path 'vendor/gn-project-generators'
Submodule 'vendor/jinja' (git://github.com/pallets/jinja.git) registered for path 'vendor/jinja'
Cloning into '/storage/proj/brave-browser/vendor/depot_tools'...
Cloning into '/storage/proj/brave-browser/vendor/gn-project-generators'...
Cloning into '/storage/proj/brave-browser/vendor/jinja'...
Submodule path 'vendor/depot_tools': checked out 'e5e44404584674e4407107cf3c1e7e6df1438a56'
Submodule path 'vendor/gn-project-generators': checked out 'b76e14b162aa0ce40f11920ec94bfc12da29e5d0'
Submodule path 'vendor/jinja': checked out '209fd39b2750400d51bf571740fe5ba23008c20e'
/storage/proj/brave-browser: git -C /storage/proj/brave-browser/vendor/depot_tools clean -fxd
/storage/proj/brave-browser: git -C /storage/proj/brave-browser/vendor/depot_tools reset --hard HEAD
HEAD is now at e5e44404 Roll recipe dependencies (trivial).
Done updating submodules...
Syncing Gclient (with reset)
Compile Brave browser in Ubuntu 19.04

Here we go! This took hours on my Dell XPS, so I had to leave the system building Brave browser overnight.

I also had to create additional swap space just so that compilation would work.

There’s about 37894 source code files to be processed/compiled:

greys@xps:/storage/proj/brave-browser $ npm run build Release
> brave@0.69.62 build /storage/proj/brave-browser
> node ./scripts/commands.js build "Release"

Version files do not match!
src/chrome/VERSION: 0.69.63
brave-browser package.json version: 0.69.62
touch original files overridden by chromium_src...
touch original vector icon files overridden by brave/vector_icons...
update branding...
building brave...
/storage/proj/brave-browser/src: gn gen /storage/proj/brave-browser/src/out/Release --args="fieldtrial_testing_like_official_build=true safe_browsing_mode=1 root_extra_deps=["//brave"] is_component_build=false proprietary_codecs=true ffmpeg_branding="Chrome" enable_nacl=false enable_widevine=true
target_cpu="x64" target_apk_base="classic" is_official_build=true is_debug=false dcheck_always_on=false brave_channel="" google_api_key="AIzaSyAH90V94EcZBP5oH7ocmXQrSKgAS" brave_google_api_key="AIzaSyAQfxPjounkh0jODE05ZieffeBv6yft2Q" brave_google_api_endpoint="https://www.googleapis.com/geolocation/v1/geolocate?key="
brave_product_name="Brave" brave_project_name="brave" brave_version_major="0" brave_version_minor="69" brave_version_build="62"
chrome_version_string="76.0.3809.62" chrome_version_major="76" safebrowsing_api_endpoint="safebrowsing.brave.com"
brave_referrals_api_key="" enable_hangout_services_extension=true enable_cdm_host_verification=false
cc_wrapper="/storage/proj/brave-browser/src/brave/script/redirect-cc.py" "
Done. Made 11948 targets from 2064 files in 3505ms
/storage/proj/brave-browser/src: ninja -C /storage/proj/brave-browser/src/out/Release brave -k 1
ninja: Entering directory `/storage/proj/brave-browser/src/out/Release'
[26120/26121] LINK ./chrome
Start the Brave Browser We’ve Just Compiled

That’s the easiest part! Start your freshly compiled browser from the src/out/Release directory:

greys@xps:/storage/proj/brave-browser $ cd src/out/Release
greys@xps:/storage/proj/brave-browser/src/out/Release $ ./brave

About page confirms it’s the new version of the Brave browser, the one that we have just compiled:

That’s it, hope you enjoyed this tutorial! By the way, if you would like to see some of these tutorials as Youtube videos – please let me know!

See Also

- Unix Tutorial projects
- Compiling Brave browser in Linux Mint
- Linux Mint
- Ubuntu 19.04