

Advantech AE Technical Share Document

Date	2020/2/18	SR#	1-4092753678
Category	■FAQ □SOP	Related OS	EdgeLink image
Abstract	How to write a C program to read/write tag value?		
Keyword	DC_Tag		
Related Product	ADAM-3600, ECU-1152, ECU-1251, ECU-1051		

■ Problem Description:

This document demonstrates the setting SOP of making a C program to read/write IO data of iRTU devices.

Testing environment: EdgeLink Development Environment

https://support.advantech.com/support/DownloadSRDetail_New.aspx?SR_ID=1-1N8DC6E&Doc_Source=Download

Library: DCTag_SDK_2.1.1

https://support.advantech.com/support/DownloadSRDetail_New.aspx?SR_ID=1-1DGHI7U&Doc_Source=Download

■ Answer:

Step 1. Copy-past DCTagSDK_2.1.1.tar.gz into development environment.

Step 2. Un-tar the file

```
# tar zxvf DCTagSDK_2.1.1.tar.gz
```

```
root@ubuntu:/home/ae/Downloads# tar zxvf DCTagSDK_2.1.1.tar.gz
doc/
doc/libDCTag.chm
examples/
examples/dc_tag_write.c
examples/dc_tag_read.c
examples/dc_tag_read_subscription.c
examples/Makefile
examples/dc_tag_monitor.c
examples/dc_tag_owner.c
examples/dc_tag_update.c
include/
include/DCTag.h
include/QualityDefine.h
lib/
lib/libDCTag.so
lib/libAPAL.so
root@ubuntu:/home/ae/Downloads#
```

Step 3. Copy both files, MakeFile and dc_tag_copy, with this FAQ into this environment and store under examples folder.

Original:

```
root@ubuntu:/home/ae/Downloads# cd examples/
root@ubuntu:/home/ae/Downloads/examples# ls
dc_tag_monitor.c  dc_tag_read.c      dc_tag_update.c  Makefile
dc_tag_owner.c    dc_tag_read_subscription.c  dc_tag_write.c
```

After copy-paste:

```
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1# cd examples/
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1/examples# ls
dc_tag_copy.c      dc_tag_read.c      dc_tag_write.c
dc_tag_monitor.c   dc_tag_read_subscription.c  Makefile
dc_tag_owner.c     dc_tag_update.c     output
```

Step 4. Compile the files with command.

Compile all files: #make

```
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1/examples# make
Compiling: dc_tag_owner
Compiling: dc_tag_read
Compiling: dc_tag_write
Compiling: dc_tag_read_subscription
Compiling: dc_tag_update
Compiling: dc_tag_monitor
Compiling: dc_tag_copy
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1/examples#
```

Compile only dc_tag_copy: #make dc_tag_copy

```
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1/examples# make dc_tag_copy
Compiling: dc_tag_copy
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1/examples#
```

Step 5. Copy-paste the compile result to ADAM-3600. If the IP address of ADAM-3600 is 172.16.12.175.

scp output/nodeidtest root@172.16.12.175:/home/root/

scp filePath/filename account_of_target@IP_of_target:filePath

```
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1/examples# scp output/dc_tag_copy r
oot@172.16.12.175:/home/root
root@172.16.12.175's password:
dc_tag_copy                                100% 18KB 18.3KB/s 00:00
root@ubuntu:/home/ae/Downloads/DCTagSDK_2.1.1/examples#
```

Step 6. Use putty to connect with ADAM-3600. Execute the file on ADAM-3600.

Step 7. Execute under folder /home/root with command ./dc_tag_copy "tag1" "tag2"

This example: write DO value according to DI value.

Case1: DI0 = 1, DO0 = 0. ➔ DI0 = 1, DO0 = 1.

Case2: DI0 = 0, DO0 = 1. ➔ DI0 = 0, DO0 = 0.

```

root@172.16.12.175
root@adam3600:~# ./dc_tag_copy "BoardIO:DI_0" "BoardIO:DO_0"
Before copy:
BoardIO:DI_0, value = 0.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:38 (1395552998.895455)
BoardIO:DO_0, value = 1.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:38 (1395552998.910599)

Write BoardIO:DO_0 with value = 0.0000000000000000 return: 0
Case1

After copy:
BoardIO:DI_0, value = 0.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:41 (1395553001.880456)
BoardIO:DO_0, value = 0.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:41 (1395553001.895529)
root@adam3600:~# ./dc_tag_copy "BoardIO:DI_0" "BoardIO:DO_0"
Before copy:
BoardIO:DI_0, value = 1.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:56 (1395553016.155441)
BoardIO:DO_0, value = 0.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:56 (1395553016.170524)

Write BoardIO:DO_0 with value = 1.0000000000000000 return: 0
Case2

After copy:
BoardIO:DI_0, value = 1.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:59 (1395553019.160545)
BoardIO:DO_0, value = 1.000000, quality = 0000H, timestamp.UTC = 2014-03-23 05:3
6:59 (1395553019.175617)
root@adam3600:~#

```