Because I do not download official IDE, I modify the official source code to rebuilt the build system based on GN + Ninja, and use VSCode to edit the source code and compile it on the command line (or use VSCode's Task to compile).

GN+Ninja build system directory description

```
├── build                                   configuration directory
│   ├── config                                                  global configuration（such as Include header）
│   ├── product                         development configuration configuration
│   └── toolchain                                       toolchain configuration（suah as command）
├── core                                    core component（CORE sources directory）
├── out                                     output directory
│   └── ministar
├── peripheral                              peripheral directory（component）
│   ├── Includes                                peripheral header directory
│   └── Sources                             peripheral sources
├── startup                                 mcu startup code（non-component）
├── system                                  mcu configuration code（component）
└── user                                    user component code
```

Design Flow

1. Download code

```
git clone -b master --depth=1 https://gitee.com/walker2048/gw1-ns-4-c-gn
```

2. Install GN and Ninja tools (Linux only). Download gn and ninja, extract to the directory and put the directory into the environment variables

gn address
https://repo.huaweicloud.com/HarmonyOS/compiler/gn/1523/linux/gn.1523.tar

ninja address
https://repo.huaweicloud.com/harmonyos/compiler/ninja/1.9.0/linux/ninja.1.9.0.tar

3. In the git downloaded project directory, run the build command

```
gn gen out/ministar --root=. --dotfile=build/.gn --args='product = "ministar"' && ninja -C out/ministar
```

4. This will complete the compilation.

If you need to add c source file, refer to the following tutorial.

For example, if you need to add the test.c file in the user directory, modify lines 21~27 of the user/BUILD.gn file, add test.c to it, as shown in the following.

```
static_library("src") {
    sources = [
```

```
3.         "main.c",
4.         "gw1ns4c_it.c",
5.         "test.c",
6.         "//startup/startup_gw1ns4c.S"
7.     ]
8. }
```

If you need to add additional components, you can refer to the system component configuration and copy the component source code directory to the root directory. Also copy the BUILD.gn file of system to this component, and modify line 3 static_library("system"); change system to the component directory name (case consistent), and change line 5 to the c file name that needs to be compiled. Finally, change line 4 of the user/BUILD.gn (written by component name), sorted from the top and written from left to right.

If you need to add a global reference directory, modify lines 20~27 of build/config/BUILD.gn and add the directory to it.