Preliminary Debug Guide for Wiwynn / 3rd Party Labs use only

Reliability Engineering / Hugo SF Tsai 2022/07/18

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Purpose / Content

If you found a failed item in test result or the DUT (Device Under Test) cannot be powered into OS normally, please follow below instructions to clarify the issue preliminarily. Then sum up the check results and sent it to Wiwynn members.

- **① Collect IPMI Logs under OS**
- ② Collect SEL with BMC LAN
- **3 Check Windows Event Viewer**
- Check Post Code Status
- ⑤ Check CPLD LED Status

Files Download Link:

https://github.com/Monkieff/PreliminaryDebugGuide



Collect IPMI Logs

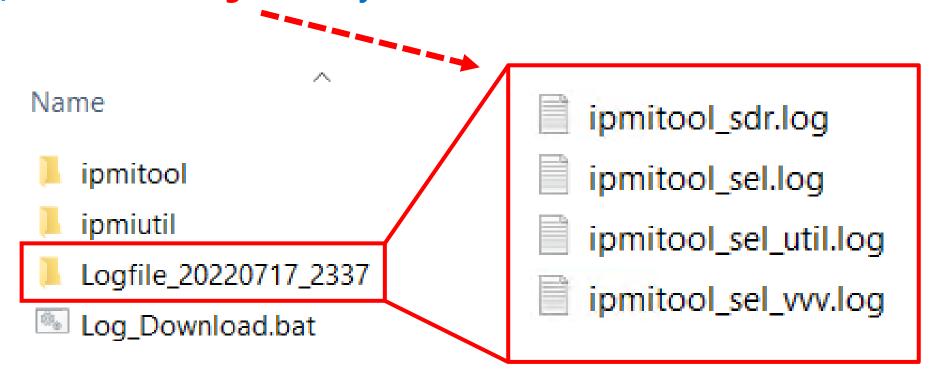
- 1) Login to DUT, place and unzip "IPMItools" to desktop.
- 2) Execute "Log_Download.bat" and wait until it finished.

```
Administrator: =Log_Download
                                                                                                                SEL Next ID: 0265
SEL Entry: 6502024c96d462200004e0ef70a64aff
ipmitool: missing OEM sensor type offset for 01
ipmitool: missing OEM sensor type for 0l
SEL Next ID: 0266
SEL Entry: 6602024c96d462200004e1ef6f0320ff
ipmitool: missing OEM sensor type offset for 0l
ipmitool: missing OEM sensor type for 01
oem sensor type e1 using standard type supplied description
SEL Next ID: 0267
SEL Entry: 6702024c96d462200004e1ef6f0340ff
ipmitool: missing OEM sensor type offset for 0l
ipmitool: missing OEM sensor type for 0l
oem sensor type e1 using standard type supplied description
SEL Next ID: 0268
SEL Entry: 6802025e96d4624100041f006f01ffff
SEL Next ID: 0269
SEL Entry: 6902dc5e96d462370100004e96d46200
SEL Next ID: 026a
SEL Entry: 6a0202a996d462200004e0ef70a101ff
ipmitool: missing OEM sensor type offset for 01
ipmitool: missing OEM sensor type for 0l
SEL Next ID: 026b
SEL Entry: 6b02025d98d462200004e0eff0a640ff
ipmitool: missing OEM sensor type offset for 0l
ipmitool: missing OEM sensor type for 01
Waiting for 0 seconds, press CTRL+C to quit ...
Log files collection complete.
Press any key to continue . . . _
```



Collect IPMI Logs

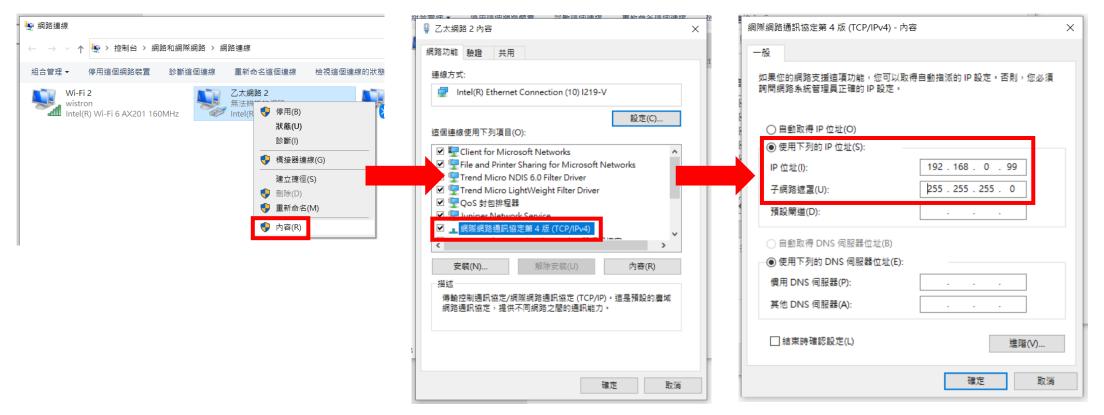
3) Send these 4 logs to Wiwynn members





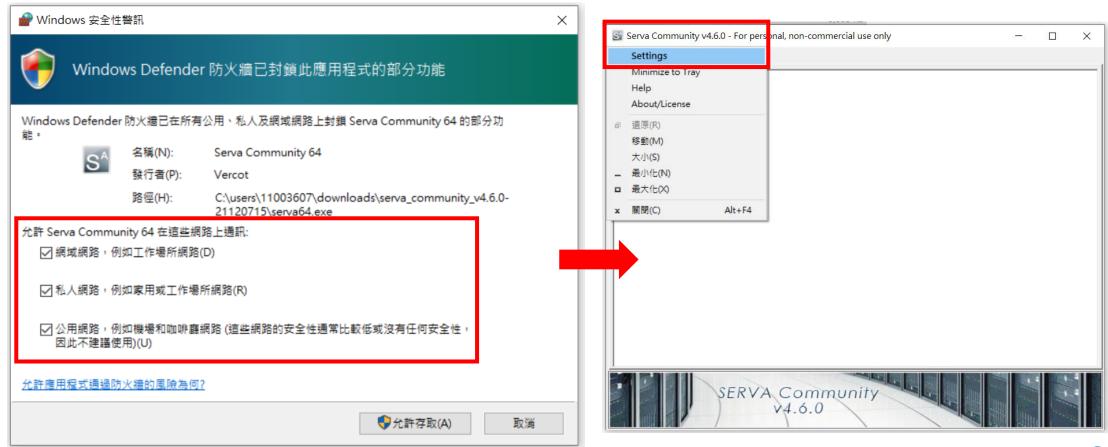


- 1) Unzip Serva community version to your PC/NB
- 2) Connect the LAN between your PC/NB and BMC LAN on DUT
- 3) Configure your LAN as below table (IP Address / Net Mask)



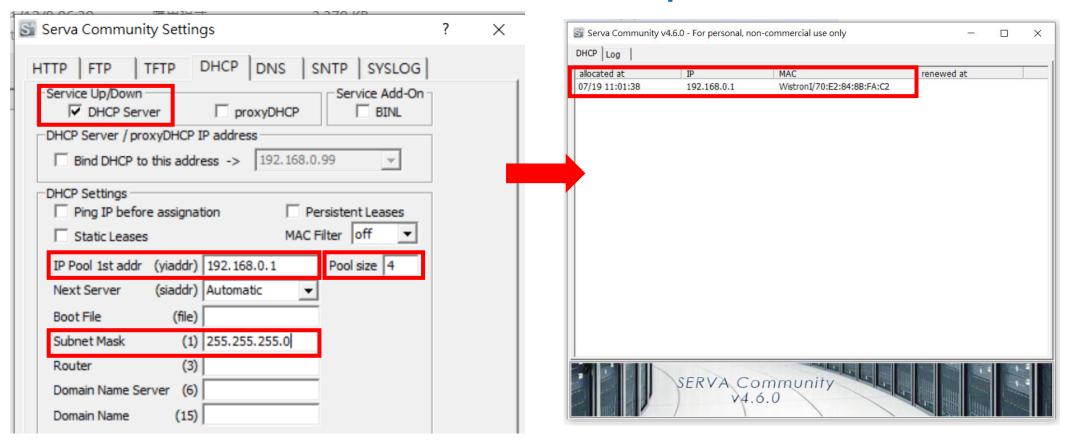


- 4) Open a Serva64.exe and agree to all firewall options
- 5) Click Serva Logo on title bar for settings





- 6) Switch to DHCP tab and set the following items
- 7) Click OK and wait until the IP address showed up



- 8) Go to the ipmitool folder and open a cmd window (type cmd in directory bar)
- 9) Type "ipmitool.exe -H 192.168.0.1 -U admin -P admin sel elist > sel.log" to download the SEL; Then send the log to Wiwynn members

```
D:\Projects\__ScriptBackup\Status_Check\IPMItools\ipmitool.exe -H 192.168.0.1 -U admin -P admin sel elist

1 | 07/18/2022 | 13:52:37 | Event Logging Disabled SEL | Log area reset/cleared | Asserted

2 | 07/19/2022 | 10:26:18 | Unknown BMC Health |

3 | 07/19/2022 | 10:28:01 | Unknown BMC Health |

4 | 07/19/2022 | 10:28:08 | Unknown BMC Health |

5 | 07/19/2022 | 10:58:56 | Unknown BMC Health |

6 | 07/19/2022 | 10:58:56 | Unknown BMC Health |

7 | 07/19/2022 | 10:59:34 | Unknown BMC Health |

8 | 07/19/2022 | 10:59:34 | Unknown BMC Health |

9 | 07/19/2022 | 11:11:48 | Unknown BMC Health |

a | 07/19/2022 | 11:12:05 | Unknown BMC Health |

D:\Projects\__ScriptBackup\Status_Check\IPMItools\ipmitool > ipmitool.exe -H 192.168.0.1 -U admin -P admin sel elist > sel.log

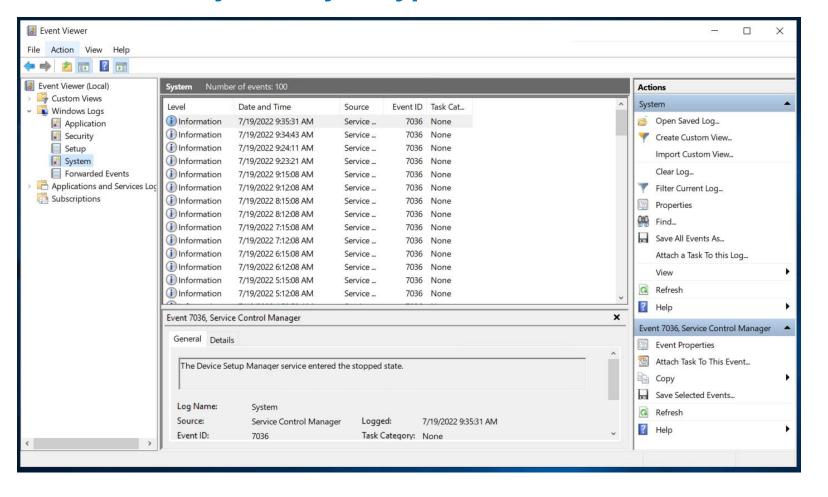
D:\Projects\__ScriptBackup\Status_Check\IPMItools\ipmitool >
```



Win Event Viewer Export to excel file

Windows Event Viewer

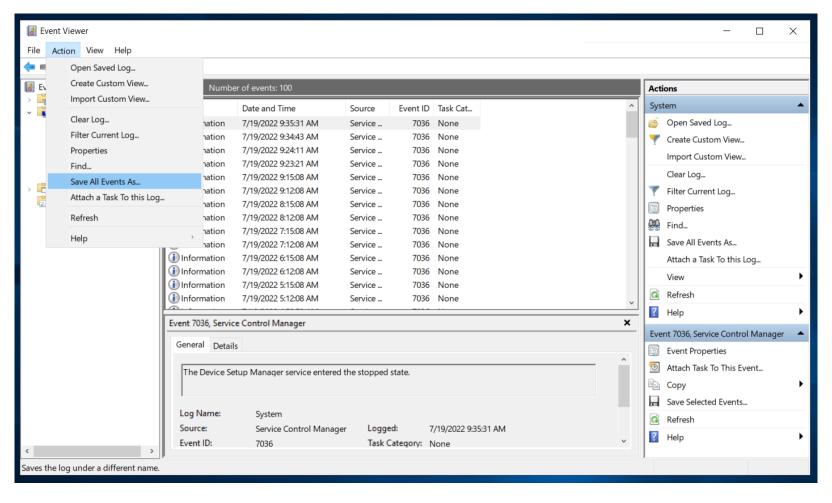
1) Open an Event Viewer (you can just type evert viewer in search bar).





Windows Event Viewer

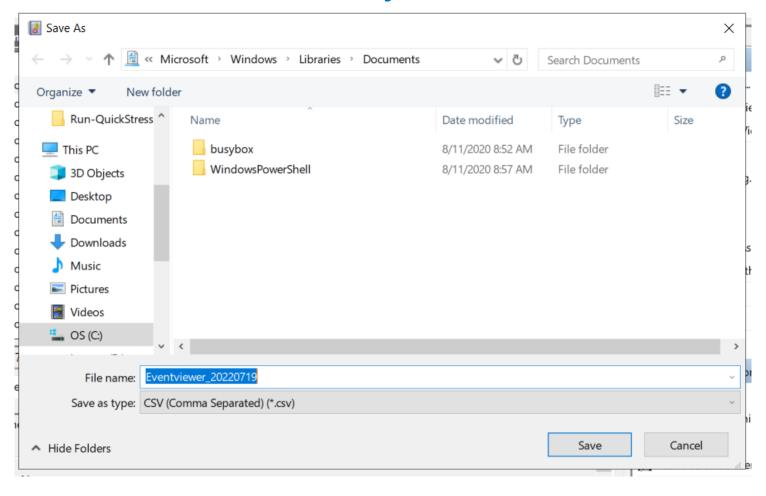
2) Choose Action > Save All Events As... in toolbar





Windows Event Viewer

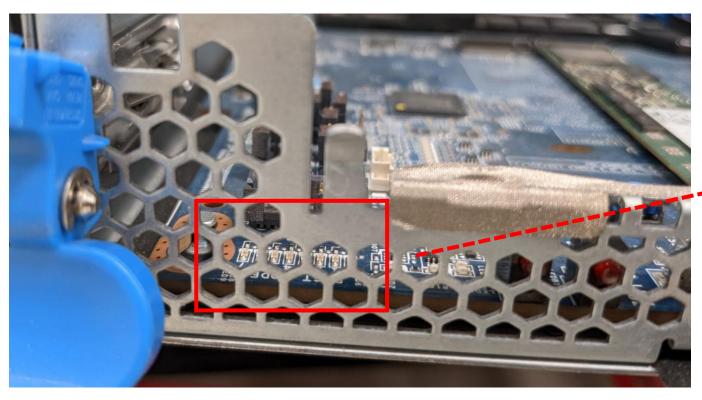
3) Save as a .csv file; then send it to Wiwynn members.

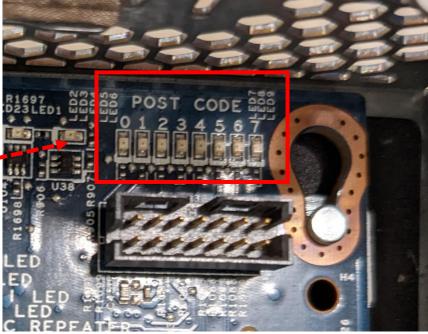






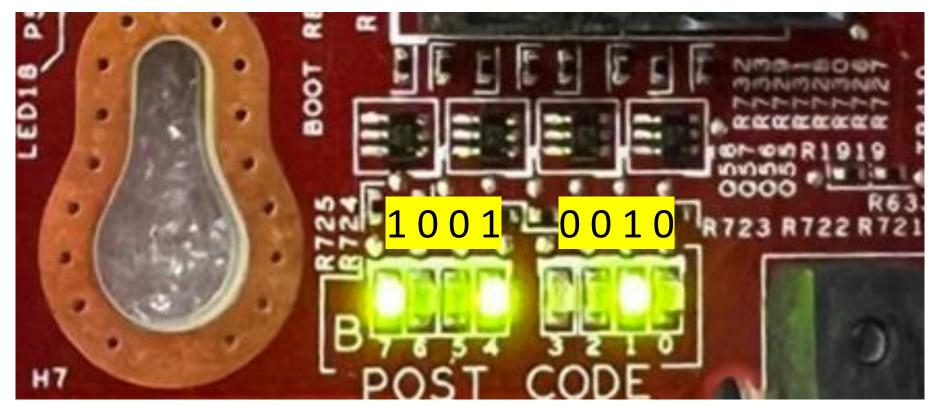
- 1) Check post code LED location before power on the DUT.
- 2) The post code were usually laid besides the I/O ports (or front panel).
- 3) Power on DUT and wait until the LED were stable (it may take up to 15min).







- 4) The post codes are 2 sets of binary numbers; we'll need to translate it into a set of hexadecimal numbers. LED Solid On means 1; Off means 0.
- 5) The following example is 1001 0010 in binary.





6) Translate the numbers from binary to hexadecimal; 1001 0010 means 92.

Binary, BIN	Decimal, DEC	Hexadecimal, HEX	Binary, BIN	Decimal, DEC	Hexadecimal, HEX
0000	0	0	1000	8	8
0001	1	1	1001	9	9
0010	2	2	1010	10	А
0011	3	3	1011	11	В
0100	4	4	1100	12	С
0101	5	5	1101	13	D
0110	6	6	1110	14	Е
0111	7	7	1111	15	F

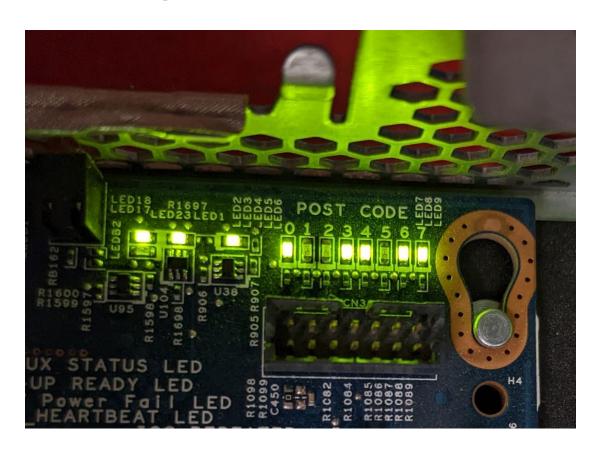


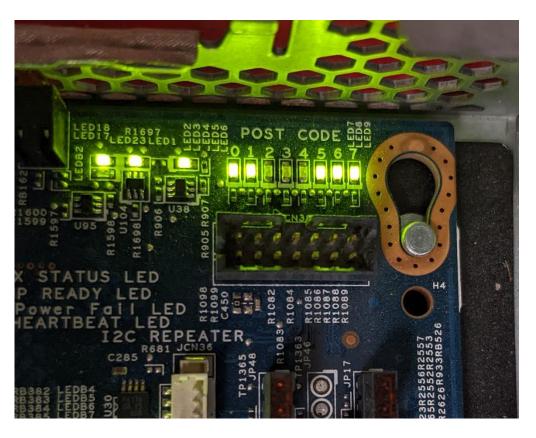
7) Use this AMI code table to check the boot-up status (or issue).

Post Code (Hexadecimal)	Description	
01	Power on	
91	Driver connecting is started	
92	PCI Bus Initialization	
A5/E3	OS boot up completely	
55	DIMM not installed properly	
FF	BIOS not initialized (CPU may not installed properly)	



8) Take a photo of LEDs and send it to Wiwynn member.



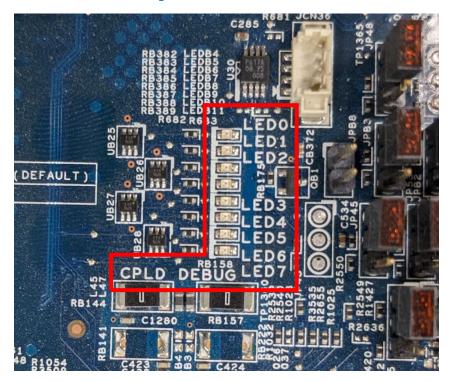


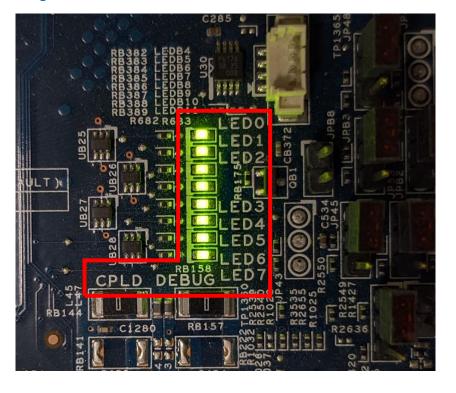




CPLD

- 1) Check CPLD LED location before power on the DUT.
- 2) Power on DUT and wait until LED were stable (it may take up to 15min).
- 3) CPLD LED should be all solid on after normal a boot up.
- 4) If not, take a photo and send it to Wiwynn members.







CPLD

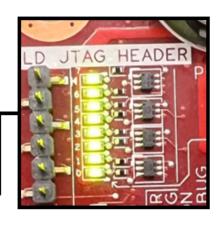
5) You can refer the LED status to below tables for the power state checking; this might be slightly different from each project.

STBY Power State				
State Name	LED_PWR_STAGE_[7:0]			
STBY	0X00 (0000_0000)			
BMC_PWRGD	0X01 (0000_0001)			
CPU_AUX	0X02 (0000_0010)			



Normal Power On			
State Name	LED_PWR_STAGE_[7:0]		
OFF	0X03 (0000_0011)		
P12V	0X04 (0000_0100)		
P3V3	0X05 (0000_0101)		
P1V8	0X06 (0000_0110)		
POV9	0X07 (0000_0111)		
VDD_11	0X08 (0000_1000)		
VDD_VDDIO	0X09 (0000_1001)		
VDD_SOC	0X0A (0000_1010)		
VDD_CORE_0	OXOB (0000_1011)		
VDD_CORE_1	0X0C (0000_1100)		
PWR_GOOD	0X0D (0000_1101)		
PWROK	OXOE (0000_1110)		
RESET	OXOF (0000_1111)		
ON	OXFF (1111_1111)		

Normal Power Off				
State Name	LED_PWR_STAGE_[7:0]			
CPU_OFF	0X10 (0001_0000)			
POV9_OFF	0X11 (0001_0001)			
P1V8_OFF	0X12 (0001_0010)			
P3V3_OFF	0X13 (0001_0011)			
P12V_OFF	0X14 (0001_0100)			





Contact Info Wiwynn Members

Contact Info

If you have any concern of questions, please feel free to contact the following members for instant help:

- Project Leader: 黃彥霖 / Edward Huang
 - Edward_YL_Huang@wiwynn.com / 0972-905-302
- Engineer: 吳穎儒 / Steven Wu
 - Steven_YJ_Wu@wiwynn.com / 0920-617-528
- Engineer: 蔡昇峰 / Hugo Tsai
 - Hugo_SF_Tsai@wiwynn.com / 0921-958-752





Thanks!