一、最新版本 eclipse 的下载和解压安装

当前最新的 eclipse 文件是 eclipse-cpp-2019-12-R-win32-x86_64.zip,下载后解压即可运行,如图 1-1 所示。 有些电脑启动 eclipse 比较快,看不到进度条。



图 1-1 原始 eclipse 启动界面

二、在 eclipse 中手动集成 GCC 编译器工具链

原始的 eclipse 由于没有集成任何一个 stm32 编译器,需要手动安装。首先安装鼎鼎大名的 System Workbench (Ac6), 该编译器支持 ST 最新的 MP1 系列,同时支持标准库和 HAL 库,是意法半导体最早的合作伙伴。 官网也提供了 System Workbench (Ac6)编译器的完整安装包,但由于我们还需要安装其它调试插件,就把 System Workbench 编译器当作一个插件来安装了。在 eclipse 更新管理器中增加如下两个插件网址:

System Workbench for STM32

http://ac6-tools.com/Eclipse-updates/org.openstm32.system-workbench.update-site-v2

GNU MCU Eclipse Plug-ins

http://gnu-mcu-eclipse.netlify.com/v4-neon-updates/

安装完毕, eclipse 就可以支持两种 GCC 工具链,由于 System Workbench for STM32 可以导入 STM32CubeMX 生成的 工程,所以我们一般使用这个工具链建立工程。



三、调试器插件的关键参数设置

该部分是重点,为了能够使用 J-Link 仿真器,我们在 eclipse 工程的调试界面做如下设置:

首先要填写正确的 Device name,如 STM32L433CB、STM32H743ZI 等。

其次在 GDB Client Setup\Executable name 参数框填写: \${openstm32_compiler_path}\arm-none-eabi-gdb.exe

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四、STM32CubeMX 设置示例

STM32CubeMX 对示例工程 MCU 的设置如下



按照惯例,给出一段简单的点灯示例代码。

uint8_t result = 0;

```
HAL_GPIO_WritePin(GPIOB, 1 << OUL, GPIO_PIN_RESET);
HAL_GPIO_WritePin(GPIOB, 1 << OUL, GPIO_PIN_SET);
for(;;) {
    HAL_GPIO_TogglePin(GPIOB, 1 << OUL);
    if (result) break;
}
```

五、STM32H743ZI 调试截图

| 🐔 🛧 🔳 🎋 Debug 🗸 🖸 H743 Debug | * 🔅 : 🗂 ▼ 🖩 🔞 📾 🖳 🌜 🍪 🌬 🕨 🛎 14 🌫 👁 🕼 🕨 3 🖏 🖓 😒 3 🐜 4 🖉 4 🖓 5 🖓 4 🖓 5 🖓 5 🖓 5 🥵 5 🥵 5 🥵 5 🥵 5 🥵 5 🥵 5 🥵 5 🥵 5 🥵 5 🥵 5 🤅 5 𝔅 | 1 🗸 🖌 |
|--|---|-------|
| 🎋 Debug 🕴 🎦 Project Explorer 👘 🕹 🛛 🆓 😘 📔 🚍 🧏 🍽 | 🗆 🖻 *main.c 🛛 | |
| TE H743 Debug [GDB SEGGER J-Link Debugging] | | ^ |
| ∽ 🎲 H743.elf | 115 /* Configure the system clock */ | |
| 🗸 🧬 Thread #1 57005 (Suspended : Step) | 116 SystemClock_Contig(); | |
| main() at main.c:125 0x800091e | 118 /* USER CODE BEGIN SysInit */ | |
| JLinkGDBServerCL.exe | 119 120 /* INSER CODE END SurTrit */ | |
| 📕 arm-none-eabi-gdb.exe | 120 / OSER CODE END SYSTILE / | |
| 📕 Semihosting and SWV | 122 /* Initialize all configured peripherals */ | |
| | 123 MX GPIO Init(); | - |
| | <pre>> 125 MX_USART3_UART_Init();</pre> | |
| | 126 MX_USB_OTG_FS_PCD_Init(); | |
| | 127 /* USER CODE BEGIN 2 */ | |
| | 129 /* USER CODE END 2 */ | |
| | | |
| | 131 / INTINITE LOOP -/ 132 /* USER CODE BEGIN WHILE */ | |
| | 133 while (1) | |
| | 134 { 135 /* IISER CODE END WHILE */ | |
| | 136 | |
| | 137 /* USER CODE BEGIN 3 */ | |
| | 138 } 139 /* LISER CODE END 3 */ | |
| | 140 } | |
| | 141 | ~ |
| | | > |
| | 🕒 Console 🕴 🔡 Registers 📳 Problems 🜔 Executables 🖼 Debugger Console 👖 Memory | |
| | H743 Debug [GDB SEGGER J-Link Debugging] JLinkGDBServerCL.exe | |
| | Nemoving Dreakpoint @ dudress 0x000000000, size = 2 Performing single stem | |
| | Breakpoint reached @ address 0x08000C60 | |
| | Reading all registers | |
| | Read 4 bytes @ address 0x080000L60 (Data = 0x20030510) Read 4 bytes @ address 0x08000012 (Data = 0xF91F7FF) | |
| | Read 2 bytes 🖗 address 0x08000912 (Data = 0xF7FF) | |
| | Setting breakpoint [0] address 0x08000912, Size = 2, BPHandle = 0x0009 Starting target (DU | |
| | Breakpoint reached 🗈 address 0x08000912 | |
| | Reading all registers | |
| | Read 4 bytes @ address 0x08000912 (Data = 0xFF91F7FF) Removing breaknoit @ address 0x8000912 size = 2 | |
| | Performing single step | |
| | Breakpoint reached 📵 address 0x08000838 | |
| | Reading all registers | |