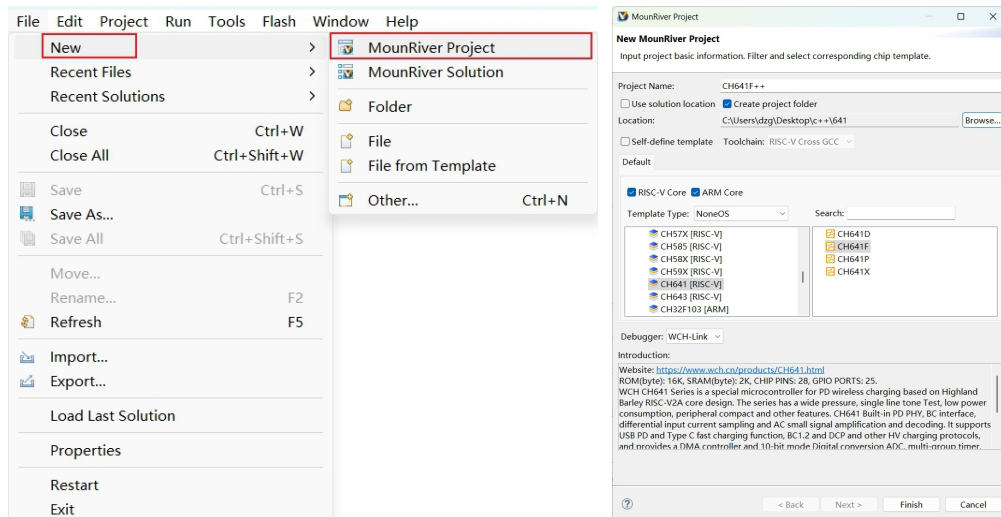


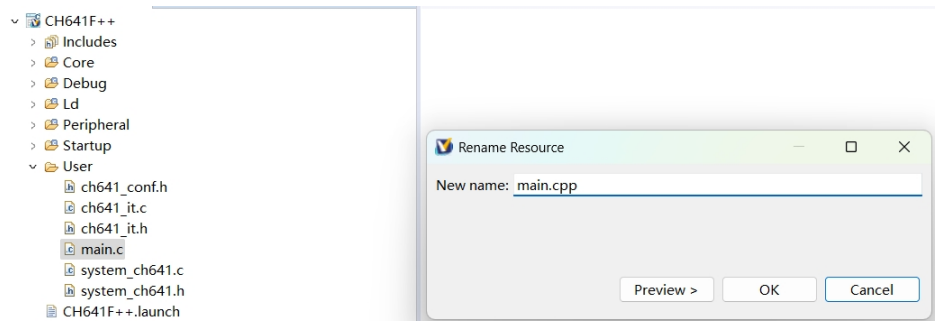
## Create a C++ project based on MRS

Create a C++ project based on MRS . First build a main.c project , and then modifying the configuration so that the .cpp file calls the C++ compiler to compile it. The detailed steps are as follows.

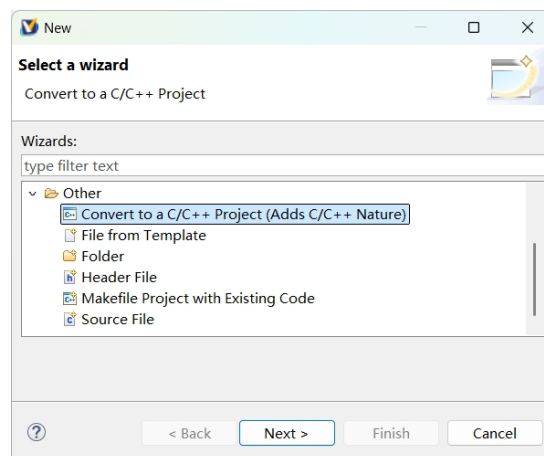
1. Normally create a project based on .C



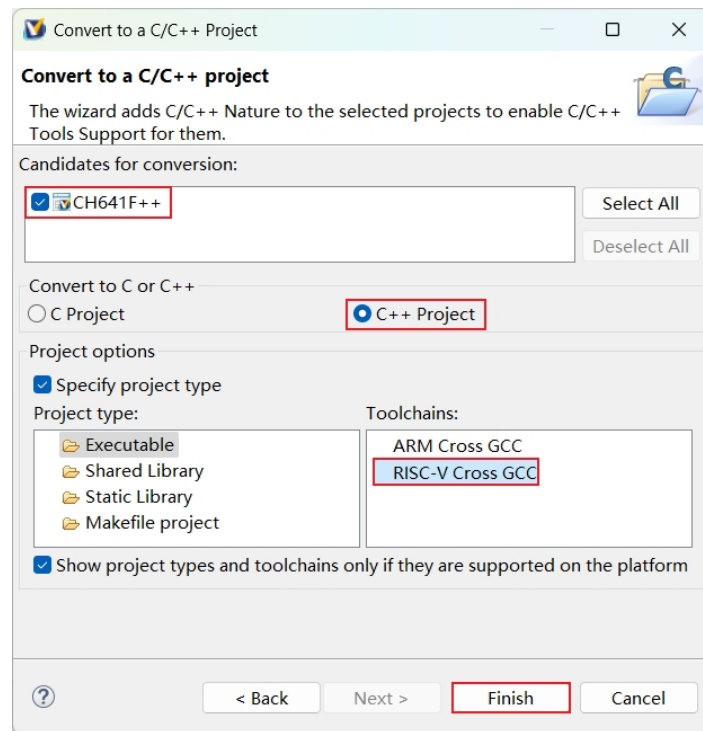
2. Make the main.c file into main.cpp by renaming it. Of course, you can also add a new .cpp by adding a File.



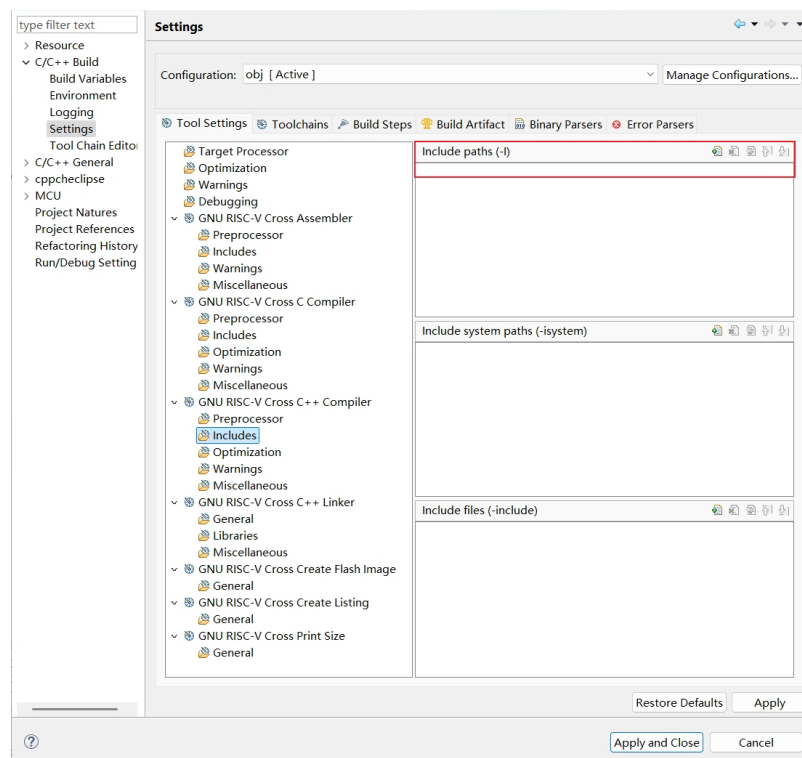
3. Right-click the project, new->other, select it according to the following figure, and then click Next.



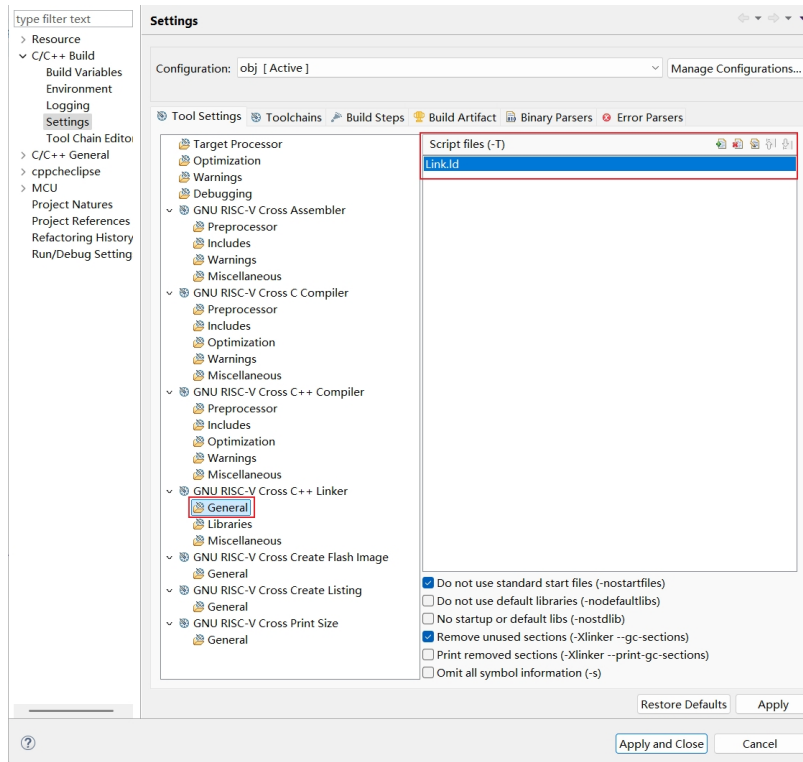
4. Configure as shown below



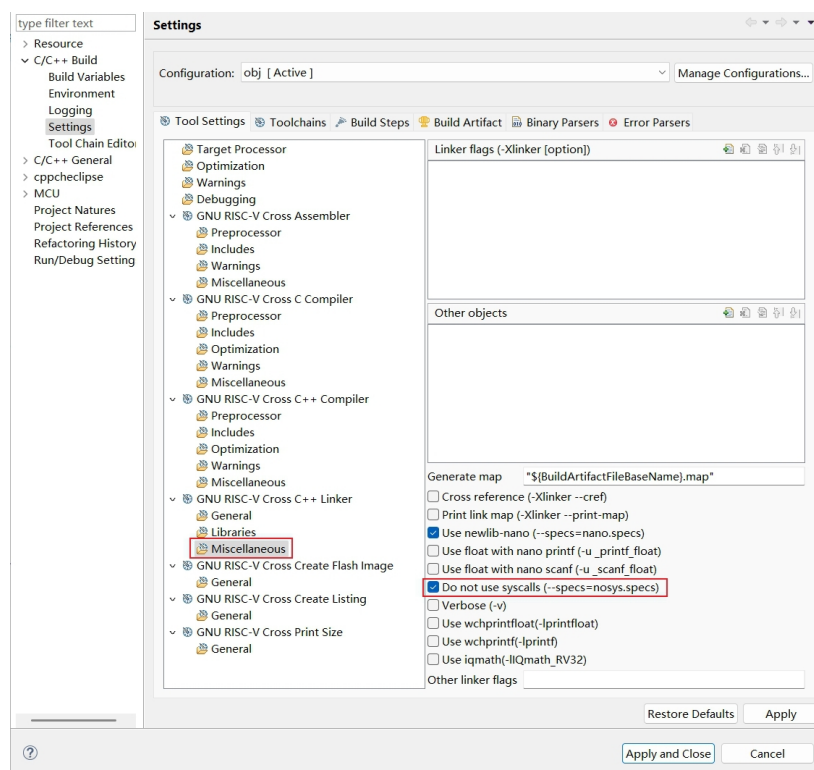
5. The original settings will become the default and need to be added again.



Add the header file path in the above image.



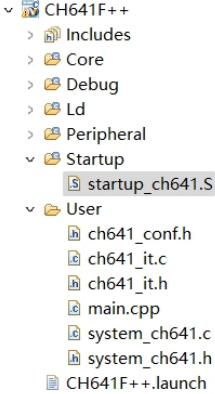
Add the link script path in the above figure.



The above figure uses the default function, if the original project uses the library, the library also needs to be added again after conversion.

6. Add the C++ initialization function before the main function is called in the startup file.

```
la a0, __libc_fini_array
call atexit
call __libc_init_array
```



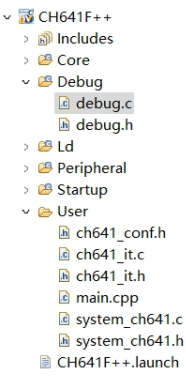
```

171    li t0, 0x1880
172    csrw mstatus, t0
173 /* Enable interrupt nesting and hardware stack */
174    li t0, 0x3
175    csrw 0x804, t0
176 /* Configure the interrupt vector table recognition mode */
177    la t0, _start
178    ori t0, t0, 3
179    csrw mtvec, t0
180
181    la a0, __libc_fini_array
182    call atexit
183    call __libc_init_array
184
185    jal SystemInit
186    la t0, main
187    csrw mepc, t0
188    mret
189

```

7. Two more empty functions are needed and must be declared in files with a .c suffix.

```
void _fini() {}
void _init() {}
```



```

232  * @brief Change the spatial position of data segment.
233  *
234  * @return size: Data length
235  */
236 __attribute__((used))
237 void *_sbrk(ptrdiff_t incr)
238 {
239     extern char _end[];
240     extern char _heap_end[];
241     static char *curbrk = _end;
242
243     if ((curbrk + incr < _end) || (curbrk + incr > _heap_end))
244         return NULL - 1;
245
246     curbrk += incr;
247     return curbrk - incr;
248 }
249
250 void _fini() {}
251 void _init() {}
252

```

8. At this point the project file environment has been configured, the files with the .cpp suffix will call the C++ compiler to compile.