

Iperf Tool SOP

Revision Date	Revision	Description	Author
March/2018	V1.0	Initial release	ICG AE Jacky.Lin

Abstract

- ❖ This SOP explains how to use the Iperf tool (Open source third party tool) to measure the throughput in wireless application.
- ❖ Related products:
EKI-6232, EKI-633x, EKI-136x-BE
- ❖ Requirement: Advantech Wi-Fi device ,Third party Tool_Iperf , PC
- ❖ Appendix:
 - Command for printing help information
 - Command for exporting the result to the txt file



Download Iperf Program

Download Iperf Tool

- Please download the iperf program from the following website
 - <https://iperf.fr/iperf-download.php#windows>
- Note: The command in different iperf version would be different. Please visit the official website for detail description. Here we will use the iperf 3.1.3 for example.

Download iPerf3 and original iPerf pre-compiled binaries

Note that iPerf3 is not backwards compatible with iPerf2.

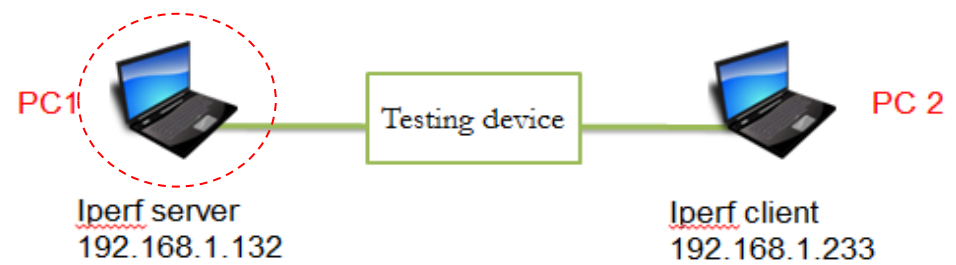


[Windows 64 bits](#) compiled by Vivien Guéant. ([sha256](#))

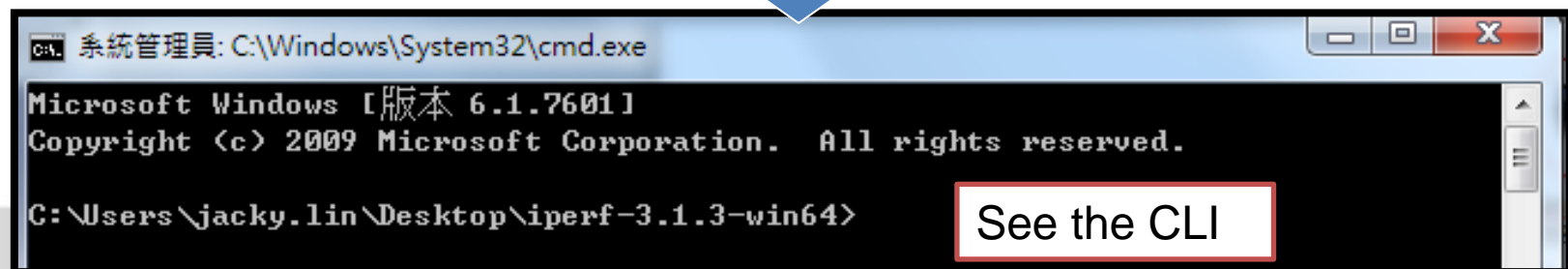
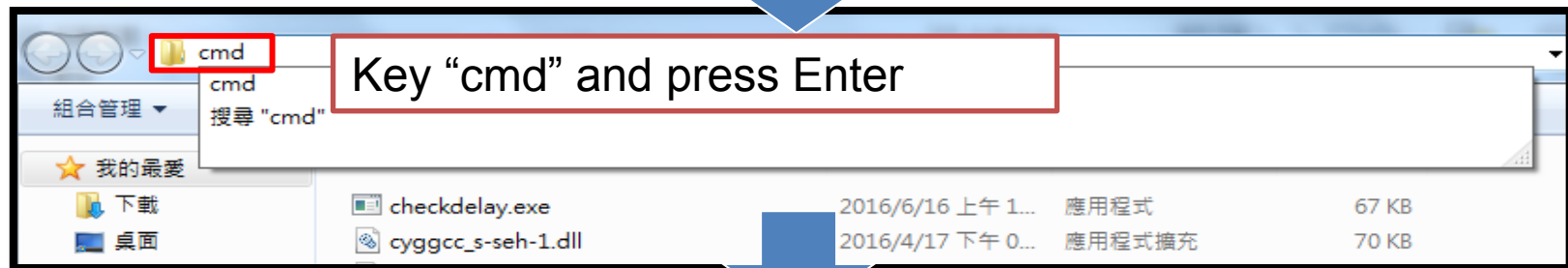
- [iPerf 3.1.3](#) (8 jun 2016 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 3.1.2](#) (1 fev 2016 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 3.0.12](#) (8 jun 2016 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 3.0.11](#) (9 jan 2015 - 1.3 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 2.0.9](#) (6 jun 2016 - 1.7 MiB for Windows Vista 64bits to Windows 10 64bits)
- [iPerf 2.0.8b](#) (17 sep 2015 - 1.6 MiB for Windows Vista 64bits to Windows 10 64bits)

Iperf Server Configuration

Execute cmd.exe

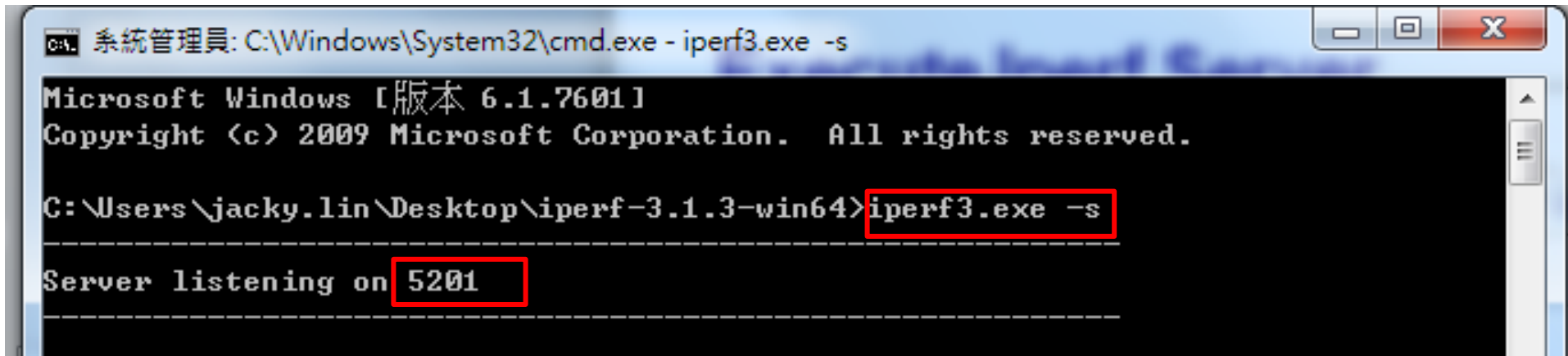


- Step 1 :Open the iperf folder on **PC1** and Key “**cmd**” to execute the cmd.exe



Execute Iperf Server

- Enter the command “**iperf3.exe -s**” and press “Enter”. Then, the server’s 5201 port will be opened.

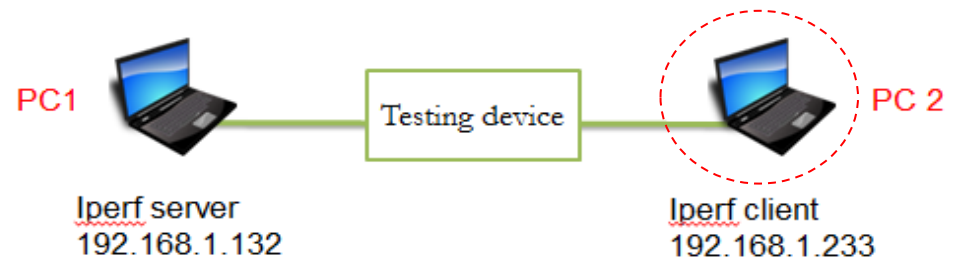
A screenshot of a Windows Command Prompt window titled "系統管理員: C:\Windows\System32\cmd.exe - iperf3.exe -s". The window shows the Microsoft Windows version 6.1.7601 copyright notice. The command "C:\Users\jacky.lin\Desktop\iperf-3.1.3-win64>iperf3.exe -s" is entered, with "iperf3.exe -s" highlighted by a red box. The output "Server listening on 5201" is displayed, with "5201" highlighted by a red box.

```
系統管理員: C:\Windows\System32\cmd.exe - iperf3.exe -s
Microsoft Windows [版本 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

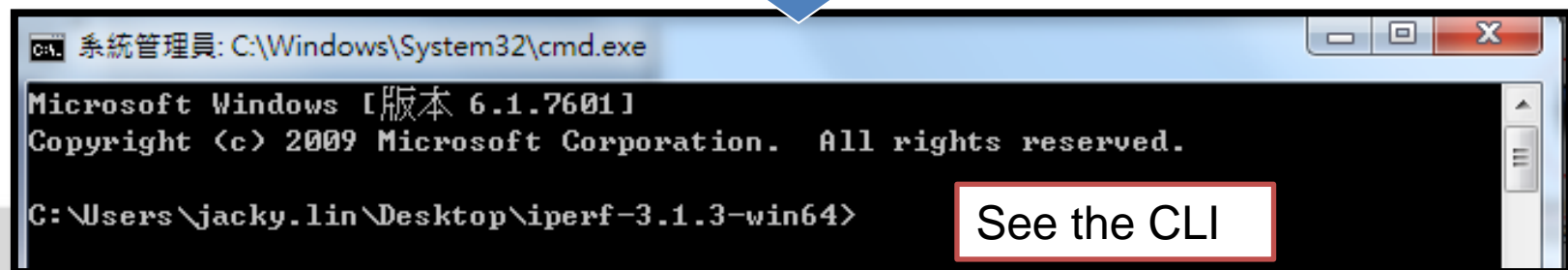
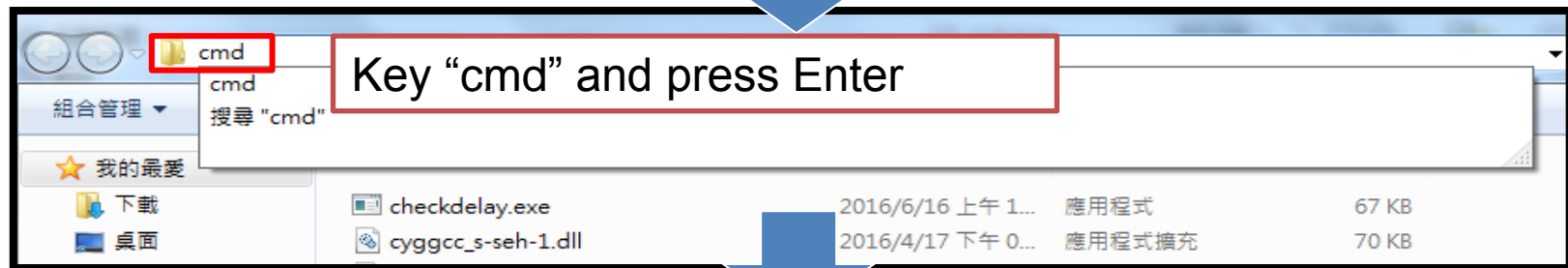
C:\Users\jacky.lin\Desktop\iperf-3.1.3-win64>iperf3.exe -s
-----
Server listening on 5201
-----
```

Iperf Client Configuration

Execute cmd.exe



- Step 1 :Open the iperf folder on **PC2** and Key “cmd” to to execute the cmd.exe



Execute Iperf Client

- Enter the command “**iperf3.exe -c server IP -i 1 -t 30 -P 5 -w 128k**”. Then ,press Enter.
- Common used command
 - -i :record time on the CLI (Ex. **-i 1**=> record every 1s)
 - -t :testing period(Ex. **-t 30**=> run the test for 30s)
 - -P: TCP session (Ex. **-P 5**=> run 5 TCP session simultaneously)
 - -w : TCP slide window size (Ex. **-w 128k**=> 128k TCP slide window)



The screenshot shows a Windows Command Prompt window titled "系統管理員: C:\Windows\System32\cmd.exe". The window contains the following text:

```
iperf3 homepage at: http://software.es.net/iperf/  
Report bugs to: https://github.com/esnet/iperf  
  
C:\Users\jacky.lin\Desktop\iperf-3.1.3-win64>iperf3.exe -c 192.168.1.132 -i 1 -t  
30 -P 5 -w 128k
```

A red rectangular box highlights the command `iperf3.exe -c 192.168.1.132 -i 1 -t 30 -P 5 -w 128k`. Below the command prompt, there is a white text box with the text "Enter the command".

Note : Different parameters will affect the testing result. Users need to define the parameters in their scenario by themselves. For detail parameter description, you may check the information in appendix “see all command”.

If you just run the test for knowing roughly throughput, you can refer the above parameters.

Check the result

Check the result on Iperf client

```
C:\Users\jacky.lin\Desktop\iperf-3.1.3-win64>iperf3.exe -c 192.168.1.132 -i 1 -t 30 -P 5 -w 128k
Connecting to host 192.168.1.132, port 5201
```

```
[ 41] local 192.168.1.52 port 51991 connected to 192.168.1.132 port 5201
[ 61] local 192.168.1.52 port 51992 connected to 192.168.1.132 port 5201
[ 81] local 192.168.1.52 port 51993 connected to 192.168.1.132 port 5201
[101] local 192.168.1.52 port 51994 connected to 192.168.1.132 port 5201
[121] local 192.168.1.52 port 51995 connected to 192.168.1.132 port 5201
```

Iperf client build up 5 TCP sessions

ID	Interval		Transfer	Bandwidth
[41]	0.00-1.00	sec	768 KBytes	6.29 Mbits/sec
[61]	0.00-1.00	sec	768 KBytes	6.29 Mbits/sec
[81]	0.00-1.00	sec	768 KBytes	6.29 Mbits/sec
[101]	0.00-1.00	sec	768 KBytes	6.29 Mbits/sec
[121]	0.00-1.00	sec	768 KBytes	6.29 Mbits/sec

[SUM]	0.00-1.00	sec	3.75 MBytes	31.5 Mbits/sec
-------	-----------	-----	-------------	----------------

Throughput Summary for 5 TCP session from 0-1s

[41]	1.00-2.00	sec	640 KBytes	5.24 Mbits/sec
[61]	1.00-2.00	sec	640 KBytes	5.24 Mbits/sec
[81]	1.00-2.00	sec	640 KBytes	5.24 Mbits/sec
[101]	1.00-2.00	sec	640 KBytes	5.24 Mbits/sec
[121]	1.00-2.00	sec	640 KBytes	5.24 Mbits/sec
[SUM]	1.00-2.00	sec	3.12 MBytes	26.2 Mbits/sec

ID	Interval		Transfer	Bandwidth	
[41]	0.00-30.00	sec	19.8 MBytes	5.52 Mbits/sec	sender
[41]	0.00-30.00	sec	19.6 MBytes	5.48 Mbits/sec	receiver
[61]	0.00-30.00	sec	19.5 MBytes	5.45 Mbits/sec	sender
[61]	0.00-30.00	sec	19.4 MBytes	5.42 Mbits/sec	receiver
[81]	0.00-30.00	sec	19.5 MBytes	5.45 Mbits/sec	sender
[81]	0.00-30.00	sec	19.4 MBytes	5.41 Mbits/sec	receiver
[101]	0.00-30.00	sec	19.6 MBytes	5.49 Mbits/sec	sender
[101]	0.00-30.00	sec	19.4 MBytes	5.43 Mbits/sec	receiver
[121]	0.00-30.00	sec	19.6 MBytes	5.49 Mbits/sec	sender
[121]	0.00-30.00	sec	19.4 MBytes	5.44 Mbits/sec	receiver
[SUM]	0.00-30.00	sec	98.0 MBytes	27.4 Mbits/sec	sender
[SUM]	0.00-30.00	sec	97.2 MBytes	27.2 Mbits/sec	receiver

Throughput Summary for 5 TCP session from 0-30s

Appendix

Command for printing help information

- “**iperf.exe –help**” to see all command

```
C:\Users\jacky.lin\Desktop\iperf-3.1.3-win64>iperf3.exe -help
Usage: iperf [-s|-c host] [options]
       iperf [-h|--help] [-v|--version]

Server or Client:
  -p, --port #          server port to listen on/connect to
  -f, --format [kmgKMG] format to report: Kbits, Mbits, KBytes, MBytes
  -i, --interval #      seconds between periodic bandwidth reports
  -F, --file name       xmit/recv the specified file
  -B, --bind <host>     bind to a specific interface
  -U, --verbose         more detailed output
  -J, --json            output in JSON format
  --logfile f           send output to a log file
  -d, --debug           emit debugging output
  -v, --version         show version information and quit
  -h, --help           show this message and quit

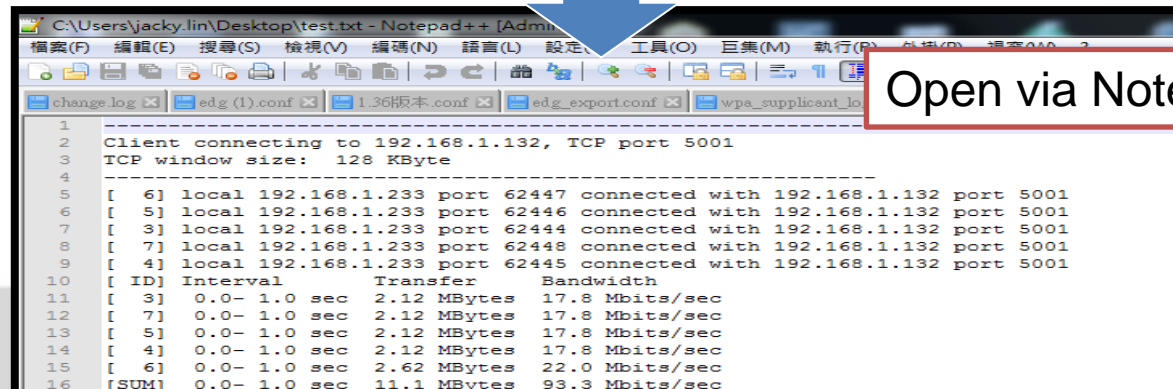
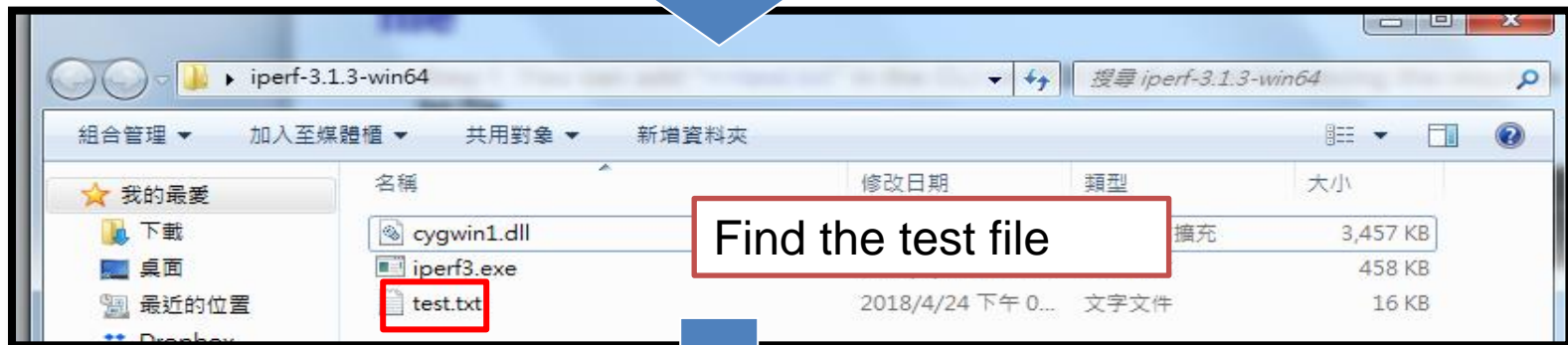
Server specific:
  -s, --server          run in server mode
  -D, --daemon          run the server as a daemon
  -I, --pidfile file    write PID file
  -1, --one-off         handle one client connection then exit
```

Command for exporting the result to the txt file

- Step 1 :You can add “>>test.txt” in the CLI on PC2 (iperf client) for saving the result as txt file
- Step 2: Find the test.txt in the iperf folder & Use Notepad++ to open it

```
C:\Users\jacky.lin\Desktop\iperf-3.1.3-win64>iperf3.exe -c 192.168.1.132 -i 1 -t 30 -P 5 -w 128k>>test.txt
```

add “>>test.txt” command





Enabling an Intelligent Planet

Enabling an Intelligent Planet

ADVANTECH