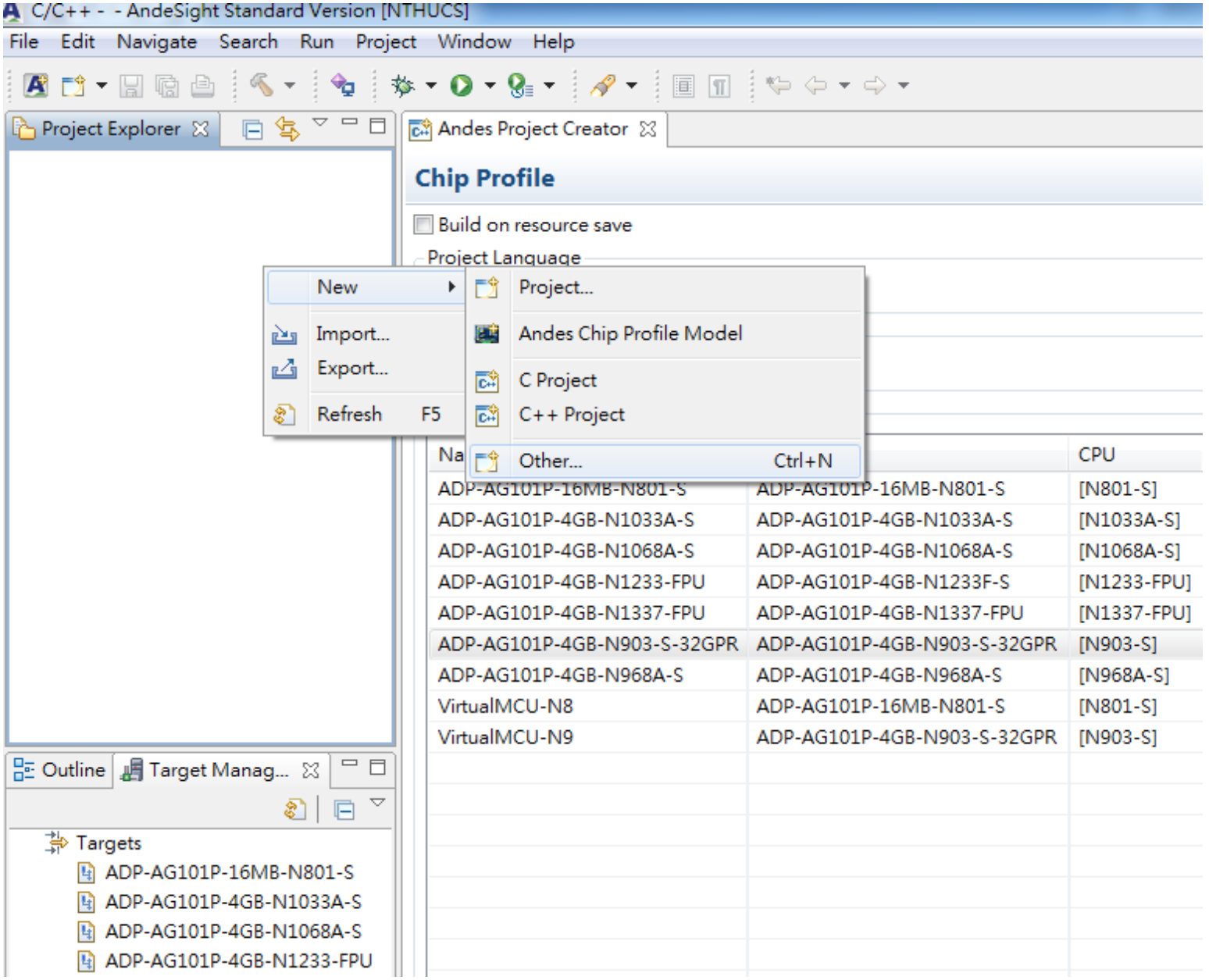
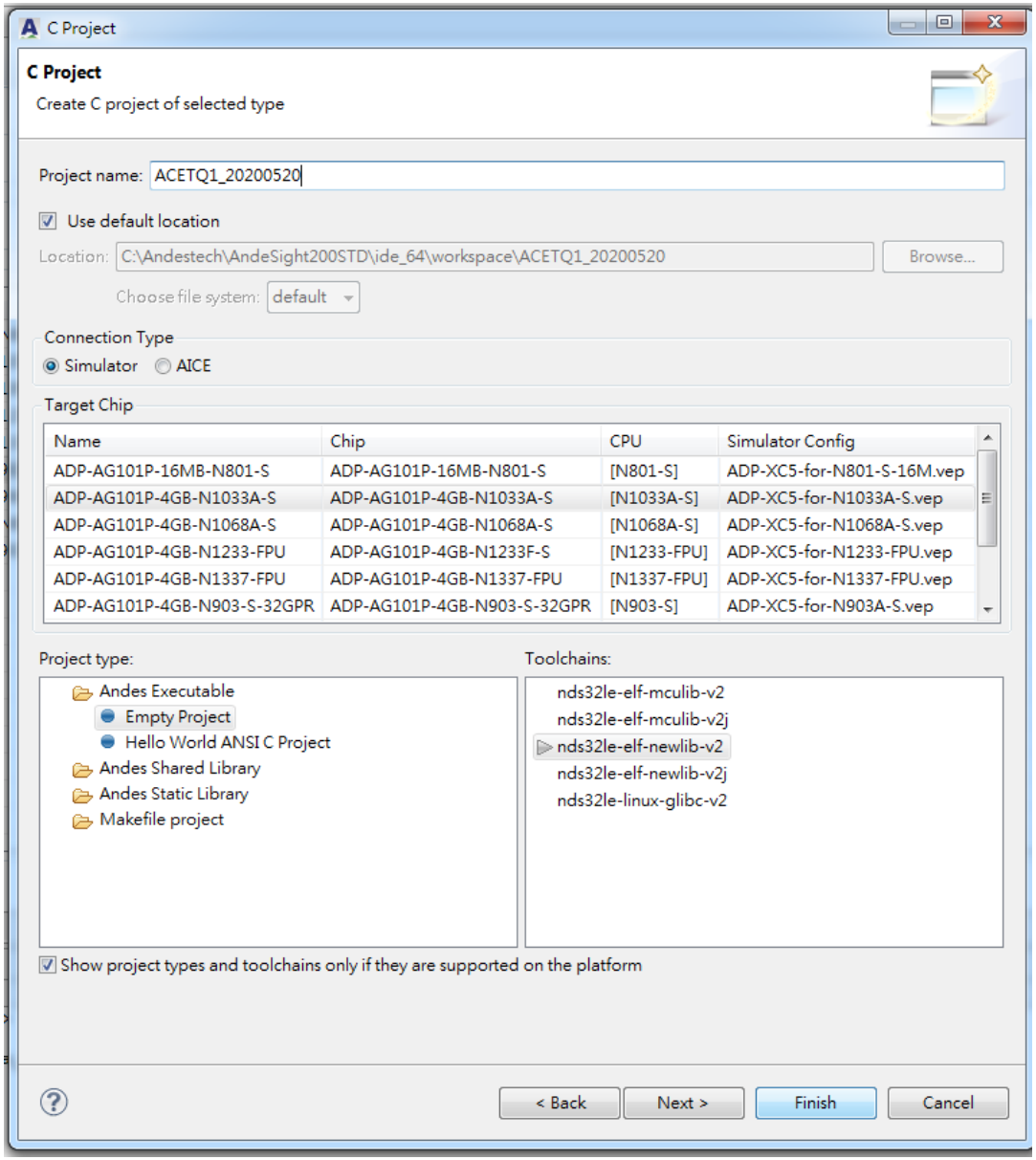
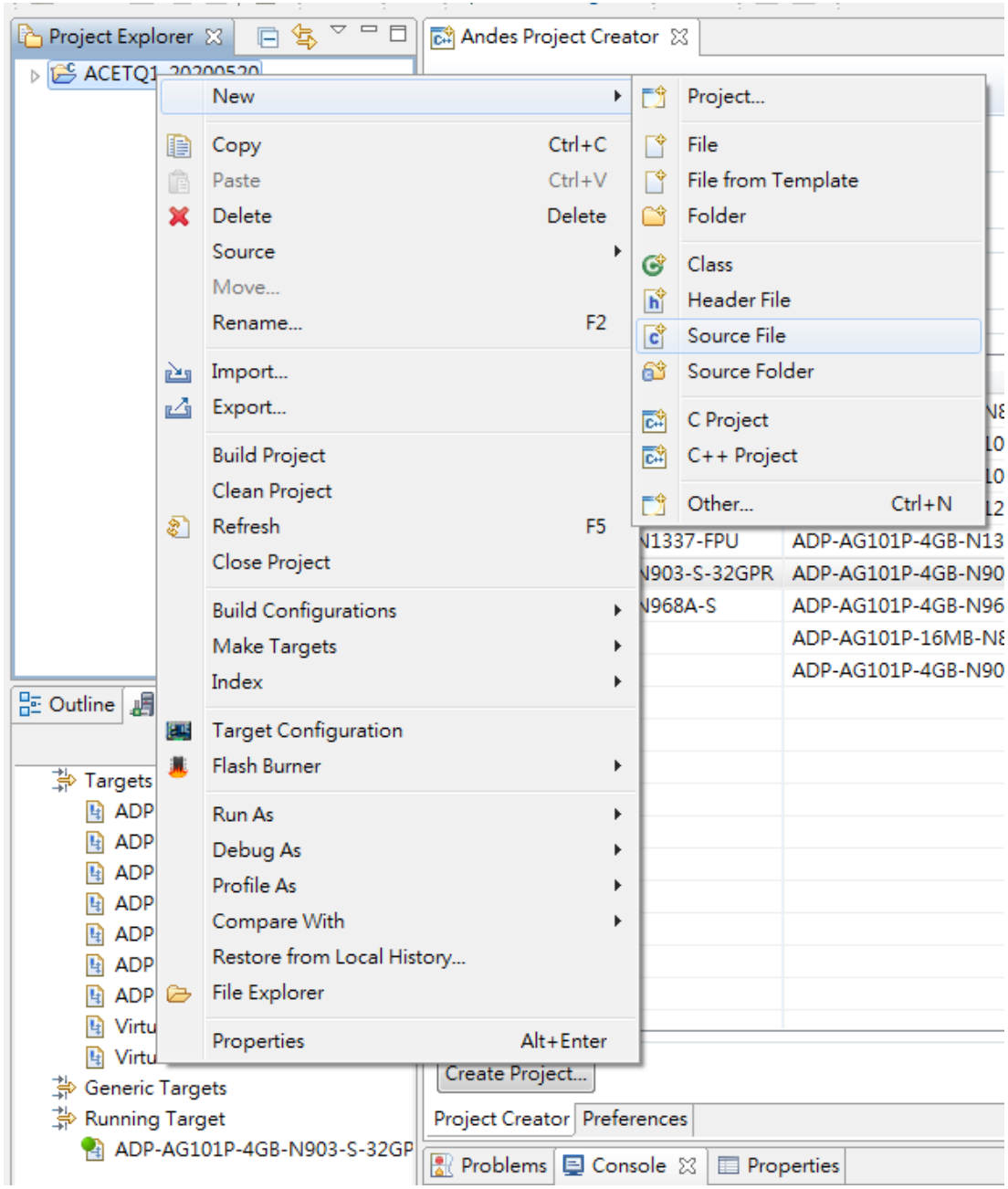
Andes 乙級證照
108考題練習

Q1

考題類型	☐ Non-OS ☐ Linux
實作平台	☐ ADP-XC5FF676 ☐ ADPAG102-UP ☐ ADP-WT95F064 ■ VEP (AndeSight™ STD v2.0)
環境設定	1. PC 主機：Host OS - Microsoft Windows XP 2. Andes/AndeSight V2.0 Toolchains
實作內容	在 AndeSight™整合開發環境撰寫程式，使用 ESL 環境下的 VEP(Virtual Evaluation Platform)功能，設定屬性 Target Chip 使用 ADP-AG101-4GB-N1033-S; Tool Chain 必須用 nds32le-elf-newlib-v2 (1) 實現五次” My name is James 等字 ” 文字顯示；(2) 產生最小容量的 bin 檔案。
注意事項	1. 請將作答所產生之所有檔案儲存於資料夾 Q1\Ans 內。 2. 可依需要參考或使用 Q1\ 內各子資料夾預存之程式碼或資料。


C/C++ - - AndeSight Standard Version [NTHUCS]
File Edit Navigate Search Run Project Window Help
Project Explorer
Andes Project Creator
Chip Profile
Build on resource save
Project Language
New
Import...
Export...
Refresh F5
Project...
Andes Chip Profile Model
C Project
C++ Project
Other... Ctrl+N
CPU
ADP-AG101P-16MB-N801-S [N801-S]
ADP-AG101P-4GB-N1033A-S [N1033A-S]
ADP-AG101P-4GB-N1068A-S [N1068A-S]
ADP-AG101P-4GB-N1233-FPU ADP-AG101P-4GB-N1233F-S [N1233-FPU]
ADP-AG101P-4GB-N1337-FPU [N1337-FPU]
ADP-AG101P-4GB-N903-S-32GPR [N903-S]
ADP-AG101P-4GB-N968A-S [N968A-S]
VirtualMCU-N8 ADP-AG101P-16MB-N801-S [N801-S]
VirtualMCU-N9 ADP-AG101P-4GB-N903-S-32GPR [N903-S]
Outline
Target Manag...
Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU

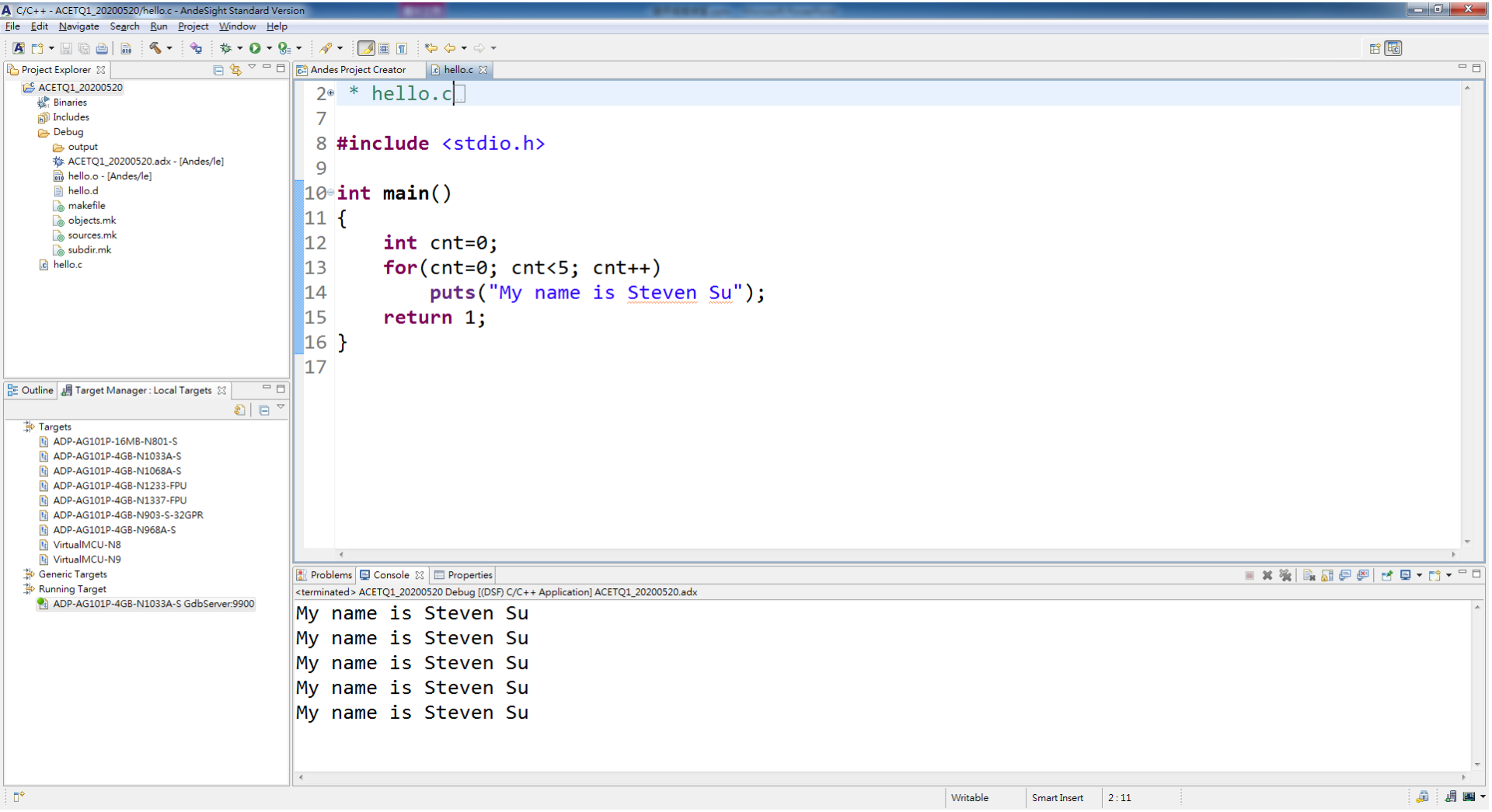

C Project
C Project
Create C project of selected type
Project name: ACETQ1_20200520
Use default location
Location: C:\Andestech\AndeSight200STD\ide_64\workspace\ACETQ1_20200520
Browse...
Choose file system: default
Connection Type
Simulator
AICE
Target Chip
Name
Chip
CPU
Simulator Config
ADP-AG101P-16MB-N801-S
ADP-AG101P-16MB-N801-S
[N801-S]
ADP-XC5-for-N801-S-16M.vep
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1033A-S
[N1033A-S]
ADP-XC5-for-N1033A-S.vep
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1068A-S
[N1068A-S]
ADP-XC5-for-N1068A-S.vep
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1233F-S
[N1233-FPU]
ADP-XC5-for-N1233-FPU.vep
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N1337-FPU
[N1337-FPU]
ADP-XC5-for-N1337-FPU.vep
ADP-AG101P-4GB-N903-S-32GPR
ADP-AG101P-4GB-N903-S-32GPR
[N903-S]
ADP-XC5-for-N903A-S.vep
Project type:
Andes Executable
Empty Project
Hello World ANSI C Project
Andes Shared Library
Andes Static Library
Makefile project
Toolchains:
nds32le-elf-mculib-v2
nds32le-elf-mculib-v2j
nds32le-elf-newlib-v2
nds32le-elf-newlib-v2j
nds32le-linux-glibc-v2
Show project types and toolchains only if they are supported on the platform
< Back
Next >
Finish
Cancel

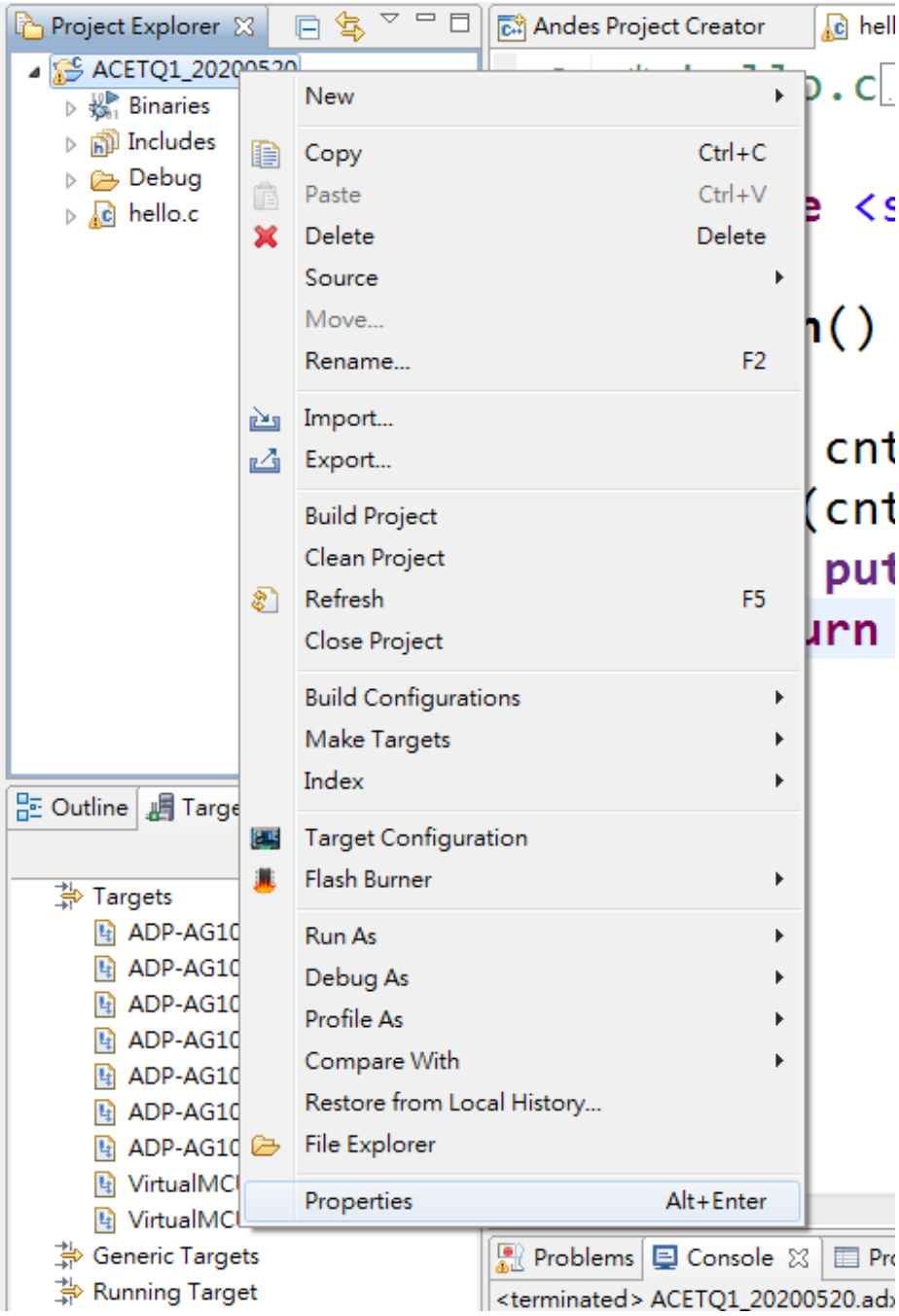

Project Explorer
Andes Project Creator
New
Copy Ctrl+C
Paste Ctrl+V
Delete Delete
Source
Move...
Rename... F2
Import...
Export...
Build Project
Clean Project
Refresh F5
Close Project
Build Configurations
Make Targets
Index
Target Configuration
Flash Burner
Run As
Debug As
Profile As
Compare With
Restore from Local History...
File Explorer
Properties Alt+Enter
Project...
File
File from Template
Folder
Class
Header File
Source File
Source Folder
C Project
C++ Project
Other... Ctrl+N
Outline
Targets
Generic Targets
Running Target
ADP-AG101P-4GB-N903-S-32GP
Create Project...
Project Creator
Preferences
Problems
Console
Properties

```
 * hello.c

#include <stdio.h>

int main()
{
    int cnt=0;
    for(cnt=0; cnt<5; cnt++){
        puts("My name is Steven Su");
    }
}
```


C/C++ - ACETQ1_20200520/hello.c - AndeSight Standard Version
File Edit Navigate Search Run Project Window Help
Project Explorer
ACETQ1_20200520
Binaries
Includes
Debug
output
ACETQ1_20200520.adx - [Andes/le]
hello.o - [Andes/le]
hello.d
makefile
objects.mk
sources.mk
subdir.mk
hello.c
Outline
Target Manager : Local Targets
Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N903-S-32GPR
ADP-AG101P-4GB-N968A-S
VirtualMCU-N8
VirtualMCU-N9
Generic Targets
Running Target
ADP-AG101P-4GB-N1033A-S GdbServer:9900
Andes Project Creator
hello.c
2 * hello.c
7
8 #include <stdio.h>
9
10 int main()
11 {
12 int cnt=0;
13 for(cnt=0; cnt<5; cnt++)
14 puts("My name is Steven Su");
15 return 1;
16 }
17
Problems
Console
Properties
<terminated> ACETQ1_20200520 Debug [(DSF) C/C++ Application] ACETQ1_20200520.adx
My name is Steven Su
My name is Steven Su
My name is Steven Su
My name is Steven Su
My name is Steven Su
Writable
Smart Insert
2 : 11


Project Explorer
ACETQ1_20200520
Binaries
Includes
Debug
hello.c
Andes Project Creator
New
Copy Ctrl+C
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Delete Delete
Source
Move...
Rename... F2
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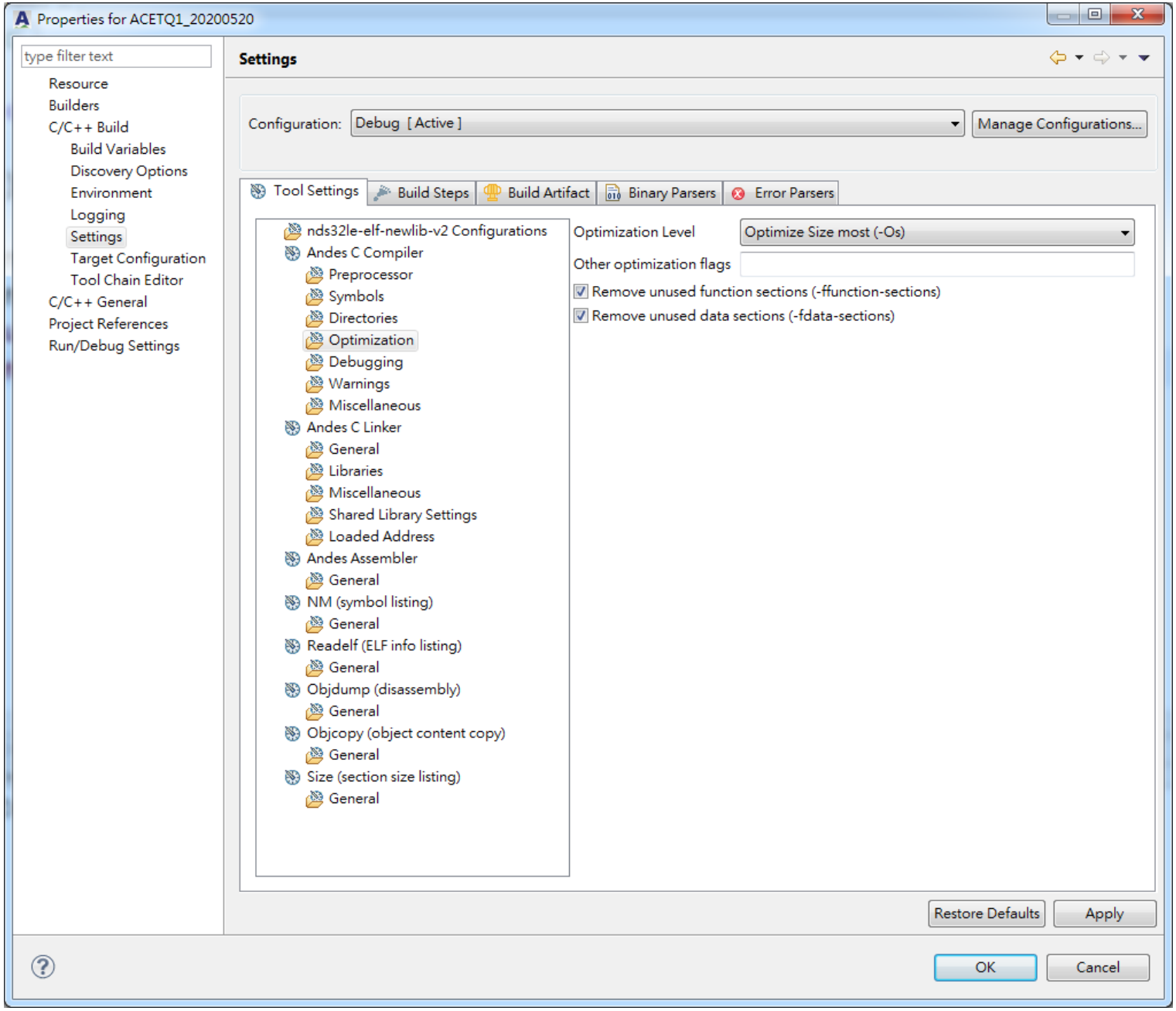
Run As
Debug As
Profile As
Compare With
Restore from Local History...
File Explorer
Properties Alt+Enter
Outline
Targets
Generic Targets
Running Target
Problems
Console
<terminated> ACETQ1_20200520.ad


Properties for ACETQ1_20200520
type filter text
Resource
Builders
C/C++ Build
Build Variables
Discovery Options
Environment
Logging
Settings
Target Configuration
Tool Chain Editor
C/C++ General
Project References
Run/Debug Settings
Settings
Configuration: Debug [Active]
Manage Configurations...
Tool Settings
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Build Artifact
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Error Parsers
nds32le-elf-newlib-v2 Configurations
Andes C Compiler
Preprocessor
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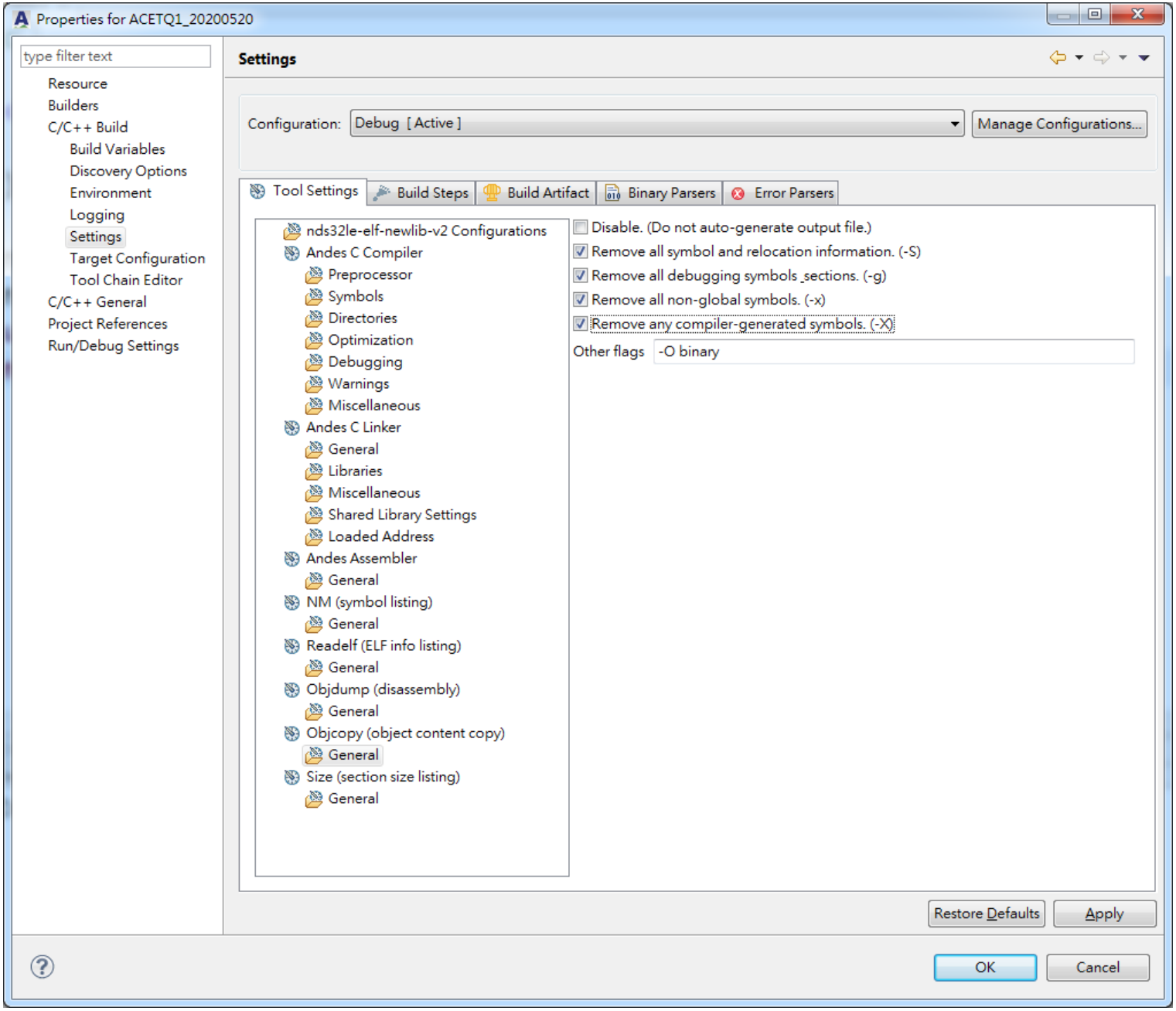
Directories
Optimization
Debugging
Warnings
Miscellaneous
Andes C Linker
General
Libraries
Miscellaneous
Shared Library Settings
Loaded Address
Andes Assembler
General
NM (symbol listing)
General
Readelf (ELF info listing)
General
Objdump (disassembly)
General
Objcopy (object content copy)
General
Size (section size listing)
General
Optimization Level
Optimize Size most (-Os)
Other optimization flags
Remove unused function sections (-ffunction-sections)
Remove unused data sections (-fdata-sections)
Restore Defaults
Apply
OK
Cancel


Properties for ACETQ1_20200520
type filter text
Resource
Builders
C/C++ Build
Build Variables
Discovery Options
Environment
Logging
Settings
Target Configuration
Tool Chain Editor
C/C++ General
Project References
Run/Debug Settings
Settings
Configuration: Debug [Active]
Manage Configurations...
Tool Settings
Build Steps
Build Artifact
Binary Parsers
Error Parsers
nds32le-elf-newlib-v2 Configurations
Andes C Compiler
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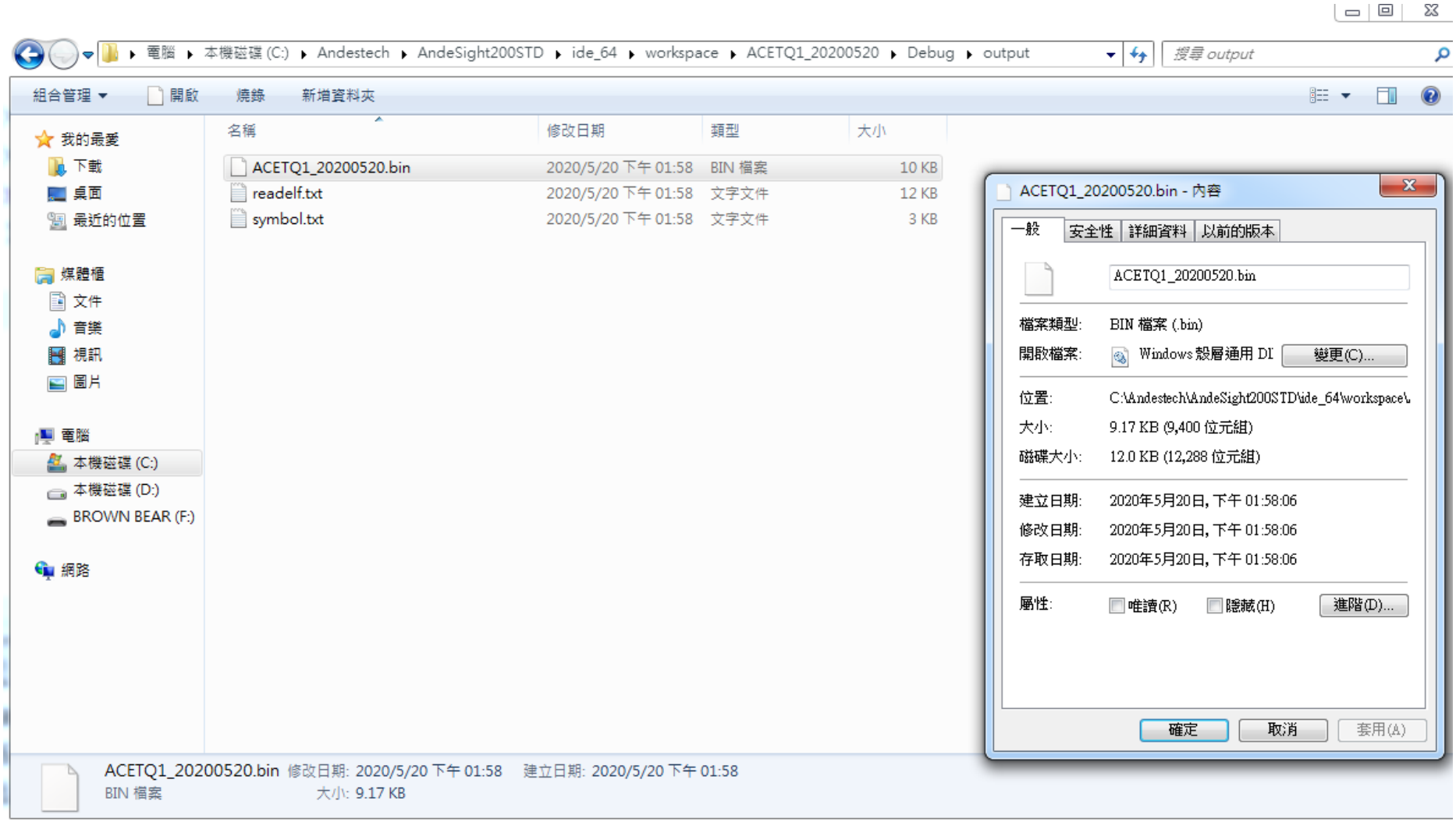
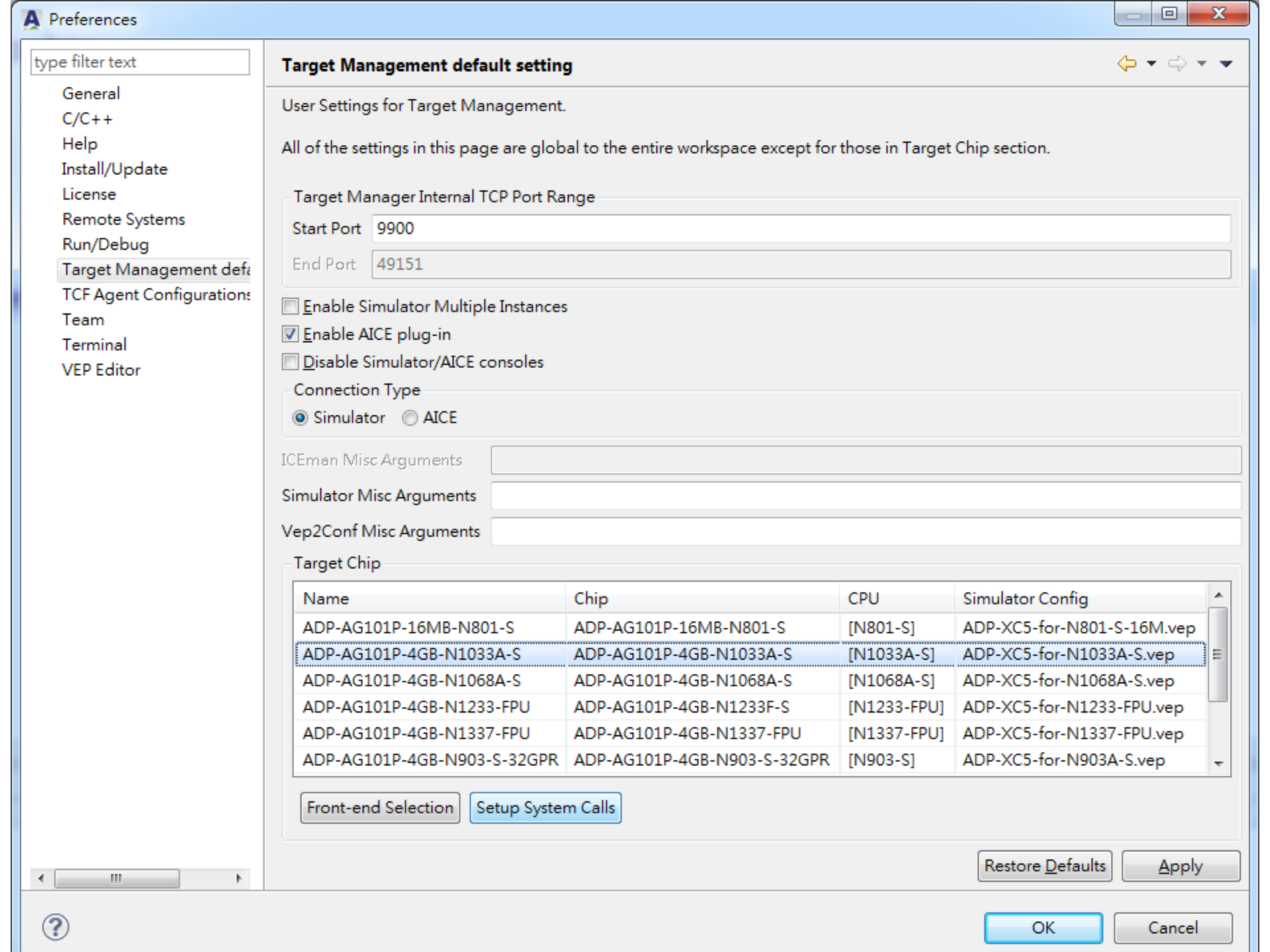
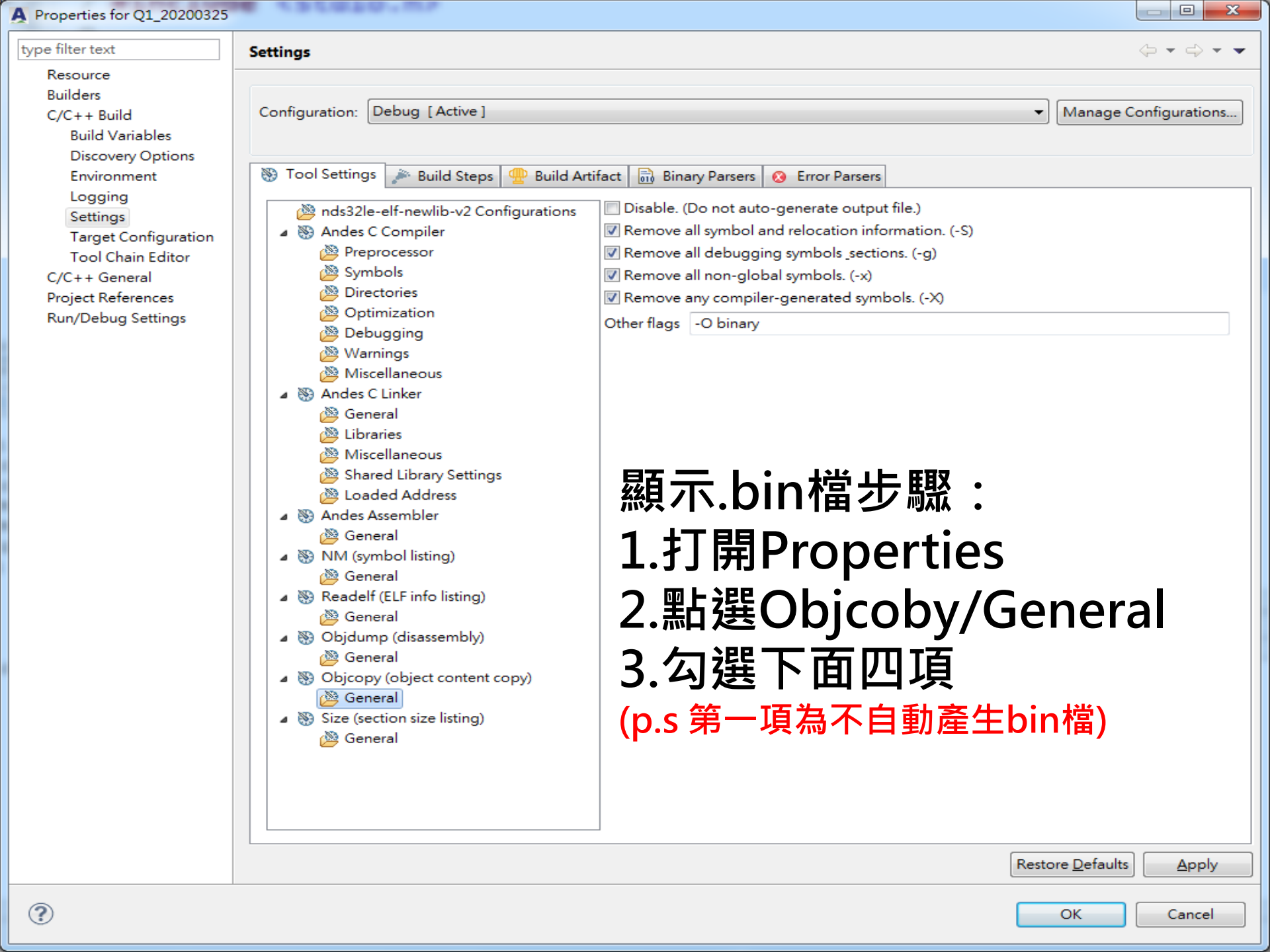
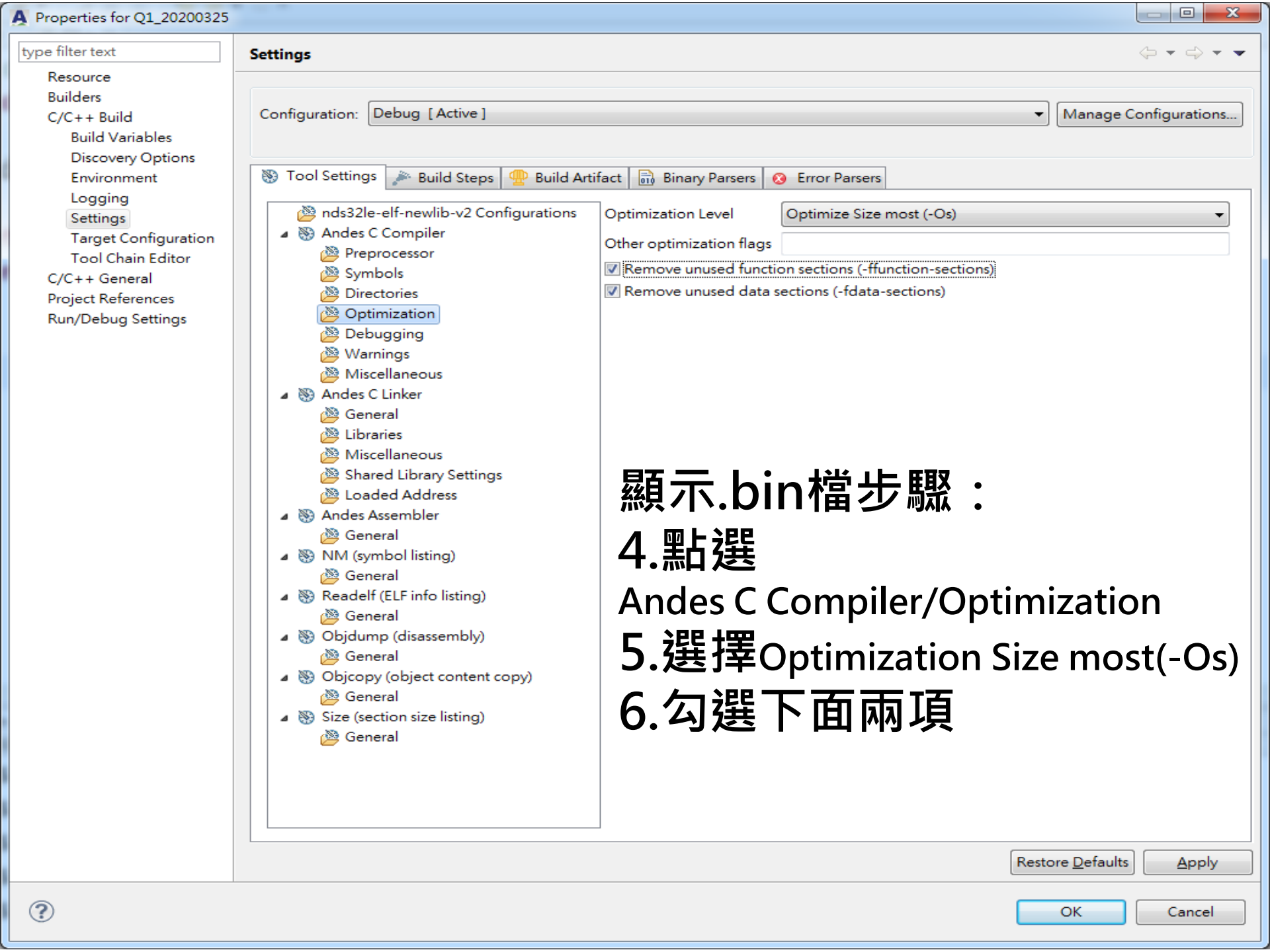
Symbols
Directories
Optimization
Debugging
Warnings
Miscellaneous
Andes C Linker
General
Libraries
Miscellaneous
Shared Library Settings
Loaded Address
Andes Assembler
General
NM (symbol listing)
General
Readelf (ELF info listing)
General
Objdump (disassembly)
General
Objcopy (object content copy)
General
Size (section size listing)
General
Disable. (Do not auto-generate output file.)
Remove all symbol and relocation information. (-S)
Remove all debugging symbols _sections. (-g)
Remove all non-global symbols. (-x)
Remove any compiler-generated symbols. (-X)
Other flags
-O binary
Restore Defaults
Apply
OK
Cancel


電腦 ▸ 本機磁碟 (C:) ▸ Andestech ▸ AndeSight200STD ▸ ide_64 ▸ workspace ▸ ACETQ1_20200520 ▸ Debug ▸ output
搜尋 output
組合管理
開啟
燒錄
新增資料夾
我的最愛
下載
桌面
最近的位置
媒體櫃
文件
音樂
視訊
圖片
電腦
本機磁碟 (C:)
本機磁碟 (D:)
BROWN BEAR (F:)
網路
名稱
修改日期
類型
大小
ACETQ1_20200520.bin 2020/5/20 下午 01:58 BIN 檔案 10 KB
readelf.txt 2020/5/20 下午 01:58 文字文件 12 KB
symbol.txt 2020/5/20 下午 01:58 文字文件 3 KB
ACETQ1_20200520.bin - 內容
一般
安全性
詳細資料
以前的版本
ACETQ1_20200520.bin
檔案類型: BIN 檔案 (.bin)
開啟檔案: Windows 殼層通用 DI
變更(C)...
位置: C:\Andestech\AndeSight200STD\ide_64\workspace\
大小: 9.17 KB (9,400 位元組)
磁碟大小: 12.0 KB (12,288 位元組)
建立日期: 2020年5月20日, 下午 01:58:06
修改日期: 2020年5月20日, 下午 01:58:06
存取日期: 2020年5月20日, 下午 01:58:06
屬性: 唯讀(R) 隱藏(H)
進階(D)...
確定
取消
套用(A)
ACETQ1_20200520.bin 修改日期: 2020/5/20 下午 01:58 建立日期: 2020/5/20 下午 01:58
BIN 檔案 大小: 9.17 KB


Preferences
type filter text
General
C/C++
Help
Install/Update
License
Remote Systems
Run/Debug
Target Management defa
TCF Agent Configurations
Team
Terminal
VEP Editor
Target Management default setting
User Settings for Target Management.
All of the settings in this page are global to the entire workspace except for those in Target Chip section.
Target Manager Internal TCP Port Range
Start Port 9900
End Port 49151
Enable Simulator Multiple Instances
Enable AICE plug-in
Disable Simulator/AICE consoles
Connection Type
Simulator AICE
ICEman Misc Arguments
Simulator Misc Arguments
Vep2Conf Misc Arguments
Target Chip
Name Chip CPU Simulator Config
ADP-AG101P-16MB-N801-S ADP-AG101P-16MB-N801-S [N801-S] ADP-XC5-for-N801-S-16M.vep
ADP-AG101P-4GB-N1033A-S ADP-AG101P-4GB-N1033A-S [N1033A-S] ADP-XC5-for-N1033A-S.vep
ADP-AG101P-4GB-N1068A-S ADP-AG101P-4GB-N1068A-S [N1068A-S] ADP-XC5-for-N1068A-S.vep
ADP-AG101P-4GB-N1233-FPU ADP-AG101P-4GB-N1233F-S [N1233-FPU] ADP-XC5-for-N1233-FPU.vep
ADP-AG101P-4GB-N1337-FPU ADP-AG101P-4GB-N1337-FPU [N1337-FPU] ADP-XC5-for-N1337-FPU.vep
ADP-AG101P-4GB-N903-S-32GPR ADP-AG101P-4GB-N903-S-32GPR [N903-S] ADP-XC5-for-N903A-S.vep
Front-end Selection
Setup System Calls
Restore Defaults
Apply
OK
Cancel


Properties for Q1_20200325
type filter text
Resource
Builders
C/C++ Build
Build Variables
Discovery Options
Environment
Logging
Settings
Target Configuration
Tool Chain Editor
C/C++ General
Project References
Run/Debug Settings
Settings
Configuration: Debug [Active]
Manage Configurations...
Tool Settings
Build Steps
Build Artifact
Binary Parsers
Error Parsers
nds32le-elf-newlib-v2 Configurations
Andes C Compiler
Preprocessor
Symbols
Directories
Optimization
Debugging
Warnings
Miscellaneous
Andes C Linker
General
Libraries
Miscellaneous
Shared Library Settings
Loaded Address
Andes Assembler
General
NM (symbol listing)
General
Readelf (ELF info listing)
General
Objdump (disassembly)
General
Objcopy (object content copy)
General
Size (section size listing)
General
Disable. (Do not auto-generate output file.)
Remove all symbol and relocation information. (-S)
Remove all debugging symbols _sections. (-g)
Remove all non-global symbols. (-x)
Remove any compiler-generated symbols. (-X)
Other flags
-O binary
顯示.bin檔步驟：
1.打開Properties
2.點選Objcoby/General
3.勾選下面四項
(p.s 第一項為不自動產生bin檔)
Restore Defaults
Apply
OK
Cancel


Properties for Q1_20200325
type filter text
Resource
Builders
C/C++ Build
Build Variables
Discovery Options
Environment
Logging
Settings
Target Configuration
Tool Chain Editor
C/C++ General
Project References
Run/Debug Settings
Settings
Configuration: Debug [Active]
Manage Configurations...
Tool Settings
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nds32le-elf-newlib-v2 Configurations
Andes C Compiler
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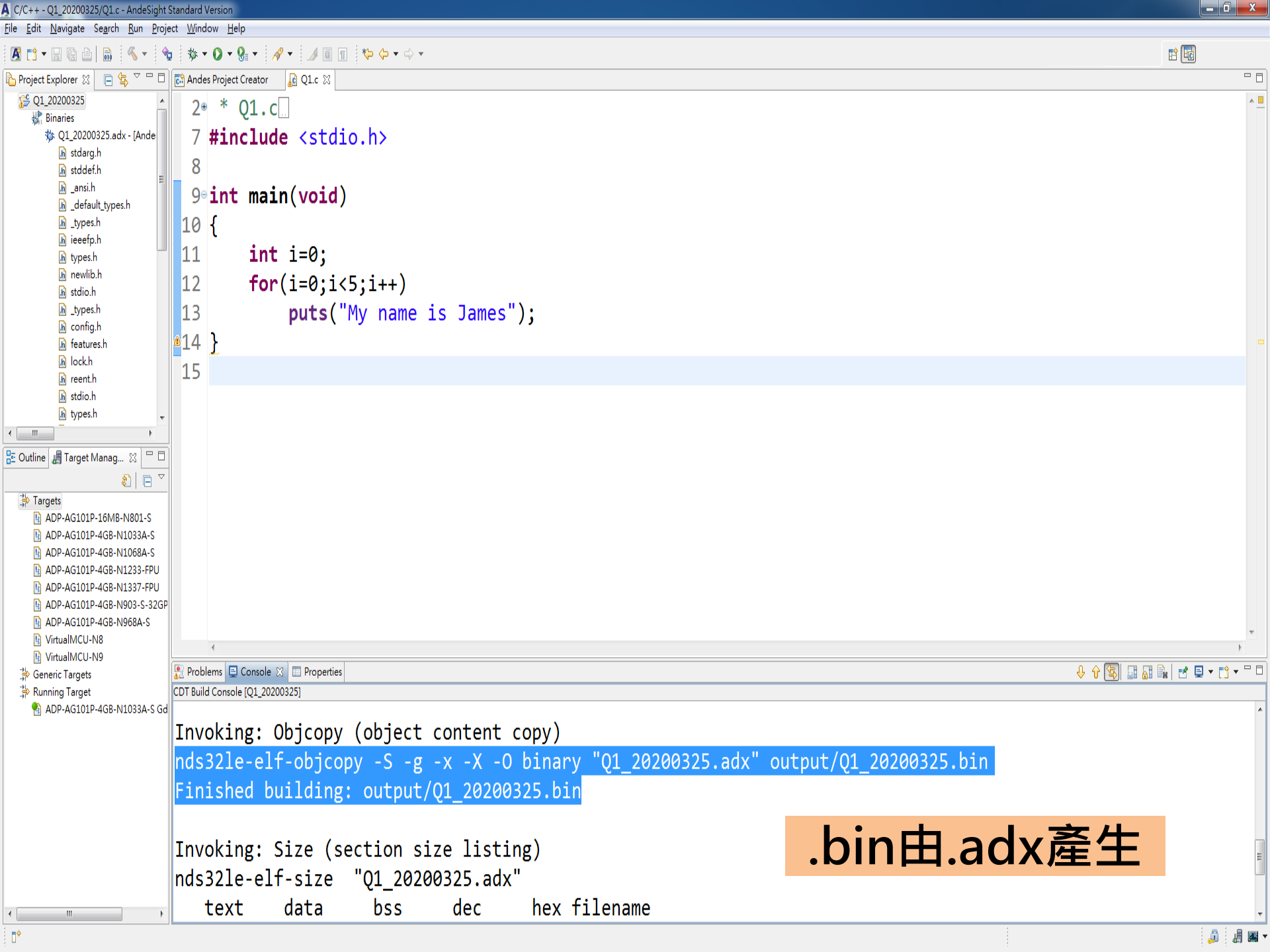
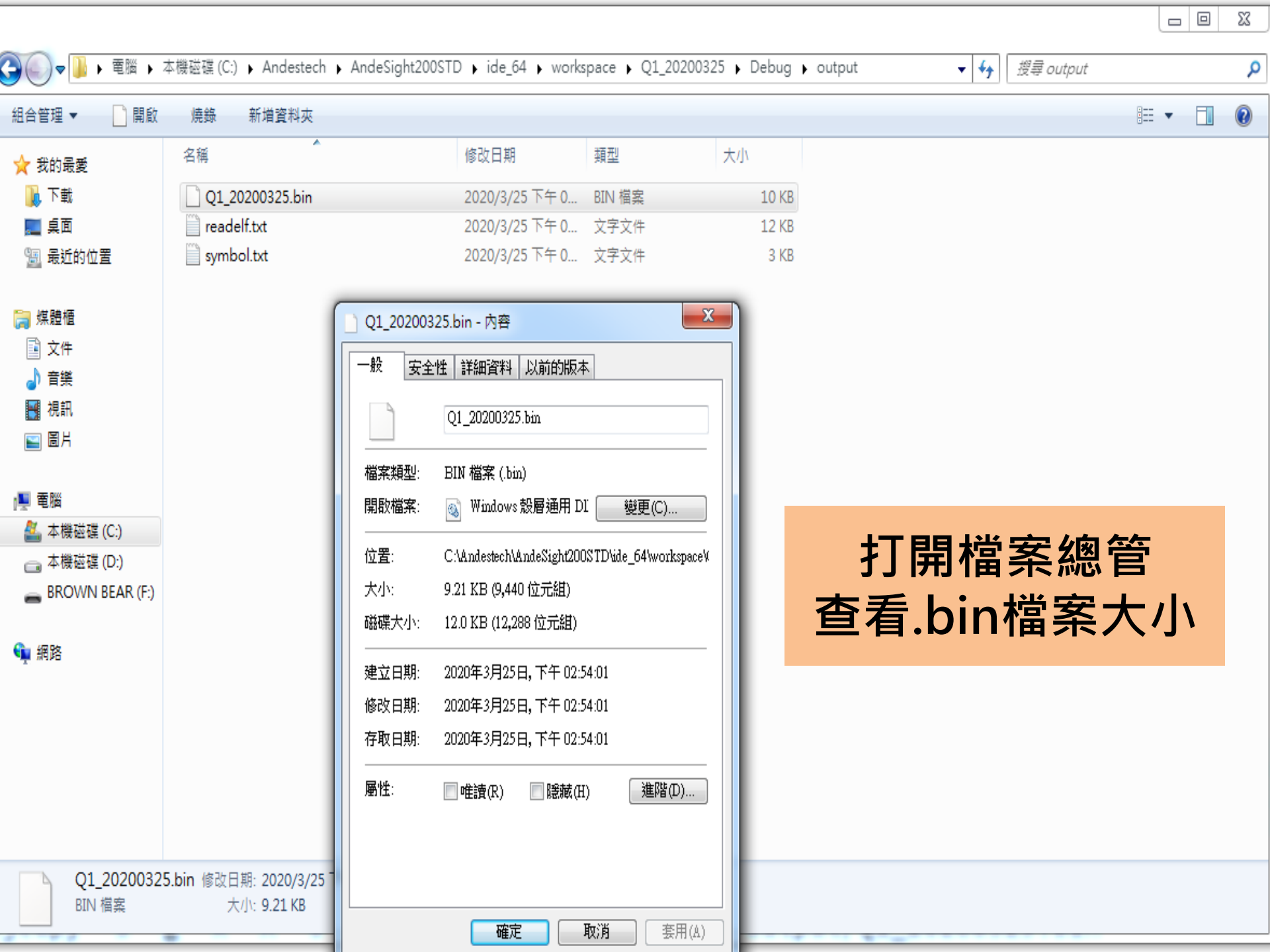
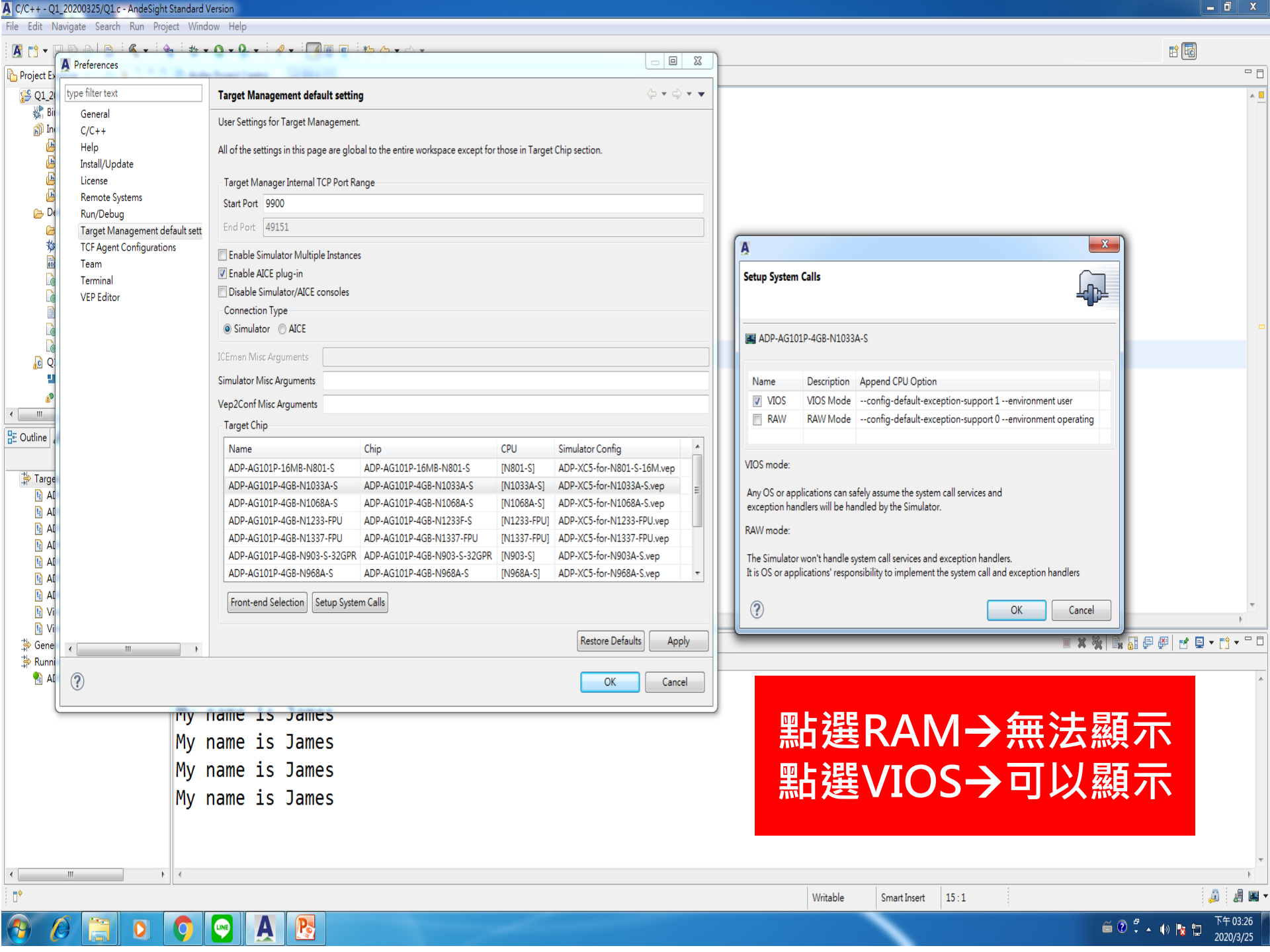
Symbols
Directories
Optimization
Debugging
Warnings
Miscellaneous
Andes C Linker
General
Libraries
Miscellaneous
Shared Library Settings
Loaded Address
Andes Assembler
General
NM (symbol listing)
General
Readelf (ELF info listing)
General
Objdump (disassembly)
General
Objcopy (object content copy)
General
Size (section size listing)
General
Optimization Level
Optimize Size most (-Os)
Other optimization flags
Remove unused function sections (-ffunction-sections)
Remove unused data sections (-fdata-sections)
顯示.bin檔步驟：
4.點選
Andes C Compiler/Optimization
5.選擇Optimization Size most(-Os)
6.勾選下面兩項
Restore Defaults
Apply
OK
Cancel


C/C++ - Q1_20200325/Q1.c - AndeSight Standard Version
File Edit Navigate Search Run Project Window Help
Project Explorer
Q1_20200325
Binaries
Q1_20200325.adx - [Ande
stdarg.h
stddef.h
_ansi.h
_default_types.h
_types.h
ieeefp.h
types.h
newlib.h
stdio.h
_types.h
config.h
features.h
lock.h
reent.h
stdio.h
types.h
Outline
Target Manag...
Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N903-S-32GP
ADP-AG101P-4GB-N968A-S
VirtualMCU-N8
VirtualMCU-N9
Generic Targets
Running Target
ADP-AG101P-4GB-N1033A-S Gd
Andes Project Creator
Q1.c
2 * Q1.c
7 #include <stdio.h>
8
9 int main(void)
10 {
11 int i=0;
12 for(i=0;i<5;i++)
13 puts("My name is James");
14 }
15
Problems
Console
Properties
CDT Build Console [Q1_20200325]
Invoking: Objcopy (object content copy)
nds32le-elf-objcopy -S -g -x -X -O binary "Q1_20200325.adx" output/Q1_20200325.bin
Finished building: output/Q1_20200325.bin
Invoking: Size (section size listing)
nds32le-elf-size "Q1_20200325.adx"
text data bss dec hex filename
.bin由.adx產生



打開檔案總管
查看.bin檔案大小

若是你的程式碼結果沒有顯示
請到以下畫面設定


C/C++ - Q1_20200325/Q1.c - AndeSight Standard Version
File Edit Navigate Search Run Project Window Help
Preferences
type filter text
General
C/C++
Help
Install/Update
License
Remote Systems
Run/Debug
Target Management default sett
TCF Agent Configurations
Team
Terminal
VEP Editor
Target Management default setting
User Settings for Target Management.
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Target Manager Internal TCP Port Range
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Enable Simulator Multiple Instances
Enable AICE plug-in
Disable Simulator/AICE consoles
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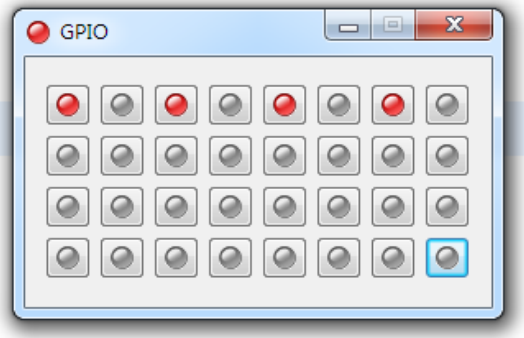
Simulator AICE
ICEman Misc Arguments
Simulator Misc Arguments
Vep2Conf Misc Arguments
Target Chip
Name Chip CPU Simulator Config
ADP-AG101P-16MB-N801-S ADP-AG101P-16MB-N801-S [N801-S] ADP-XC5-for-N801-S-16M.vep
ADP-AG101P-4GB-N1033A-S ADP-AG101P-4GB-N1033A-S [N1033A-S] ADP-XC5-for-N1033A-S.vep
ADP-AG101P-4GB-N1068A-S ADP-AG101P-4GB-N1068A-S [N1068A-S] ADP-XC5-for-N1068A-S.vep
ADP-AG101P-4GB-N1233-FPU ADP-AG101P-4GB-N1233F-S [N1233-FPU] ADP-XC5-for-N1233-FPU.vep
ADP-AG101P-4GB-N1337-FPU ADP-AG101P-4GB-N1337-FPU [N1337-FPU] ADP-XC5-for-N1337-FPU.vep
ADP-AG101P-4GB-N903-S-32GPR ADP-AG101P-4GB-N903-S-32GPR [N903-S] ADP-XC5-for-N903A-S.vep
ADP-AG101P-4GB-N968A-S ADP-AG101P-4GB-N968A-S [N968A-S] ADP-XC5-for-N968A-S.vep
Front-end Selection
Setup System Calls
Restore Defaults
Apply
OK
Cancel
Setup System Calls
ADP-AG101P-4GB-N1033A-S
Name Description Append CPU Option
VIOS VIOS Mode --config-default-exception-support 1 --environment user
RAW RAW Mode --config-default-exception-support 0 --environment operating
VIOS mode:
Any OS or applications can safely assume the system call services and exception handlers will be handled by the Simulator.
RAW mode:
The Simulator won't handle system call services and exception handlers.
It is OS or applications' responsibility to implement the system call and exception handlers
OK
Cancel
My name is James
My name is James
My name is James
My name is James
點選RAM→無法顯示
點選VIOS→可以顯示
Writable
Smart Insert
15 : 1
下午 03:26
2020/3/25

Q2

考題類型	☐ Non-OS ☐ Linux
實作平台	☐ ADP-XC5FF676 ☐ ADPAG102-UP ☐ ADP-WT95F064 ■ VEP (AndeSight™ STD v2.0)
環境設定	1. PC 主機：Host OS - Microsoft Windows XP 2. Andes/AndeSight V2.0 Toolchains
實作內容	在 AndeSight™整合開發環境撰寫程式，使用 ESL 平台環境下(1) 將程式修改為一列 LED 間隔之閃爍效果(2)使 LED 同時兩列以上達到跑馬燈閃爍之顯示效果。
注意事項	1. 請將作答所產生之所有檔案儲存於資料夾 Q2\Ans 內。 2. 可依需要參考或使用 Q2\ 內各子資料夾預存之程式碼或資料。

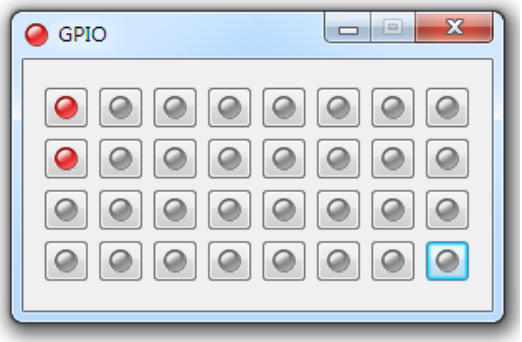
```c
#define GPIO_BASE 0x98700000
#define GPIO_DATA_OUT (*((unsigned int *)(GPIO_BASE+0x00)))

#define LED_GREEN 0x04
#define DELAY_TIME 100000

void toggleLED (unsigned int LEDMask);
void delay(unsigned int count);

int main()
{
    GPIO_DATA_OUT=0;
    while(1)
    {
        toggleLED(LED_GREEN);
        delay(DELAY_TIME);
    }
    return 0;
}
```

```
GPIO_DATA_OUT=0;
while(1)
{
    int cnt;
    for(cnt=0; cnt<3; cnt++){    //偶數LED閃爍
        toggleLED(LED_GREEN);
        delay(DELAY_TIME);
    }

}
return 0;
```

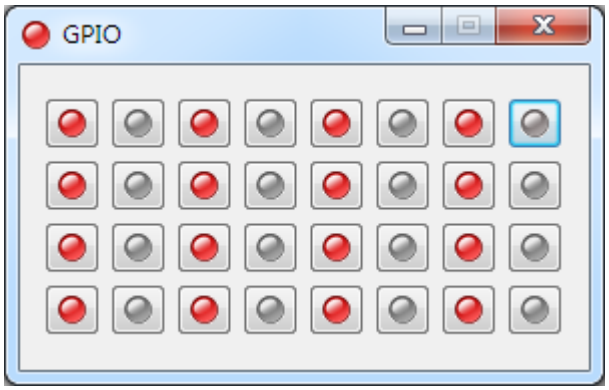


```
13 int main()
14 {
15     GPIO_DATA_OUT=0;
16     while(1)
17     {
18         int cnt;
19         for(cnt=0; cnt<3; cnt++){    //偶數LED閃爍
20             toggleLED(LED_GREEN);
21             delay(DELAY_TIME);
22         }
23         for(cnt=0; cnt<14; cnt++){  //LED來回閃爍
24             GPIO_DATA_OUT=LED[cnt];
25             delay(DELAY_TIME);
26         }
27         GPIO_DATA_OUT=0;     //執行完全部清除
28         delay(DELAY_TIME*3);
29     }
30     return 0;
31 }
```

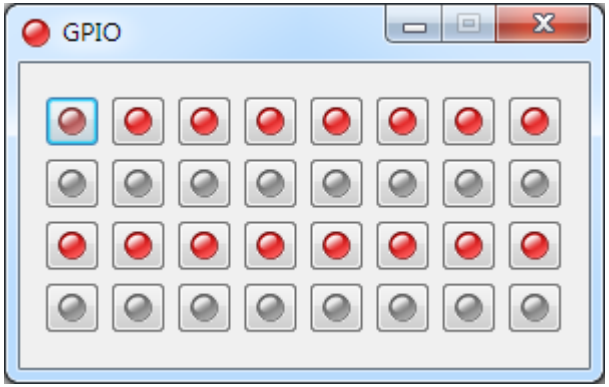
```c
int main()
{
    GPIO_DATA_OUT=0;
    while(1)
    {
        int cnt;
        for(cnt=0; cnt<3; cnt++){    //偶數LED閃爍
            toggleLED(LED_GREEN);
            delay(DELAY_TIME);
        }
        for(cnt=0; cnt<14; cnt++){   //LED來回閃爍
            GPIO_DATA_OUT=LED[cnt];
            delay(DELAY_TIME);
        }
        GPIO_DATA_OUT=0;     //執行完全部清除
        delay(DELAY_TIME*3);
    }
    return 0;
}
```



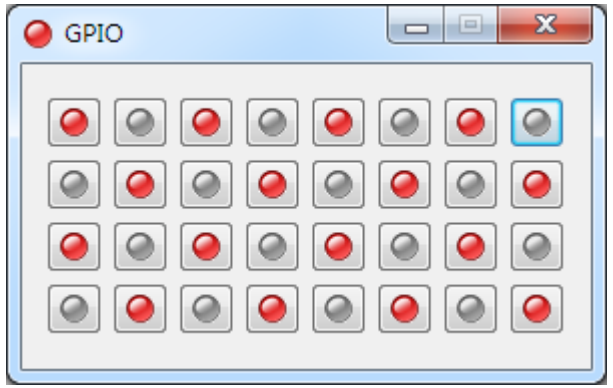
```c
#define GPIO_BASE 0x98700000
#define GPIO_DATA_OUT (*((unsigned int *)(GPIO_BASE+0x00)))

#define LED_GREEN 0x55555555
#define DELAY_TIME 100000

void toggleLED (unsigned int LEDMask);
void delay(unsigned int count);

int main()
{
    GPIO_DATA_OUT=0;
    while(1)
    {
        toggleLED(LED_GREEN);
        delay(DELAY_TIME);
    }
    return 0;
}

```



```c
#define GPIO_BASE 0x98700000
#define GPIO_DATA_OUT (*((unsigned int *)(GPIO_BASE+0x00)))

#define LED_GREEN 0x00FF00FF    //1.3列閃
#define DELAY_TIME 100000

void toggleLED (unsigned int LEDMask);
void delay(unsigned int count);

int main()
{
    GPIO_DATA_OUT=0;
    while(1)
    {
        toggleLED(LED_GREEN);
        delay(DELAY_TIME);
    }
    return 0;
}
```

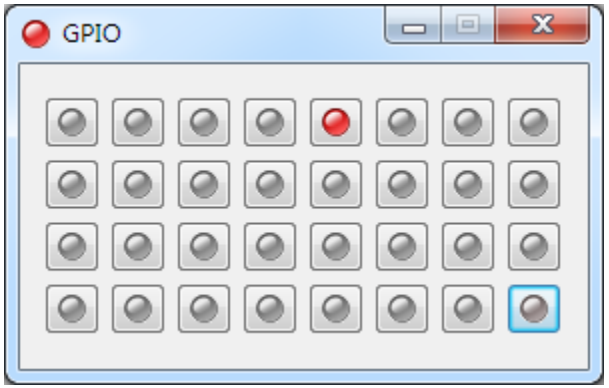


```c
#define GPIO_BASE 0x98700000
#define GPIO_DATA_OUT (*((unsigned int *)(GPIO_BASE+0x00)))

#define LED_GREEN 0xAA55AA55
#define DELAY_TIME 100000

void toggleLED (unsigned int LEDMask);
void delay(unsigned int count);

int main()
{
    GPIO_DATA_OUT=0;
    while(1)
    {
        toggleLED(LED_GREEN);
        delay(DELAY_TIME);
    }
    return 0;
}

```



```
11      unsigned int outdata=0x01;
12      GPIO_DATA_OUT=0;
13
14      while(1)
15      {
16          while(outdata<0x80){
17              GPIO_DATA_OUT=outdata;
18              outdata = outdata<<1;
19              delay(DELAY_TIME);
20          }
21          GPIO_DATA_OUT=outdata;
22          delay(DELAY_TIME);
23          outdata = outdata>>1;
24
25          while(outdata>0x01){
26              GPIO_DATA_OUT=outdata;
27              outdata = outdata>>1;
28              delay(DELAY_TIME);
29          }
30      }
```

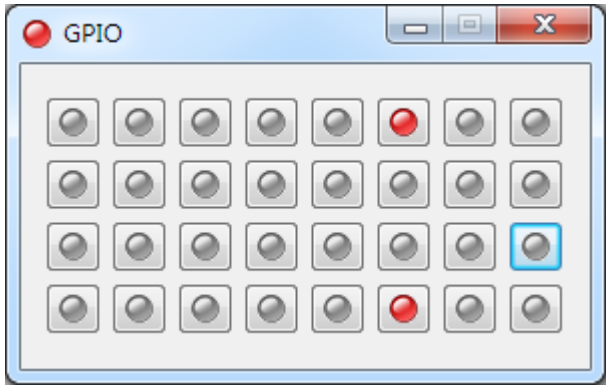
霹靂燈



```
#define GPIO_BASE 0x98700000
#define GPIO_DATA_OUT (*((unsigned int *)(GPIO_BASE+0x00)))

#define DELAY_TIME 500000

void toggleLED (unsigned int LEDMask);
void delay(unsigned int count);

int main()
{
        unsigned int outdata=0x01;
        GPIO_DATA_OUT=0;

        while(1)
        {
                while(outdata<0x80){
                        GPIO_DATA_OUT=outdata;
                        outdata = outdata<<1;
                        delay(DELAY_TIME);
                }
                GPIO_DATA_OUT=outdata;
                delay(DELAY_TIME);
                outdata = outdata>>1;

                while(outdata>0x01){
                        GPIO_DATA_OUT=outdata;
                        outdata = outdata>>1;
                        delay(DELAY_TIME);
                }
        }
        return 0;
}

void toggleLED (unsigned int LEDMask)
{
        GPIO_DATA_OUT ^= LEDMask;
}

void delay(unsigned int count)
{
        for(;count>0;count--);
}
```

```
int main()
{
    unsigned int outdata=0x01000001;
    GPIO_DATA_OUT=0;

    while(1)
    {
        while(outdata<0x80000080){
            GPIO_DATA_OUT=outdata;
            outdata = outdata<<1;
            delay(DELAY_TIME);
        }
        GPIO_DATA_OUT=outdata;
        delay(DELAY_TIME);
        outdata = outdata>>1;

        while(outdata>0x01000001){
            GPIO_DATA_OUT=outdata;
            outdata = outdata>>1;
            delay(DELAY_TIME);
        }
    }
    return 0;
}
```

1.4霹靂燈



```
#define GPIO_BASE 0x98700000
#define GPIO_DATA_OUT (*((unsigned int *)(GPIO_BASE+0x00)))

#define DELAY_TIME 500000

void toggleLED (unsigned int LEDMask);
void delay(unsigned int count);

int main()
{
        unsigned int outdata=0x01000001;
        GPIO_DATA_OUT=0;

        while(1)
        {
                while(outdata<0x80000080){
                        GPIO_DATA_OUT=outdata;
                        outdata = outdata<<1;
                        delay(DELAY_TIME);
                }
                GPIO_DATA_OUT=outdata;
                delay(DELAY_TIME);
                outdata = outdata>>1;

                while(outdata>0x01000001){
                        GPIO_DATA_OUT=outdata;
                        outdata = outdata>>1;
                        delay(DELAY_TIME);
                }
        }
        return 0;
}

void toggleLED (unsigned int LEDMask)
{
        GPIO_DATA_OUT ^= LEDMask;
}

void delay(unsigned int count)
{
        for(;count>0;count--);
}
```

甲級-LED來回

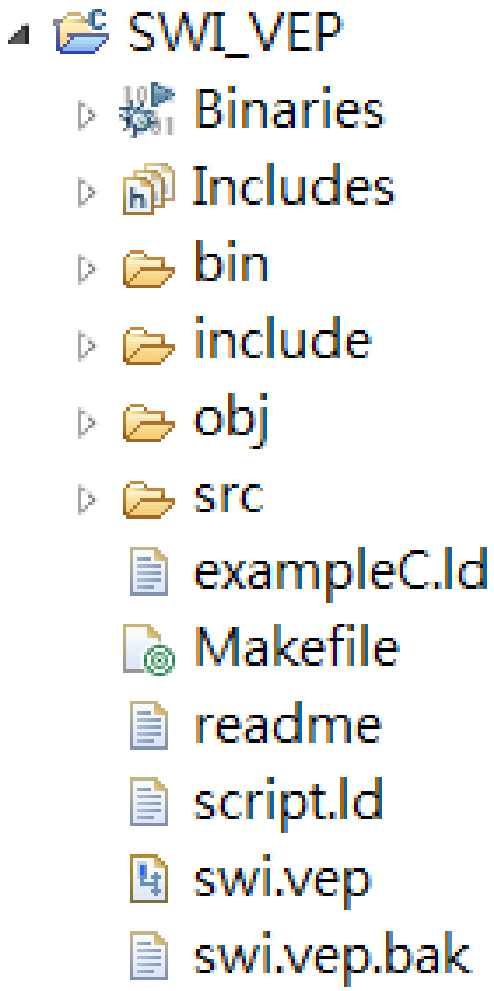
```
11 int main()
12 {
13     GPIO_ACT_PE = 0xFFFF; //Initialize GPIO
14     GPIO_OMOD_PE = 0x0;
15     GPIO_OEN_PE = 0x0;
16     unsigned int Data[]={0xFFFE, 0xFFFD, 0xFFFB, 0xFFF7,\
17                          0xFFEF, 0xFFDF, 0xFFBF, 0xFF7F,\
18                          0xFFBF, 0xFFDF, 0xFFEF, 0xFFF7,\
19                          0xFFFB, 0xFFFD, 0xFFFE};
20
```

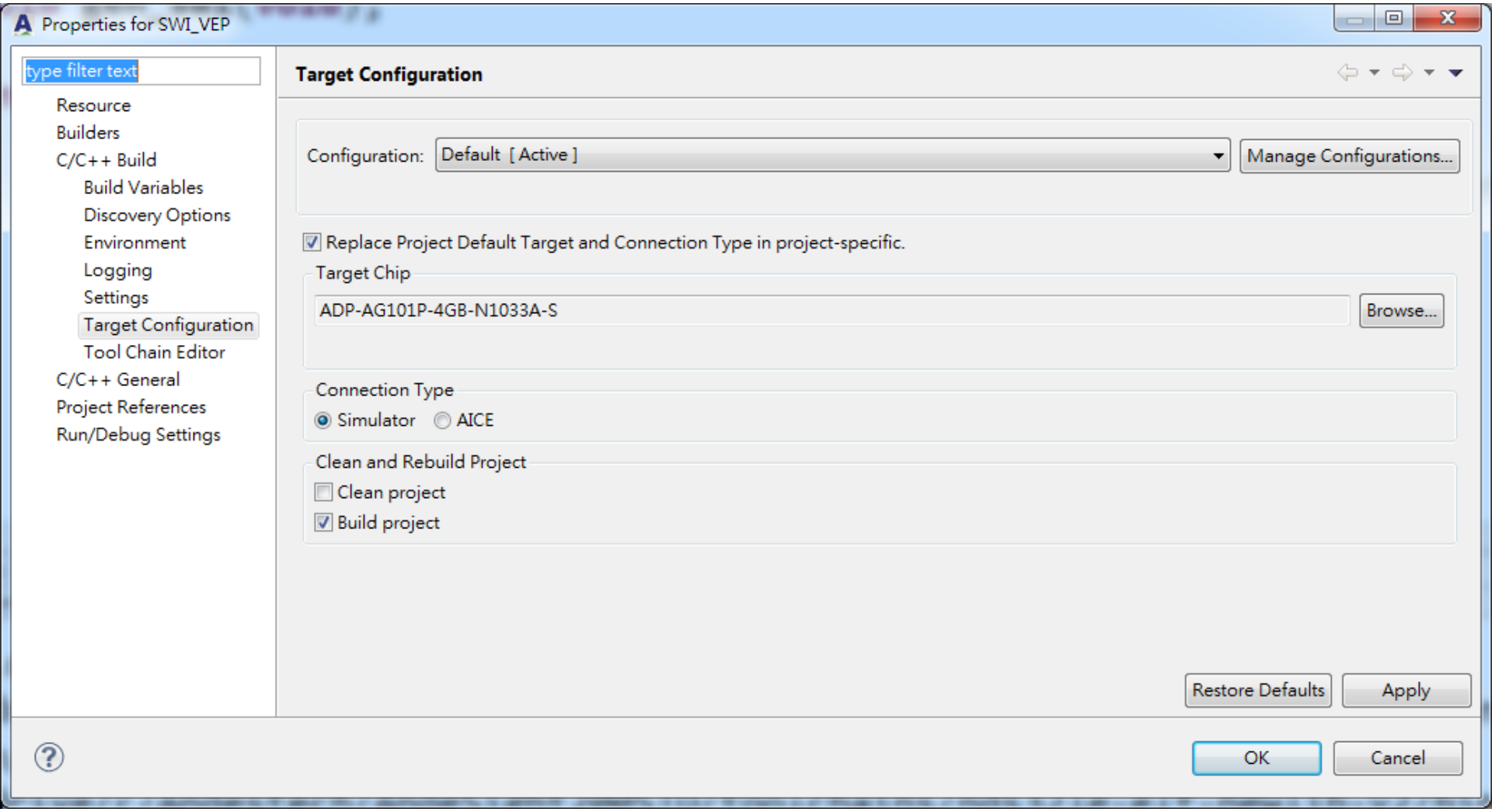
```
21      while(1)
22      {
23          GPIO_DAT_PE = 0xFFFF;
24          delay1(1000000);
25          int i=0;
26          for(i=0;i<15;i++)
27              GPIO_DAT_PE = Data[i];
28              delay1(1000000);
29      }
30          GPIO_DAT_PE = 0xFFFF;
31          delay1(1000000);
32          int i=0;
33          for(i=0;i<15;i++)
34              GPIO_DAT_PE = Data[i]<<8+0xFF;
35          delay1(1000000);
36      return 0;
37  }
```

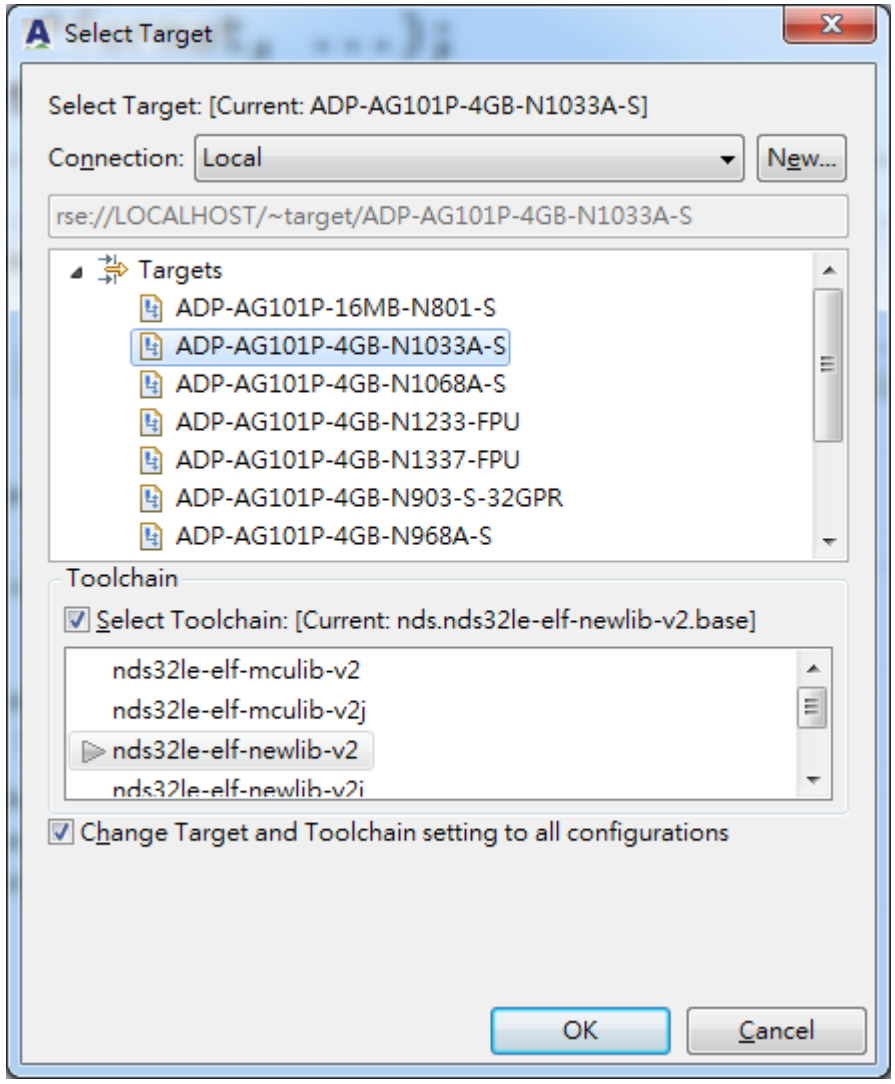
Q3

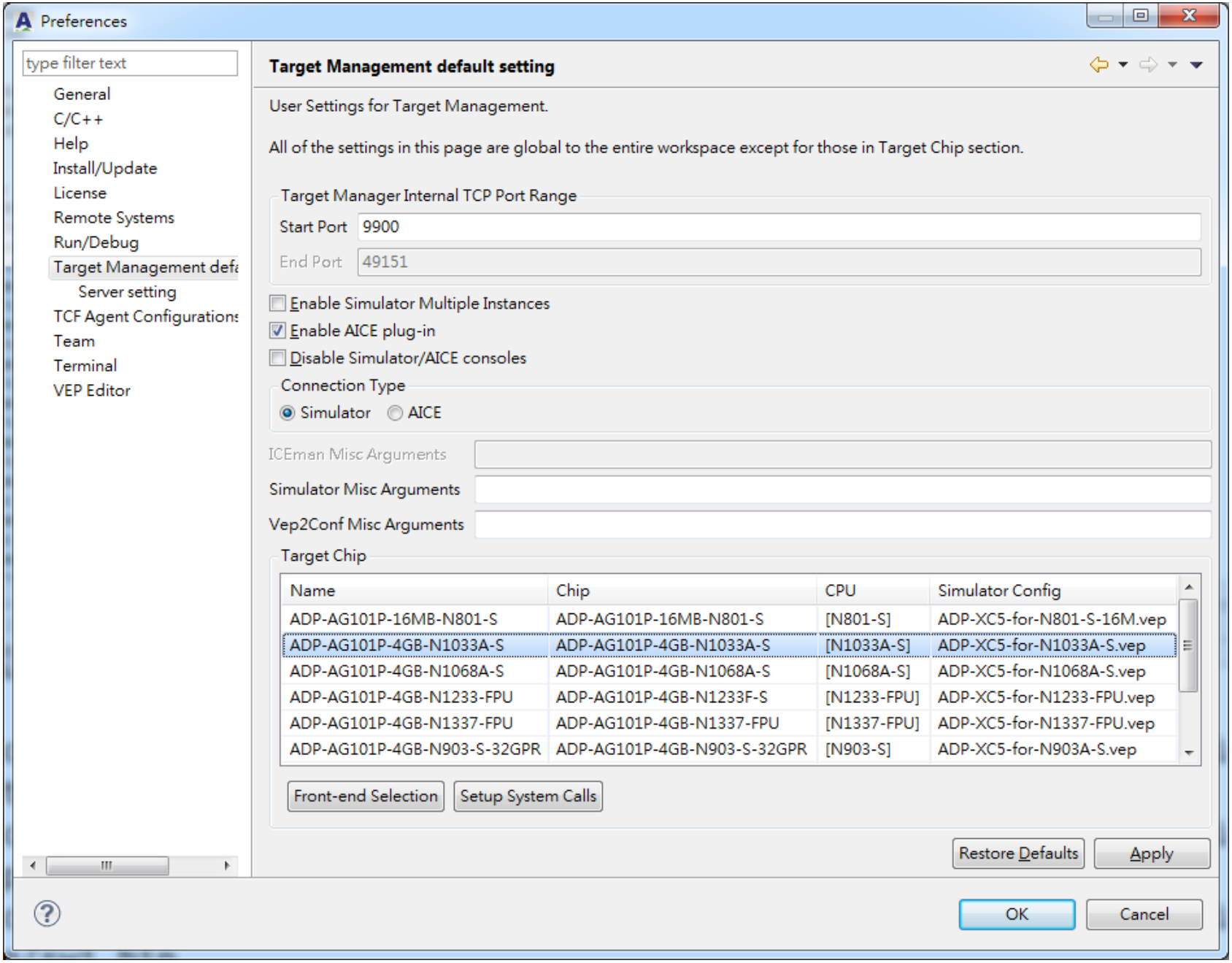
題號: 3　　版本:1.0

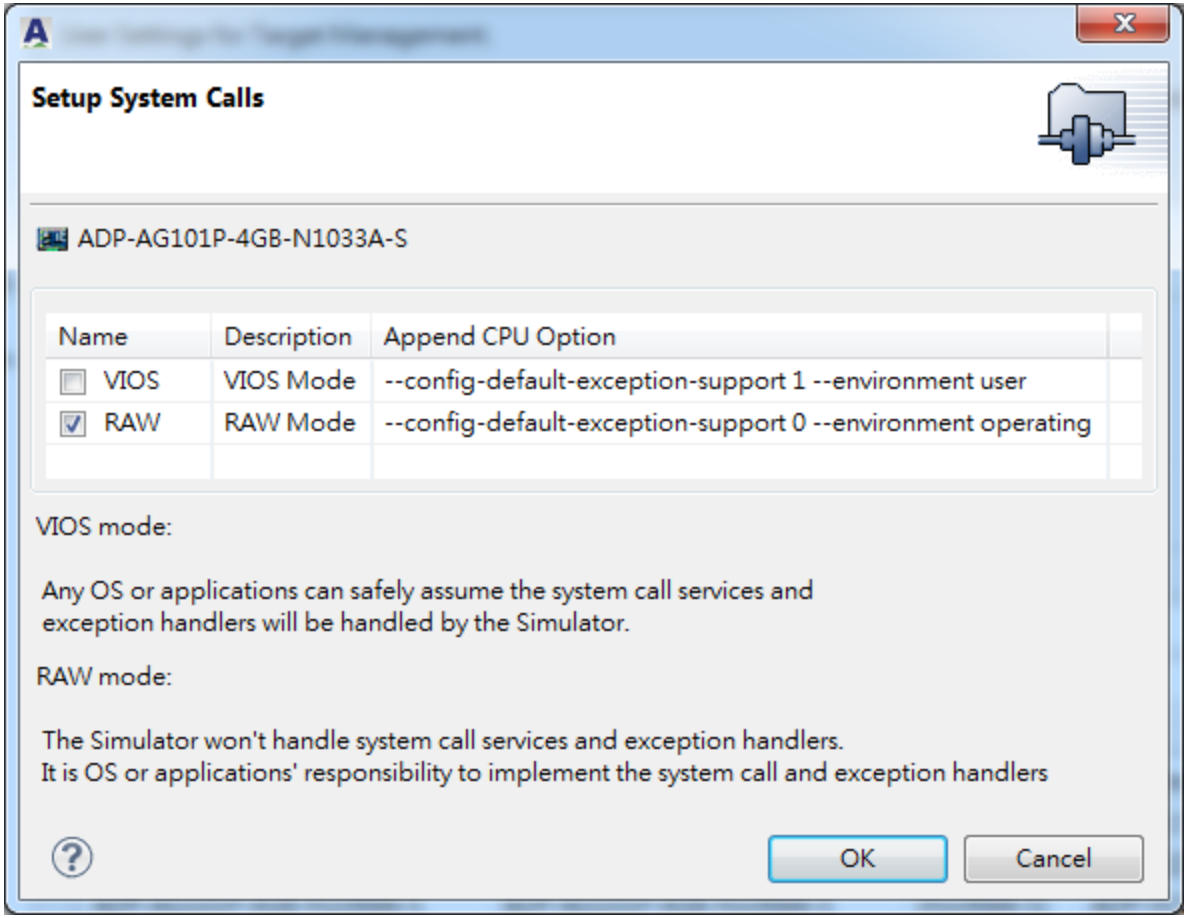
考題類型	☐ Non-OS　　☐ Linux
實作平台	☐ ADP-XC5FF676　☐ ADPAG102-UP　☐ ADP-WT95F064 ■ VEP (AndeSight™ STD v2.0)
環境設定	1. PC 主機：Host OS - Microsoft Windows XP 2. Andes/AndeSight V2.0 Toolchains
實作內容	在 AndeSight™整合開發環境，使用 VEP(Virtual Evaluation Platform)功能，(1) 在 UART 傳送文字字串至終端機上顯示。(2)完整的呈現 Interrupt 步驟。 參考設定參數： Memory Map 在 URAT 的〝Base〞欄位輸入〝0x99600000〞; 〝Size〞欄位輸入〝0x00000020〞
注意事項	1. 請將作答所產生之所有檔案儲存於資料夾 Q3\ Ans 內。 2. 可依需要參考或使用 Q3\內各子資料夾預存之程式碼或資料。

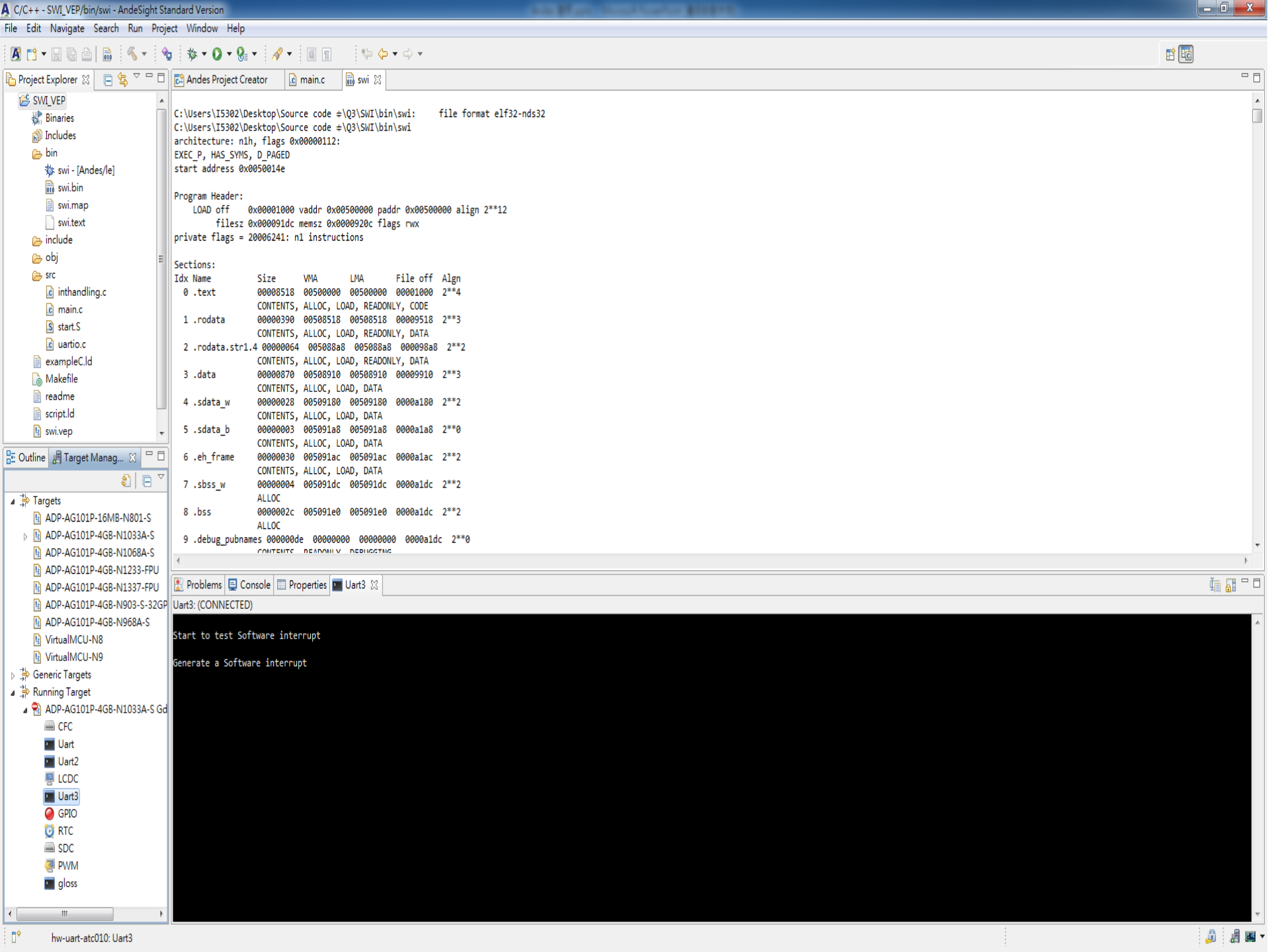

SWI_VEP
Binaries
Includes
bin
include
obj
src
exampleC.ld
Makefile
readme
script.ld
swi.vep
swi.vep.bak

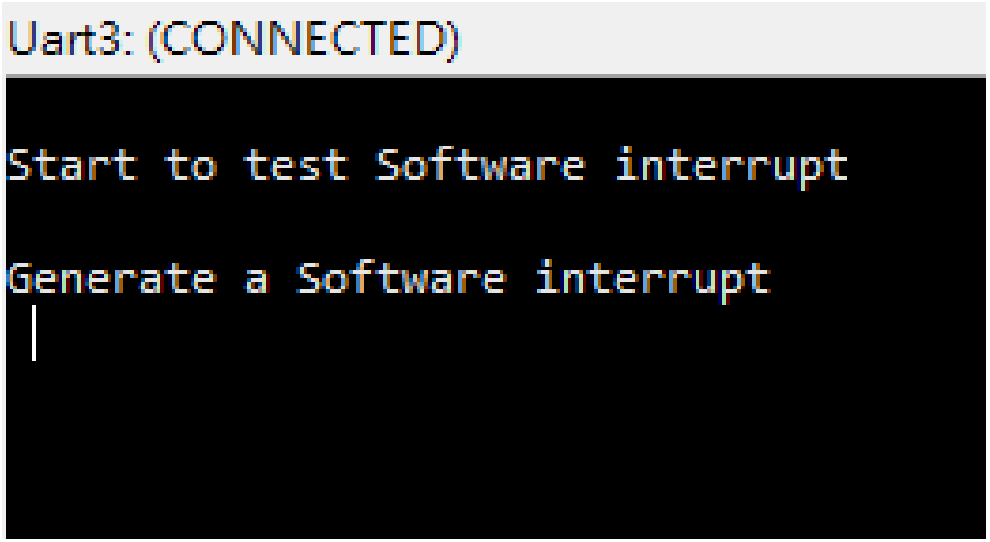

Properties for SWI_VEP
type filter text
Resource
Builders
C/C++ Build
Build Variables
Discovery Options
Environment
Logging
Settings
Target Configuration
Tool Chain Editor
C/C++ General
Project References
Run/Debug Settings
Target Configuration
Configuration: Default [Active]
Manage Configurations...
Replace Project Default Target and Connection Type in project-specific.
Target Chip
ADP-AG101P-4GB-N1033A-S
Browse...
Connection Type
Simulator
AICE
Clean and Rebuild Project
Clean project
Build project
Restore Defaults
Apply
OK
Cancel

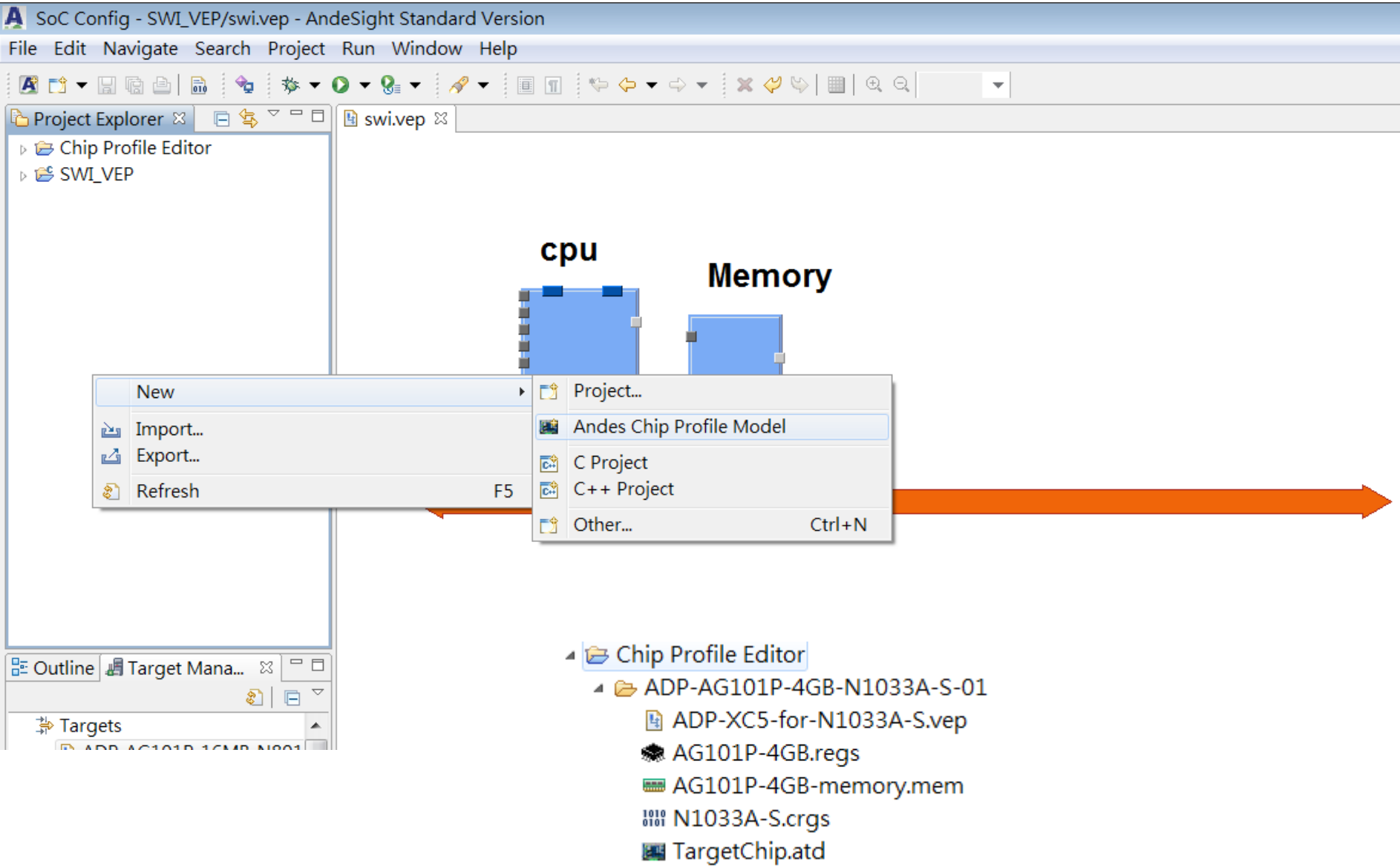

Select Target
Select Target: [Current: ADP-AG101P-4GB-N1033A-S]
Connection: Local
New...
rse://LOCALHOST/~target/ADP-AG101P-4GB-N1033A-S
Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N903-S-32GPR
ADP-AG101P-4GB-N968A-S
Toolchain
Select Toolchain: [Current: nds.nds32le-elf-newlib-v2.base]
nds32le-elf-mculib-v2
nds32le-elf-mculib-v2j
nds32le-elf-newlib-v2
Change Target and Toolchain setting to all configurations
OK
Cancel


Preferences
type filter text
General
C/C++
Help
Install/Update
License
Remote Systems
Run/Debug
Target Management defa
Server setting
TCF Agent Configurations
Team
Terminal
VEP Editor
Target Management default setting
User Settings for Target Management.
All of the settings in this page are global to the entire workspace except for those in Target Chip section.
Target Manager Internal TCP Port Range
Start Port 9900
End Port 49151
Enable Simulator Multiple Instances
Enable AICE plug-in
Disable Simulator/AICE consoles
Connection Type
Simulator AICE
ICEman Misc Arguments
Simulator Misc Arguments
Vep2Conf Misc Arguments
Target Chip
Name Chip CPU Simulator Config
ADP-AG101P-16MB-N801-S ADP-AG101P-16MB-N801-S [N801-S] ADP-XC5-for-N801-S-16M.vep
ADP-AG101P-4GB-N1033A-S ADP-AG101P-4GB-N1033A-S [N1033A-S] ADP-XC5-for-N1033A-S.vep
ADP-AG101P-4GB-N1068A-S ADP-AG101P-4GB-N1068A-S [N1068A-S] ADP-XC5-for-N1068A-S.vep
ADP-AG101P-4GB-N1233-FPU ADP-AG101P-4GB-N1233F-S [N1233-FPU] ADP-XC5-for-N1233-FPU.vep
ADP-AG101P-4GB-N1337-FPU ADP-AG101P-4GB-N1337-FPU [N1337-FPU] ADP-XC5-for-N1337-FPU.vep
ADP-AG101P-4GB-N903-S-32GPR ADP-AG101P-4GB-N903-S-32GPR [N903-S] ADP-XC5-for-N903A-S.vep
Front-end Selection
Setup System Calls
Restore Defaults
Apply
OK
Cancel

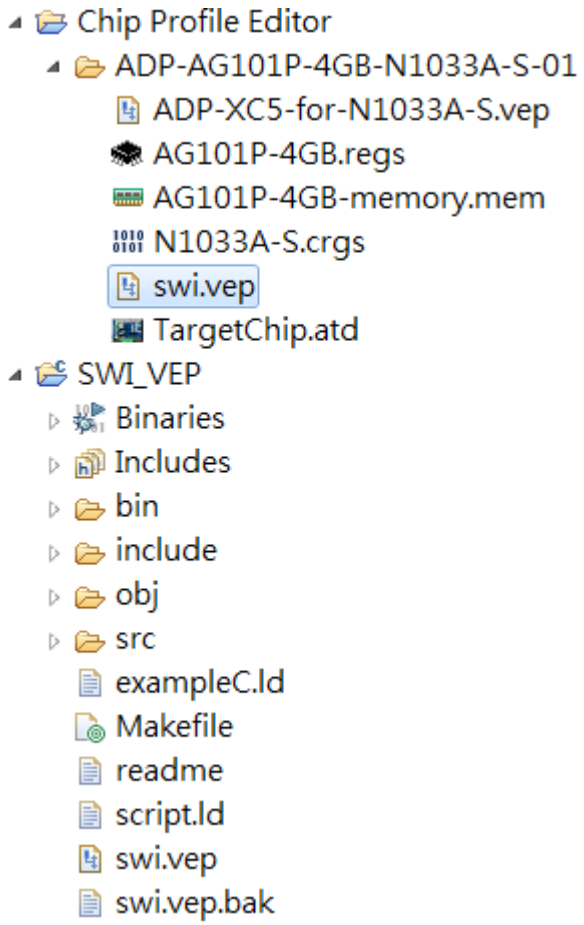

Setup System Calls
ADP-AG101P-4GB-N1033A-S
Name
Description
Append CPU Option
VIOS
VIOS Mode
--config-default-exception-support 1 --environment user
RAW
RAW Mode
--config-default-exception-support 0 --environment operating
VIOS mode:
Any OS or applications can safely assume the system call services and
exception handlers will be handled by the Simulator.
RAW mode:
The Simulator won't handle system call services and exception handlers.
It is OS or applications' responsibility to implement the system call and exception handlers
OK
Cancel


C/C++ - SWI_VEP/bin/swi - AndeSight Standard Version
File Edit Navigate Search Run Project Window Help
Project Explorer
SWI_VEP
Binaries
Includes
bin
swi - [Andes/le]
swi.bin
swi.map
swi.text
include
obj
src
inthandling.c
main.c
start.S
uartio.c
exampleC.ld
Makefile
readme
script.ld
swi.vep
Outline
Target Manag...
Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N903-S-32GP
ADP-AG101P-4GB-N968A-S
VirtualMCU-N8
VirtualMCU-N9
Generic Targets
Running Target
ADP-AG101P-4GB-N1033A-S Gd
CFC
Uart
Uart2
LCDC
Uart3
GPIO
RTC
SDC
PWM
gloss
Andes Project Creator
main.c
swi
C:\Users\I5302\Desktop\Source code ±\Q3\SWI\bin\swi: file format elf32-nds32
C:\Users\I5302\Desktop\Source code ±\Q3\SWI\bin\swi
architecture: n1h, flags 0x00000112:
EXEC_P, HAS_SYMS, D_PAGED
start address 0x0050014e
Program Header:
LOAD off 0x00001000 vaddr 0x00500000 paddr 0x00500000 align 2**12
filesz 0x000091dc memsz 0x0000920c flags rwx
private flags = 20006241: n1 instructions
Sections:
Idx Name Size VMA LMA File off Algn
0 .text 00008518 00500000 00500000 00001000 2**4
CONTENTS, ALLOC, LOAD, READONLY, CODE
1 .rodata 00000390 00508518 00508518 00009518 2**3
CONTENTS, ALLOC, LOAD, READONLY, DATA
2 .rodata.str1.4 00000064 005088a8 005088a8 000098a8 2**2
CONTENTS, ALLOC, LOAD, READONLY, DATA
3 .data 00000870 00508910 00508910 00009910 2**3
CONTENTS, ALLOC, LOAD, DATA
4 .sdata_w 00000028 00509180 00509180 0000a180 2**2
CONTENTS, ALLOC, LOAD, DATA
5 .sdata_b 00000003 005091a8 005091a8 0000a1a8 2**0
CONTENTS, ALLOC, LOAD, DATA
6 .eh_frame 00000030 005091ac 005091ac 0000a1ac 2**2
CONTENTS, ALLOC, LOAD, DATA
7 .sbss_w 00000004 005091dc 005091dc 0000a1dc 2**2
ALLOC
8 .bss 0000002c 005091e0 005091e0 0000a1dc 2**2
ALLOC
9 .debug_pubnames 000000de 00000000 00000000 0000a1dc 2**0
Problems
Console
Properties
Uart3
Uart3: (CONNECTED)
Start to test Software interrupt
Generate a Software interrupt
hw-uart-atc010: Uart3

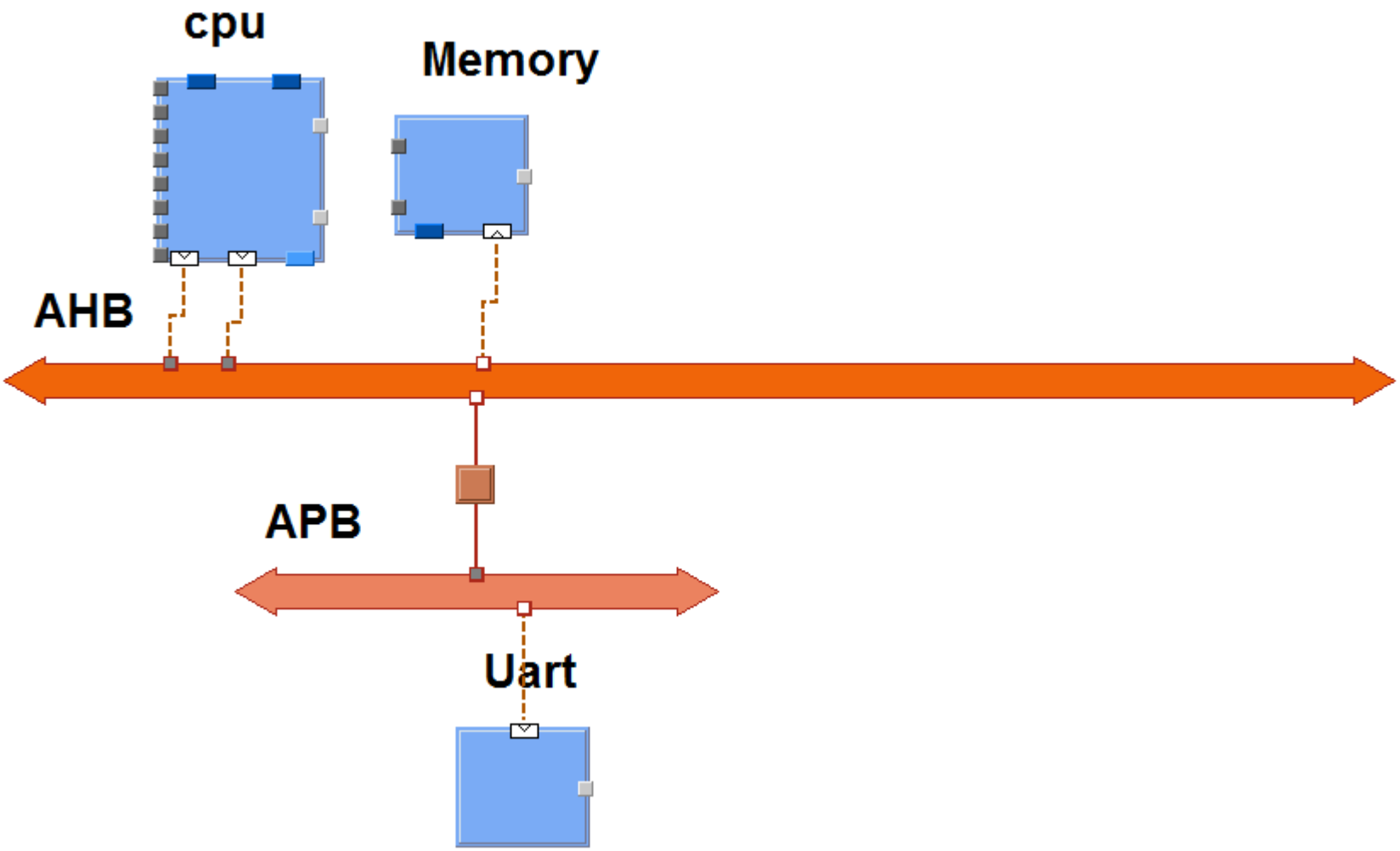

Uart3: (CONNECTED)
Start to test Software interrupt
Generate a Software interrupt


SoC Config - SWI_VEP/swi.vep - AndeSight Standard Version
File Edit Navigate Search Project Run Window Help
Project Explorer
Chip Profile Editor
SWI_VEP
swi.vep
cpu
Memory
New
Import...
Export...
Refresh F5
Project...
Andes Chip Profile Model
C Project
C++ Project
Other... Ctrl+N
Outline
Target Mana...
Targets
Chip Profile Editor
ADP-AG101P-4GB-N1033A-S-01
ADP-XC5-for-N1033A-S.vep
AG101P-4GB.regs
AG101P-4GB-memory.mem
N1033A-S.crgs
TargetChip.atd

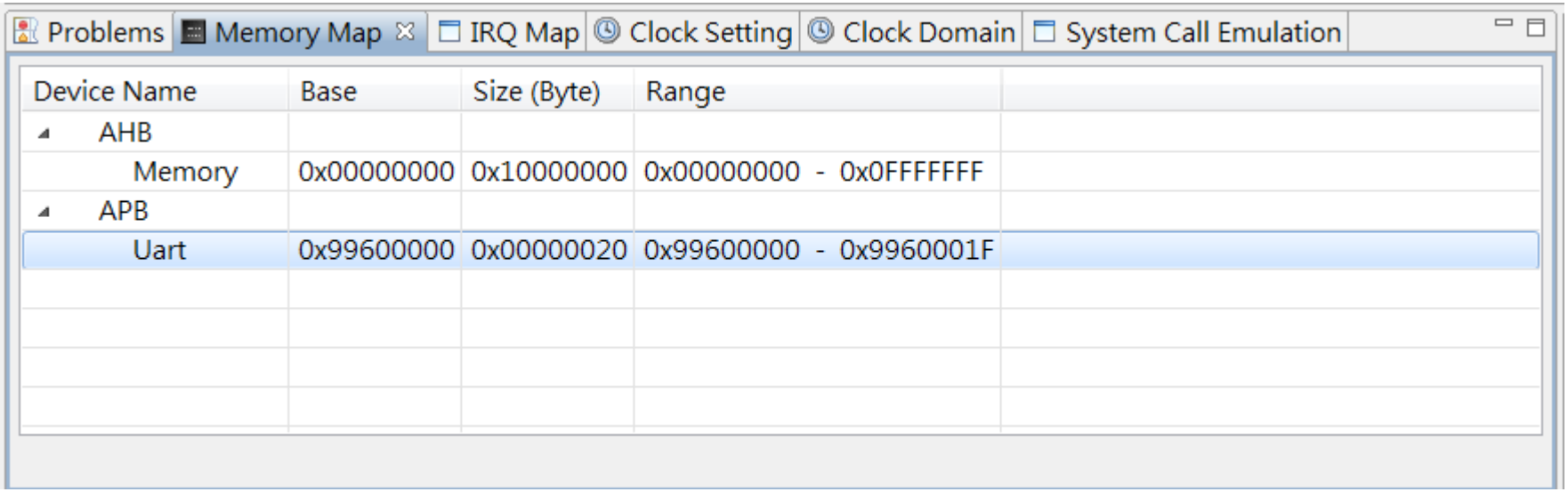
複製swi.vep到內建檔案



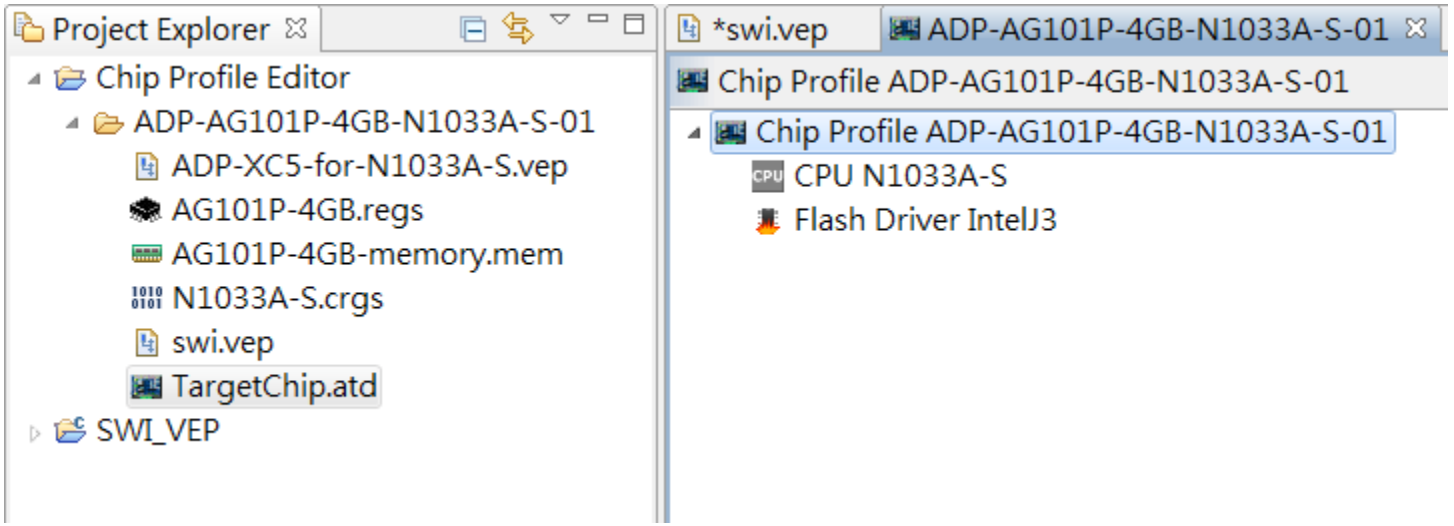
新增Uart與排線

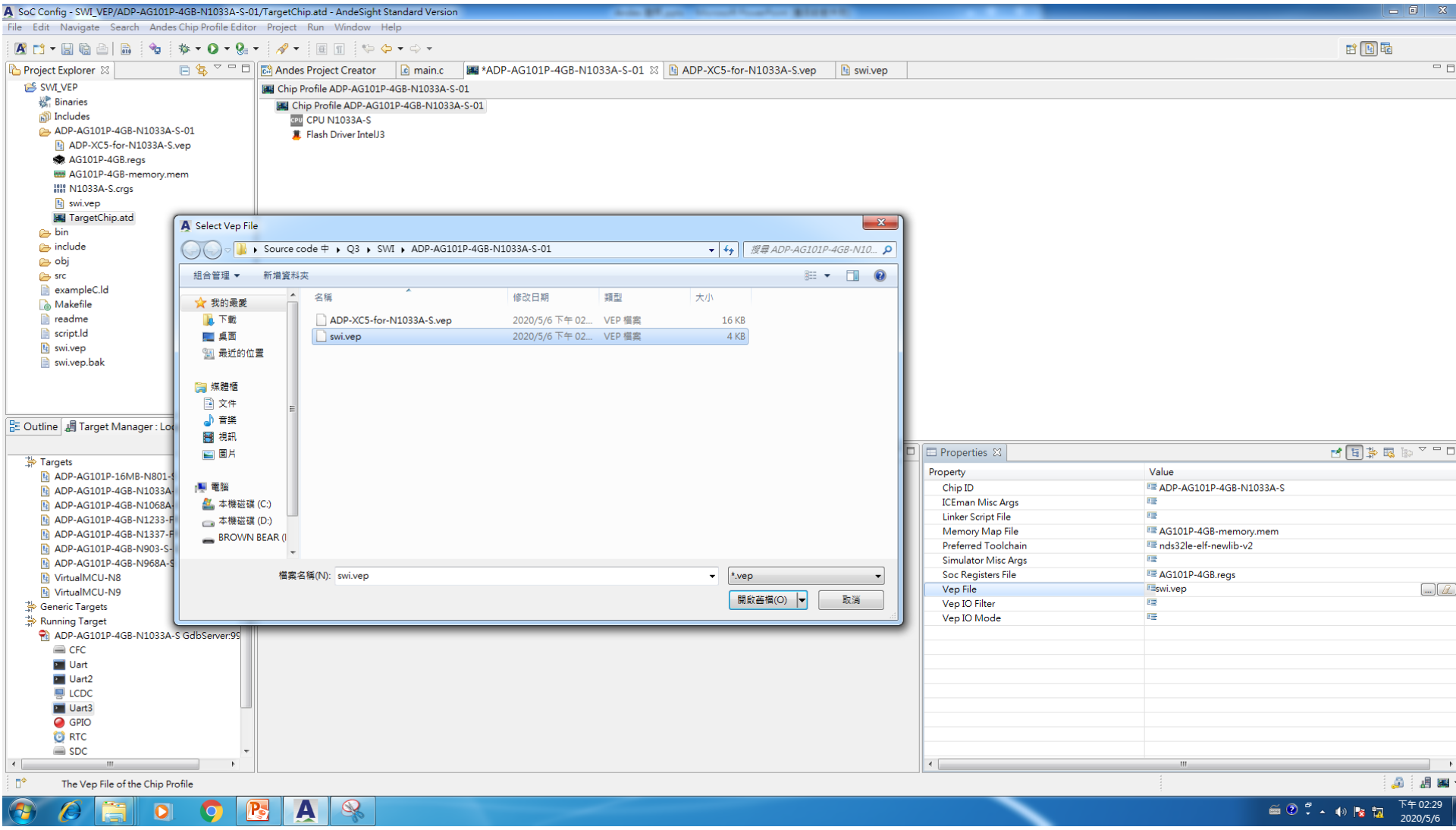


Memory Map 在URAT的 "Base"欄位輸入"0x99600000" "Size"欄位輸入"0x00000020"

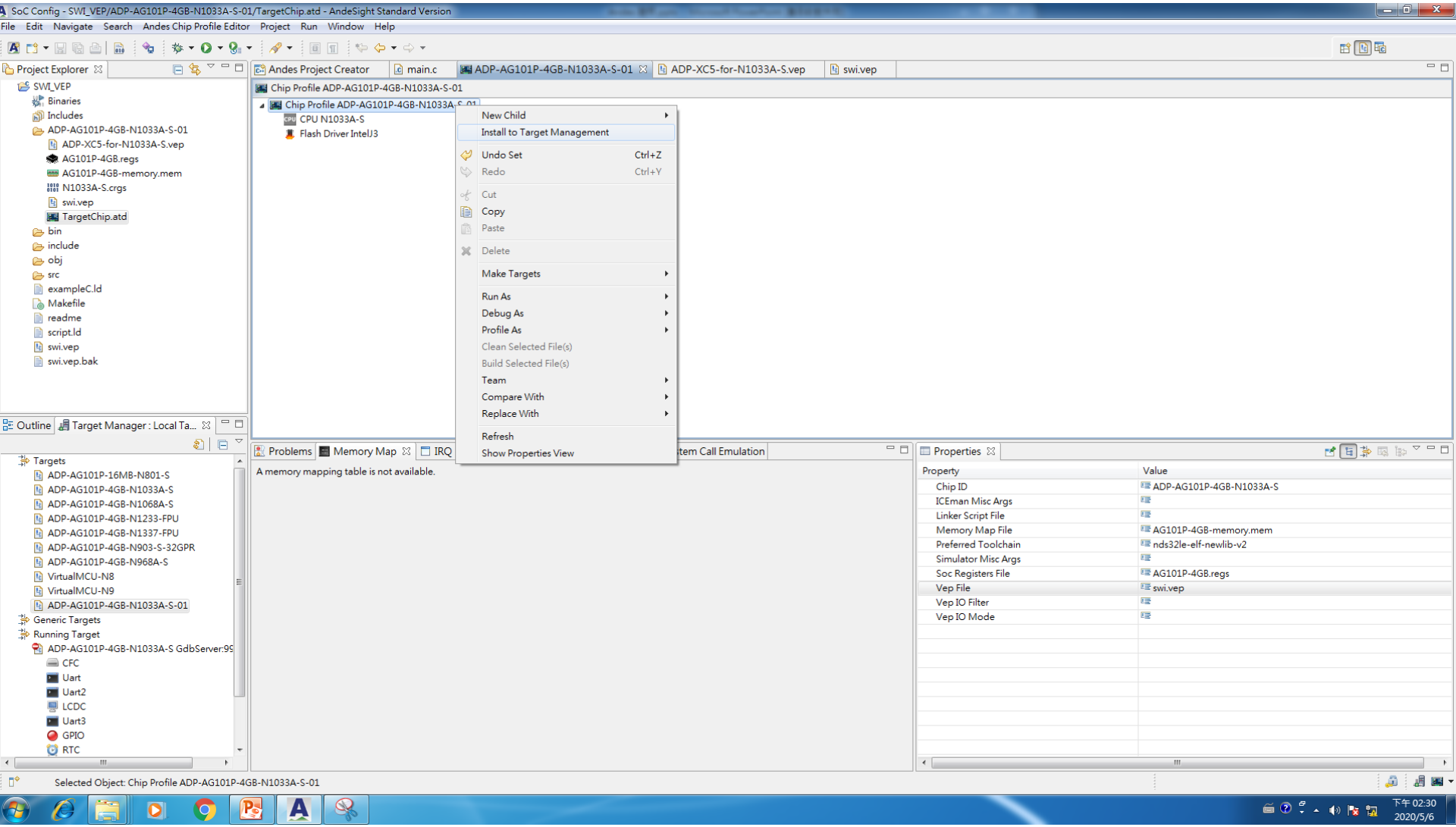


點選TargetChip.atd

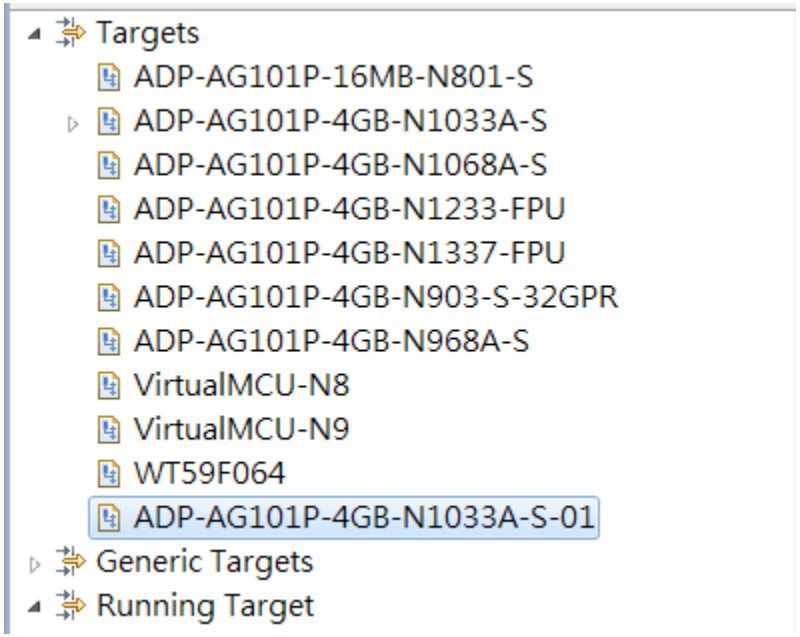



SoC Config - SWI_VEP/ADP-AG101P-4GB-N1033A-S-01/TargetChip.atd - AndeSight Standard Version
File Edit Navigate Search Andes Chip Profile Editor Project Run Window Help
Project Explorer
SWI_VEP
Binaries
Includes
ADP-AG101P-4GB-N1033A-S-01
ADP-XC5-for-N1033A-S.vep
AG101P-4GB.regs
AG101P-4GB-memory.mem
N1033A-S.crgs
swi.vep
TargetChip.atd
bin
include
obj
src
exampleC.ld
Makefile
readme
script.ld
swi.vep
swi.vep.bak
Andes Project Creator
main.c
*ADP-AG101P-4GB-N1033A-S-01
ADP-XC5-for-N1033A-S.vep
swi.vep
Chip Profile ADP-AG101P-4GB-N1033A-S-01
Chip Profile ADP-AG101P-4GB-N1033A-S-01
CPU N1033A-S
Flash Driver IntelJ3
Select Vep File
Source code 中 ▸ Q3 ▸ SWI ▸ ADP-AG101P-4GB-N1033A-S-01
搜尋 ADP-AG101P-4GB-N10...
組合管理
新增資料夾
我的最愛
下載
桌面
最近的位置
媒體櫃
文件
音樂
視訊
圖片
電腦
本機磁碟 (C:)
本機磁碟 (D:)
BROWN BEAR (I
名稱
修改日期
類型
大小
ADP-XC5-for-N1033A-S.vep 2020/5/6 下午 02... VEP 檔案 16 KB
swi.vep 2020/5/6 下午 02... VEP 檔案 4 KB
檔案名稱(N): swi.vep
*.vep
開啟舊檔(O)
取消
Outline
Target Manager : Lo
Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-
ADP-AG101P-4GB-N1068A-
ADP-AG101P-4GB-N1233-F
ADP-AG101P-4GB-N1337-F
ADP-AG101P-4GB-N903-S-
ADP-AG101P-4GB-N968A-S
VirtualMCU-N8
VirtualMCU-N9
Generic Targets
Running Target
ADP-AG101P-4GB-N1033A-S GdbServer:99
CFC
Uart
Uart2
LCDC
Uart3
GPIO
RTC
SDC
Properties
Property
Value
Chip ID
ADP-AG101P-4GB-N1033A-S
ICEman Misc Args
Linker Script File
Memory Map File
AG101P-4GB-memory.mem
Preferred Toolchain
nds32le-elf-newlib-v2
Simulator Misc Args
Soc Registers File
AG101P-4GB.regs
Vep File
swi.vep
Vep IO Filter
Vep IO Mode
The Vep File of the Chip Profile
下午 02:29
2020/5/6

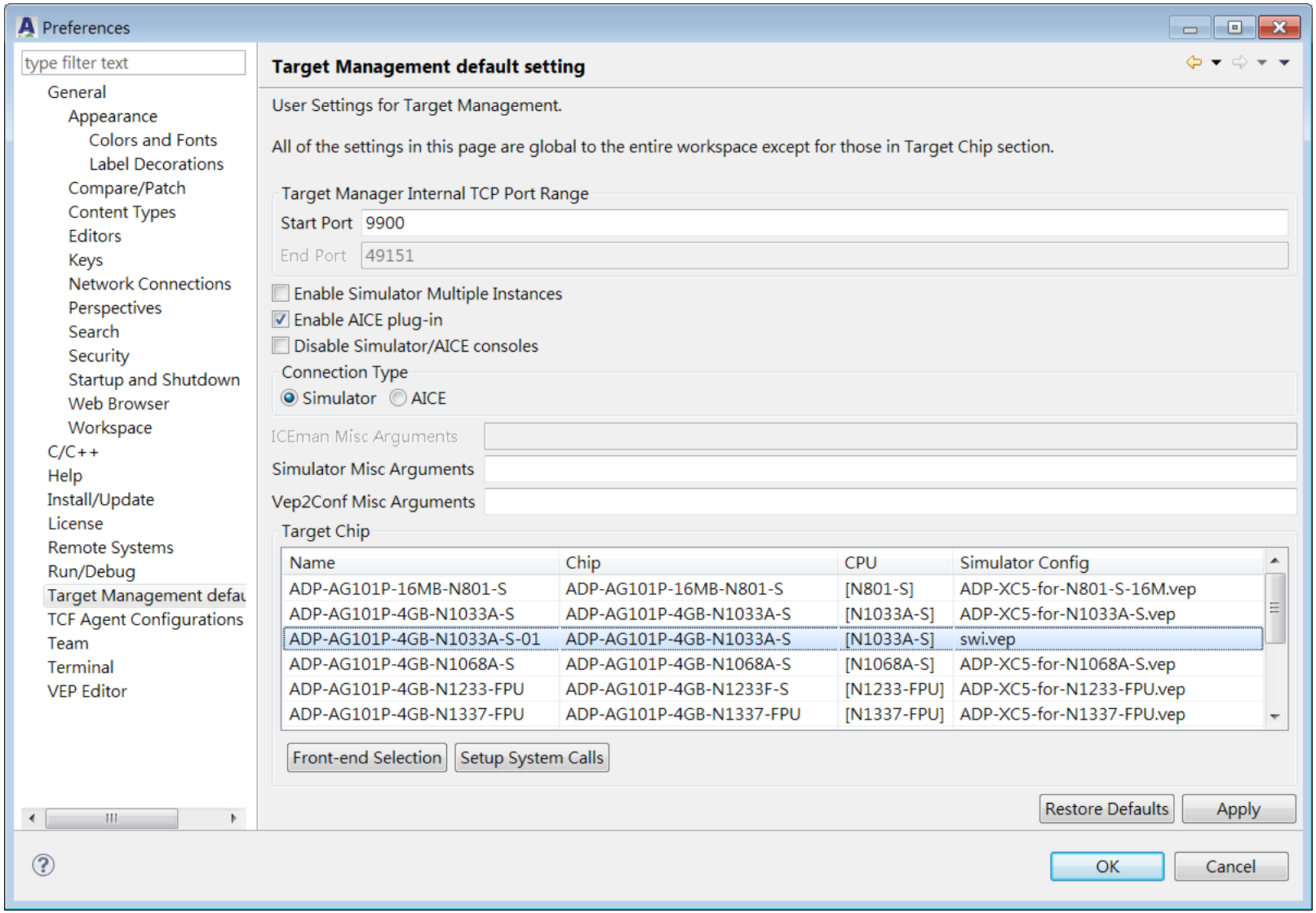
將更新後的目標版匯入

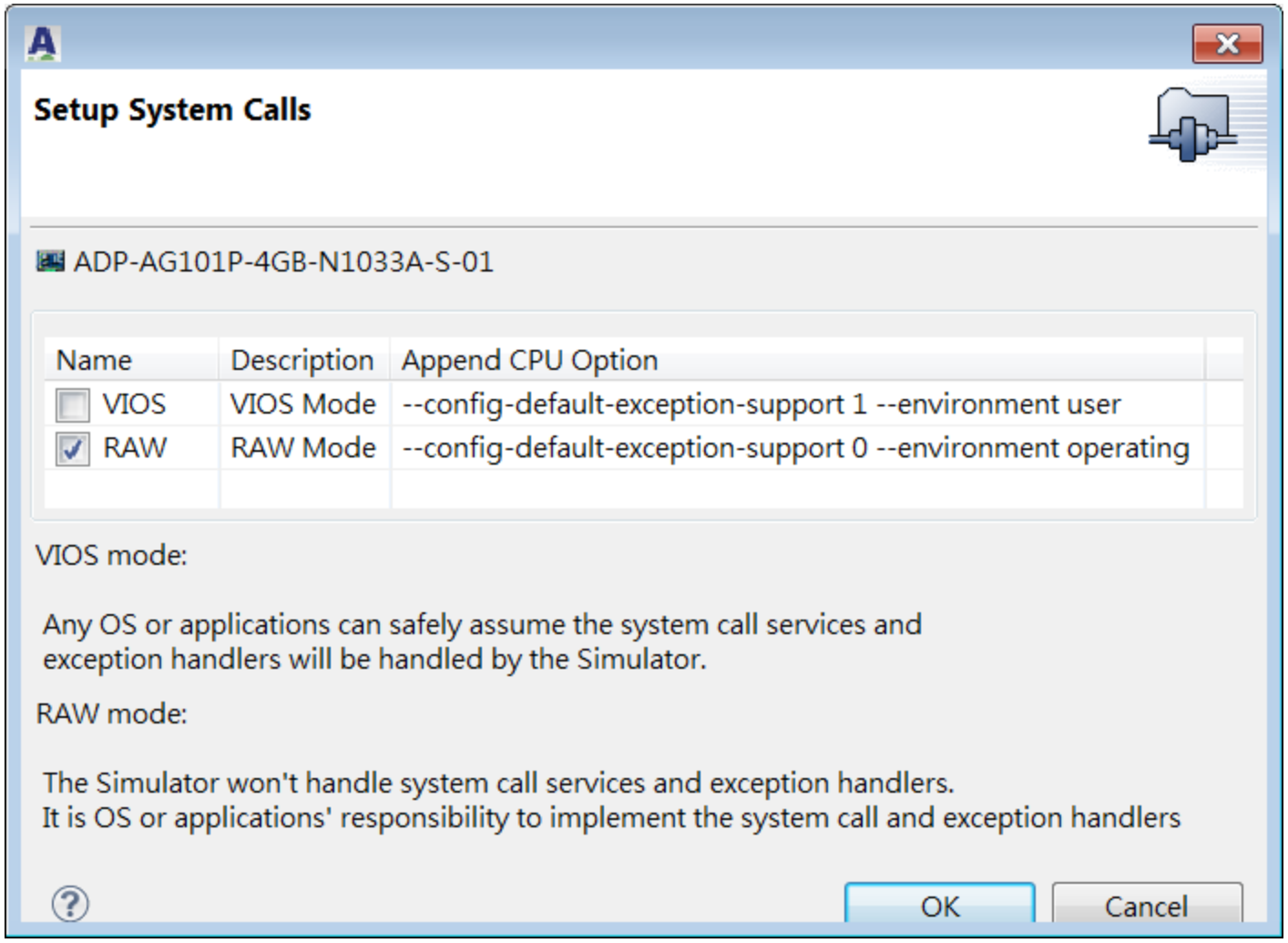

SoC Config - SWI_VEP/ADP-AG101P-4GB-N1033A-S-01/TargetChip.atd - AndeSight Standard Version
File Edit Navigate Search Andes Chip Profile Editor Project Run Window Help
Project Explorer
SWI_VEP
Binaries
Includes
ADP-AG101P-4GB-N1033A-S-01
ADP-XC5-for-N1033A-S.vep
AG101P-4GB.regs
AG101P-4GB-memory.mem
N1033A-S.crgs
swi.vep
TargetChip.atd
bin
include
obj
src
exampleC.ld
Makefile
readme
script.ld
swi.vep
swi.vep.bak
Andes Project Creator
main.c
ADP-AG101P-4GB-N1033A-S-01
ADP-XC5-for-N1033A-S.vep
swi.vep
Chip Profile ADP-AG101P-4GB-N1033A-S-01
CPU N1033A-S
Flash Driver IntelJ3
New Child
Install to Target Management
Undo Set Ctrl+Z
Redo Ctrl+Y
Cut
Copy
Paste
Delete
Make Targets
Run As
Debug As
Profile As
Clean Selected File(s)
Build Selected File(s)
Team
Compare With
Replace With
Refresh
Show Properties View
Outline
Target Manager : Local Ta...
Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N903-S-32GPR
ADP-AG101P-4GB-N968A-S
VirtualMCU-N8
VirtualMCU-N9
ADP-AG101P-4GB-N1033A-S-01
Generic Targets
Running Target
ADP-AG101P-4GB-N1033A-S GdbServer:95
CFC
Uart
Uart2
LCDC
Uart3
GPIO
RTC
Problems
Memory Map
IRQ
tem Call Emulation
A memory mapping table is not available.
Properties
Property
Value
Chip ID
ADP-AG101P-4GB-N1033A-S
ICEman Misc Args
Linker Script File
Memory Map File
AG101P-4GB-memory.mem
Preferred Toolchain
nds32le-elf-newlib-v2
Simulator Misc Args
Soc Registers File
AG101P-4GB.regs
Vep File
swi.vep
Vep IO Filter
Vep IO Mode
Selected Object: Chip Profile ADP-AG101P-4GB-N1033A-S-01
下午 02:30
2020/5/6

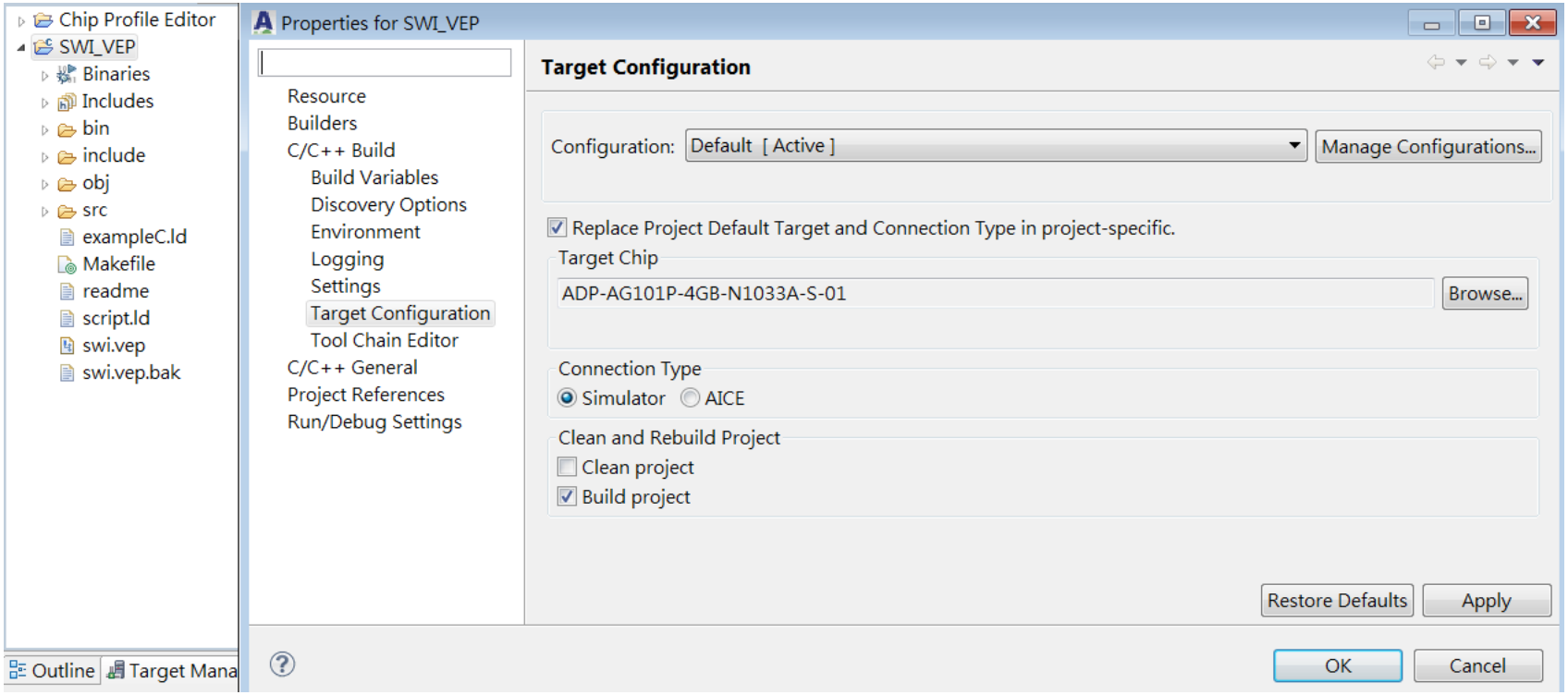
新增後即顯示於下

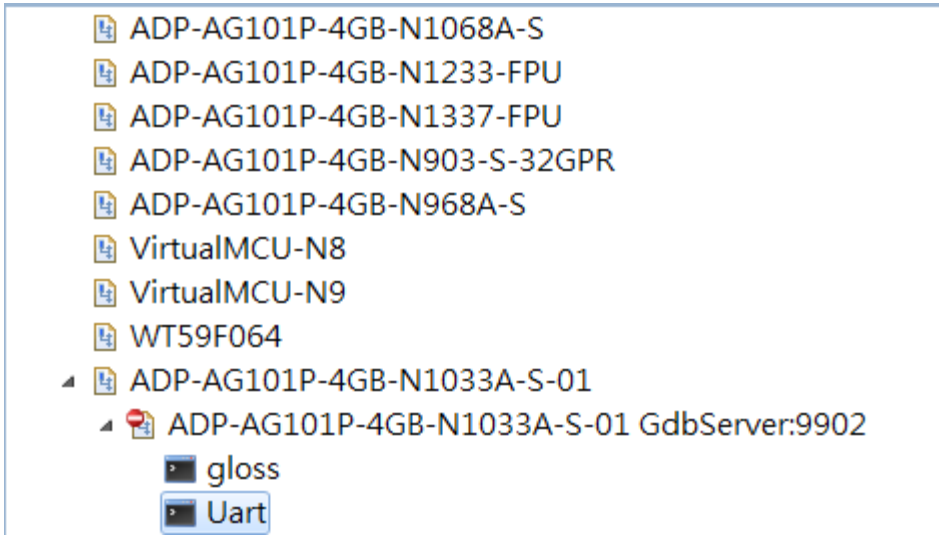

Targets
ADP-AG101P-16MB-N801-S
ADP-AG101P-4GB-N1033A-S
ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N903-S-32GPR
ADP-AG101P-4GB-N968A-S
VirtualMCU-N8
VirtualMCU-N9
WT59F064
ADP-AG101P-4GB-N1033A-S-01
Generic Targets
Running Target

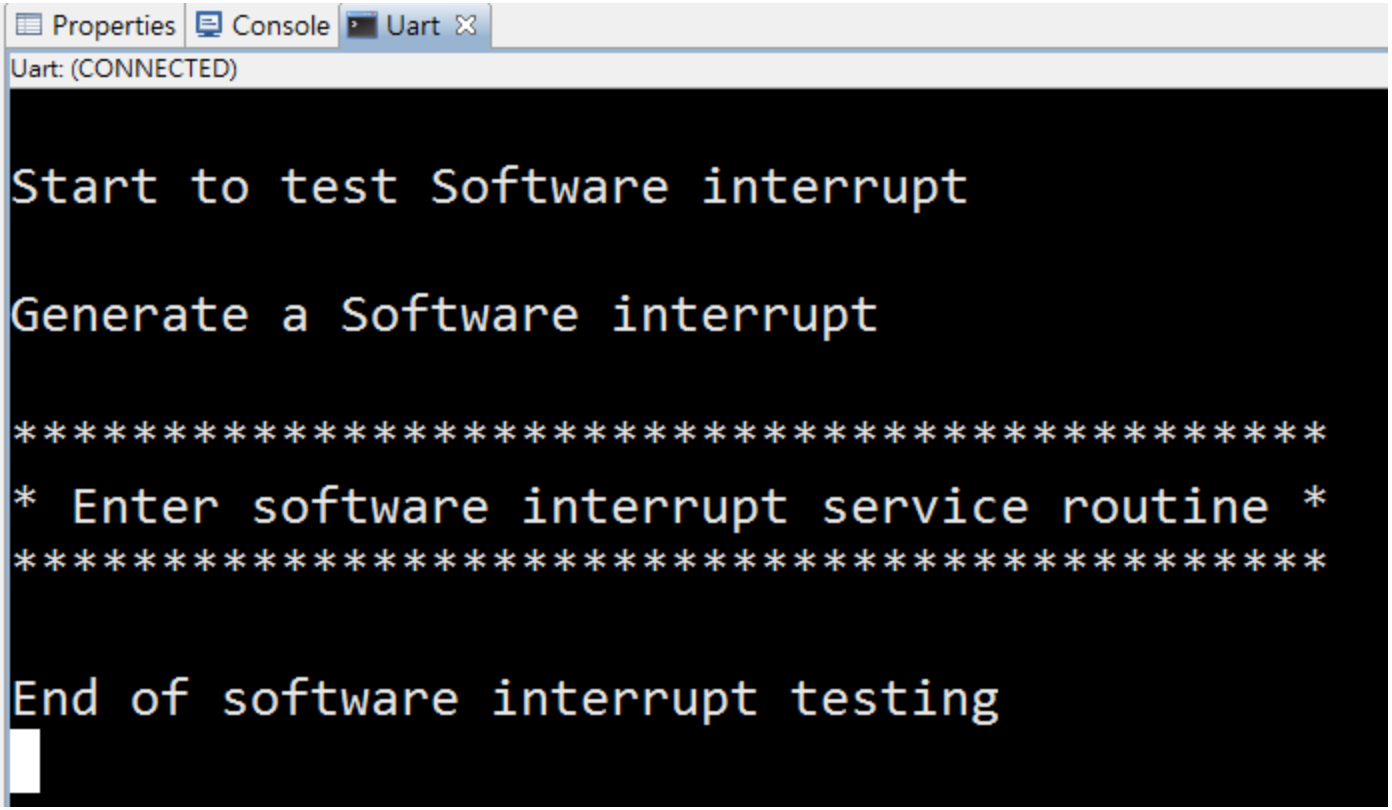
原SWI_VEP需設定新的目標




Setup System Calls
ADP-AG101P-4GB-N1033A-S-01
Name
Description
Append CPU Option
VIOS
VIOS Mode
--config-default-exception-support 1 --environment user
RAW
RAW Mode
--config-default-exception-support 0 --environment operating
VIOS mode:
Any OS or applications can safely assume the system call services and exception handlers will be handled by the Simulator.
RAW mode:
The Simulator won't handle system call services and exception handlers.
It is OS or applications' responsibility to implement the system call and exception handlers
OK
Cancel


Chip Profile Editor
SWI_VEP
Binaries
Includes
bin
include
obj
src
exampleC.ld
Makefile
readme
script.ld
swi.vep
swi.vep.bak
Outline
Target Mana
Properties for SWI_VEP
Resource
Builders
C/C++ Build
Build Variables
Discovery Options
Environment
Logging
Settings
Target Configuration
Tool Chain Editor
C/C++ General
Project References
Run/Debug Settings
Target Configuration
Configuration: Default [Active]
Manage Configurations...
Replace Project Default Target and Connection Type in project-specific.
Target Chip
ADP-AG101P-4GB-N1033A-S-01
Browse...
Connection Type
Simulator
AICE
Clean and Rebuild Project
Clean project
Build project
Restore Defaults
Apply
OK
Cancel


ADP-AG101P-4GB-N1068A-S
ADP-AG101P-4GB-N1233-FPU
ADP-AG101P-4GB-N1337-FPU
ADP-AG101P-4GB-N903-S-32GPR
ADP-AG101P-4GB-N968A-S
VirtualMCU-N8
VirtualMCU-N9
WT59F064
ADP-AG101P-4GB-N1033A-S-01
ADP-AG101P-4GB-N1033A-S-01 GdbServer:9902
gloss
Uart


Properties
Console
Uart
Uart: (CONNECTED)
Start to test Software interrupt
Generate a Software interrupt
****
* Enter software interrupt service routine *
****
End of software interrupt testing

Q4