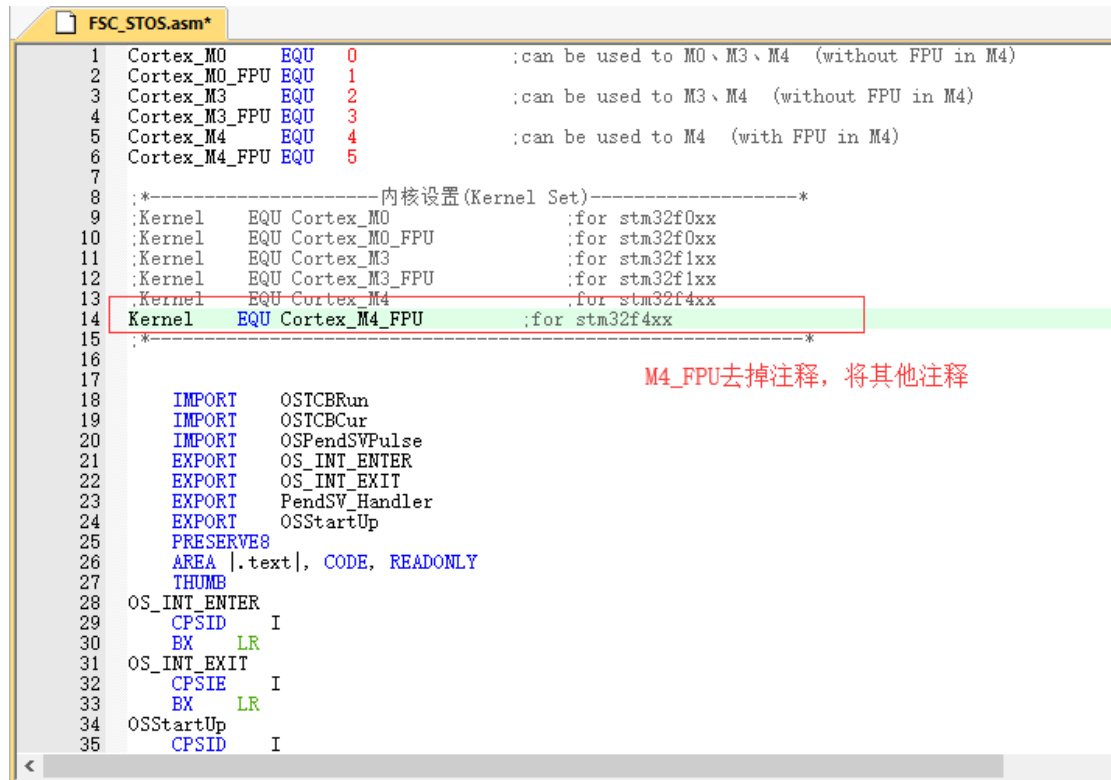


# FSC\_STOS STM32F4\_FPU\_support 版本移植教程

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一、三步设置。(具体参考支持 FPU 版工程)

(1) ASM 文件设置



```
1 Cortex_M0 EQU 0 ;can be used to M0、M3、M4 (without FPU in M4)
2 Cortex_M0_FPU EQU 1
3 Cortex_M3 EQU 2 ;can be used to M3、M4 (without FPU in M4)
4 Cortex_M3_FPU EQU 3
5 Cortex_M4 EQU 4 ;can be used to M4 (with FPU in M4)
6 Cortex_M4_FPU EQU 5
7
8 ;-----内核设置(Kernel Set)-----*
9 :Kernel EQU Cortex_M0 ;for stm32f0xx
10 :Kernel EQU Cortex_M0_FPU ;for stm32f0xx
11 :Kernel EQU Cortex_M3 ;for stm32f1xx
12 :Kernel EQU Cortex_M3_FPU ;for stm32f1xx
13 :Kernel EQU Cortex_M4 ;for stm32f4xx
14 Kernel EQU Cortex_M4_FPU ;for stm32f4xx
15 ;-----*
16
17
18 IMPORT OSTCRun
19 IMPORT OSTCBCur
20 IMPORT OSPendSVFulse
21 EXPORT OS_INT_ENTER
22 EXPORT OS_INT_EXIT
23 EXPORT PendSV_Handler
24 EXPORT OSStartUp
25 PRESERVE8
26 AREA |.text|, CODE, READONLY
27 THUMB
28 OS_INT_ENTER
29 CPSID I
30 BX LR
31 OS_INT_EXIT
32 CPSIE I
33 BX LR
34 OSStartUp
35 CPSID I
```

M4\_FPU去掉注释，将其他注释

(2) 修改启动文件。

将 STM32F4xx\_FPU\_support 启动文件修改内容.txt 里面的文本复制到启动文件中替换掉原来的函数。

作用：启动 FPU。

```

182
183
184
185 : Reset_Handler
186 Reset_Handler PROC
187 EXPORT Reset_Handler [WEAK]
188 IMPORT SystemInit
189 IMPORT __main
190
191 ; IF {FPU} != "SoftVFP"
192
193 LDR.W R0, =0xE000ED88 ; Enable Floating Point Support at reset for FPU
194 LDR R1, [R0] ; Load address of CPACR register
195 ORR R1, R1, #(0xF << 20) ; Set bits 20-23 to enable CP10 and CP11 coprocessors
196 STR R1, [R0] ; Write back the modified CPACR value
197 DSB ; Wait for store to complete
198
199
200
201 ; Disable automatic FP register content
202 ; Disable lazy context switch
203 LDR.W R0, =0xE000EF34 ; Load address to FPCR register
204 LDR R1, [R0]
205 AND R1, R1, #(0x3FFFFFFF) ; Clear the LSPEN and ASPEN bits
206 STR R1, [R0]
207 ISB ; Reset pipeline now the FPU is enabled
208 ; ENDIF
209
210 LDR R0, =SystemInit
211 BLX R0
212 LDR R0, =__main
213 BX R0
214 ENDP
215
216 ; Dummy Exception Handlers (infinite loops which can be modified)
217

```

(3) 修改 MDK 设置。

Options for Target 'USART'

Device: STM32F429BITx

Xtal (MHz): 12.0

Operating system: None

System Viewer File: STM32F429x.svd

☐ Use Custom File

Code Generation

ARM Compiler: Use default compiler version

☐ Use Cross-Module Optimization

☒ Use MicroLIB ☐ Big Endian

Floating Point Hardware: Use Single Precision

Read/Only Memory Areas

default	off-chip	Start	Size	Startup
<input type="checkbox"/>	ROM1:			<input type="radio"/>
<input type="checkbox"/>	ROM2:			<input type="radio"/>
<input type="checkbox"/>	ROM3:			<input type="radio"/>
on-chip				
<input checked="" type="checkbox"/>	IROM1:	0x8000000	0x200000	<input checked="" type="radio"/>
<input type="checkbox"/>	IROM2:			<input type="radio"/>

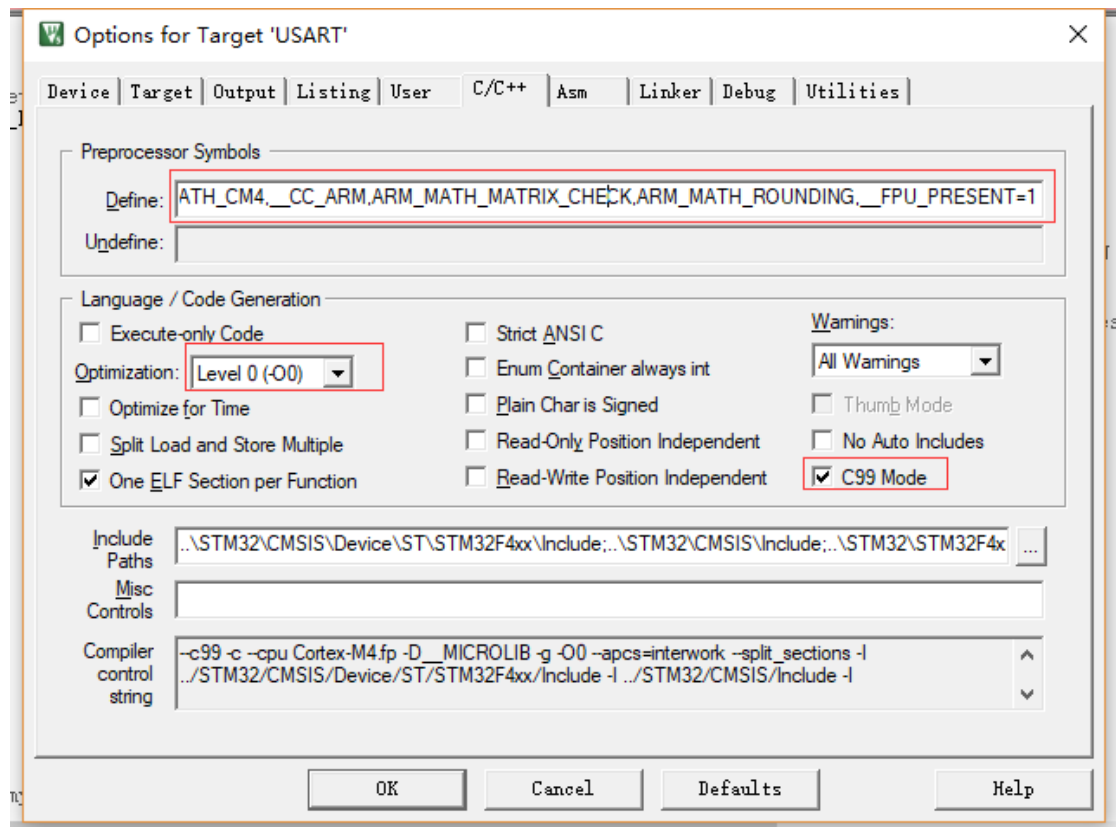
Read/Write Memory Areas

default	off-chip	Start	Size	NoInit
<input type="checkbox"/>	RAM1:			<input type="checkbox"/>
<input type="checkbox"/>	RAM2:			<input type="checkbox"/>
<input type="checkbox"/>	RAM3:			<input type="checkbox"/>
on-chip				
<input checked="" type="checkbox"/>	IRAM1:	0x20000000	0x30000	<input type="checkbox"/>
<input type="checkbox"/>	IRAM2:	0x10000000	0x10000	<input type="checkbox"/>

OK Cancel Defaults Help

请复制以下文本：(注意：USE\_STDPERIPH\_DRIVER,STM32F429\_439xx 不需要复制，因为不同芯片对应的宏不同，复制后面的即可)

USE\_STDPERIPH\_DRIVER,STM32F429\_439xx,ARM\_MATH\_CM4,\_\_CC\_ARM,ARM\_MATH\_MATRIX\_CHECK,ARM\_MATH\_ROUNDING,\_\_FPU\_PRESENT=1



(3)修改完成。