How to install Ubuntu 21.04 Live server by console redirection.

- 1. Suggesting user uses latest RUFUS (<u>https://rufus.ie/</u>, ex: 3.15) to make Ubuntu 21 server image (iso file)as bootable USB device
- 2. Kindly press del key into BIOS, and set "Post & Boot"-> CSM support-> Video as Do not launch The step is disable VGA ROM.

Aptio Setup Utility	- Copyright (C) 2021 Post 8	American Megatrends, Inc. A Boot
CSM Support Boot option filter Network Storage Video Other PCI devices	[Enabled] [UEFI and Legacy] [Do not launch] [Legacy] [Do not launch] [UEFI]	E Controls the execution of UEFI and Legacy Video OpROM
		><: Select Screen : Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1276.	Copyright (C) 2021 Ame	erican Megatrends, Inc.

3. For UEFI installation, Please choose "UEFI : USB XXXXX " to boot from Ubuntu 21 bootable USB device

Aptio Setup Utility - Copyright (C) 2021 Main Platform Hardware Server Mgmt Post	American Megatrends, Inc. & Boot Security Save & Exit
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Options Save Changes Discard Changes Restore Defaults	
Save as User Defaults Restore User Defaults Boot Override UEFI: Built-in EFI Shell USB DISK 2.0 PMAP UEFI: USB DISK 2.0 PMAP, Partition 1	J ><: Select Screen : Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

3.1 Please press "e" to modify Ubuntu 21 Grub



Add "console=ttyS0,115200" in grub setting, and Press Ctrl-x or F10 to boot in Ubuntu 21

GNU GRUB version 2.04	
<pre>setparams 'Ubuntu Server' set gfxpayload=keep linux /casper/vmlinuz console=ttyS0,115200 initrd /casper/initrd</pre>	
Minimum Emacs-like screen editing is supported. TAB lists completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a command-line or ESC to discard edits and return to the GRUB m	enu.

4. For Legacy installation, Please choose "USB XXXXX " to boot from Ubuntu 21 bootable USB device

Aptio Setup Utility - Copyright (C)	2021 American Megatrends, Inc.
Main Platform Hardware Server Mgmt	Post & Boot Security Save & Exit
Save Changes and Exit	
Discard Changes and Exit	
Save Changes and Reset	
Discard Changes and Reset	
bibeara onangeb and Rebet	
Save Options	
Save Changes	
Discard Changes	
Restore Defaults	
Save as User Defaults	li l
Restore User Defaults	><: Select Screen
	: Select Item
Boot Override	Enter: Select
UEFI: Built-in EFI Shell	+/-: Change Opt.
USB DISK 2.0 PMAP	F1: General Help
UEFI: USB DISK 2.0 PMAP, Partition 1	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit

4.1Please press "e" to modify Ubuntu 21 Grub

GNU GRUB Version 2.04

**Ubuntu Server
* Test memory *
* * *
* *
* *
* *
* *
* *
* *
* *
* *
* *
* *

Use the * and * keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line.

Add "console=ttyS0,115200" in grub setting, and Press Ctrl-x or F10 to boot in Ubuntu 21

	GNU GRUB version 2.04	
*****	*************	*****
*setpa	arams 'Ubuntu Server'	*
*		*
*	set gfxpayload=keep	*
*	linux /casper/vmlinuz console=ttyS0,115200	*
*	initrd /casper/initrd	*
*		*
*		*
*		*
*		*
*		*
*		*
*		*
*****	*****	****
I	Minimum Emacs-like screen editing is supported. TAB lists	
(completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for	
	a command-line or ESC to discard edits and return to the GRUB men	u.

When Grub setting is correct, console utility will show following boot message

[0.071016]	IOAPIC[4]: apic id 12, version 32, address 0xfec18000, GSI 48-55
[0.071022]	IOAPIC[5]: apic_id 15, version 32, address 0xfec20000, GSI 72-79
[0.071028]	IOAPIC[6]: apic_id 16, version 32, address 0xfec28000, GSI 80-87
[0.071033]	IOAPIC[7]: apic_id 17, version 32, address 0xfec30000, GSI 88-95
[0.071038]	IOAPIC[8]: apic_id 18, version 32, address 0xfec38000, GSI 96-103
[0.071046]	ACPI: INT_SRC_OVR (bus 0 bus_irq 0 global_irq 2 dfl dfl)
[0.071049]	ACPI: INT_SRC_OVR (bus 0 bus_irq 9 global_irq 9 high level)
[0.071063]	Using ACPI (MADT) for SMP configuration information
]	0.071065]	ACPI: HPET id: 0x8086a701 base: 0xfed00000
[0.071069]	TSC deadline timer available
[0.071071]	smpboot: Allowing 96 CPUs, 0 hotplug CPUs
[0.071099]	PM: hibernation: Registered nosave memory: [mem 0x0000000-0x0000
Offf]		
[0.071102]	PM: hibernation: Registered nosave memory: [mem 0x000a0000-0x000f
ffff]		
[0.071106]	PM: hibernation: Registered nosave memory: [mem 0x5d2a6000-0x5d2a
6fff]		
[0.071109]	PM: hibernation: Registered nosave memory: [mem 0x5d2ae000-0x5d2a
efff]		
[0.071110]	PM: hibernation: Registered nosave memory: [mem 0x5d2af000-0x5d2a
ffff]		
[0.071113]	PM: hibernation: Registered nosave memory: [mem 0x5d2c0000-0x5d2c
Offf]		
[0.071115]	PM: hibernation: Registered nosa

5. Following picture is Ubuntu 21 welcome message, suggesting user chooses "Continue in basic mode" to install Ubuntu 21.



6. Following setting is "Keyboard configuration", suggesting user chooses default setting (English (US))

Keyboard configuration	[Help]
Please select the layout of the keyboard directly attached any.	to the system, if
Layout: [English (US)	v]
Variant: [English (US)	v]
[Back]	

7. Following setting is "Network connections", suggesting user chooses "Continue without network" to cancel Network setting during OS installation



8. Following setting is "Guided storage configuration, please follows requirement to partition HDD.

Guided storage configuration	[Help]
Configure a guided storage layout, or create a custom one:	
(<mark>X</mark>) Use an entire disk	
[SQF-S25M8-12 local disk 120.999G 8G_86F807150 60100000012	x v]x x x
[X] Set up this disk as an LVM group	X
[] Encrypt the LVM group with LUKS	X X
Passphrase:	X
Confirm passphrase:	V
[Done] [Back]	

Storage configuration	[Help]
FILE SYSTEM SUMMARY		^
MOUNT POINT SIZE [/ 59.99 [/boot 1.00	TYPE DEVICE TYPE DGG new ext4 new LVM logical volume >] DGG new ext4 new partition of local disk >]	
AVAILABLE DEVICES		
DEVICE [ubuntu-vg (new) free space	TYPE SIZE LVM volume group 119.992G > 59.996G]
[Create software RAII [Create volume group) (md) >] (LVM) >]	
	[<mark>D</mark> one] [Reset] [Back]	
Storage configuration	[Help]
Storage configuration FILE SYSTEM SUMMARY	[Help]] ~ ~
Storage configuration FILE SYSTEM SUMMARY	Image: constructive action qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq	===== ^ x k x
Storage configuration FILE SYSTEM SUMMARY lqqqqqqqqqqqqqqqqqqqqq x x Selecting Continue x result in the los	[Help qqq Confirm destructive action qqqqqqqqqqqqqqqqqqqqqqqqqqqqq e below will begin the installation process and s of data on the disks selected to be formatted.] ~ x k x x x
Storage configuration FILE SYSTEM SUMMARY lqqqqqqqqqqqqqqqqqqq x x Selecting Continue x result in the los x x You will not be al x installation has a	[Help qqq Confirm destructive action qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq	==== ^ x k x x x x x x x x
Storage configuration FILE SYSTEM SUMMARY lqqqqqqqqqqqqqqqqqqqq x x Selecting Continue x result in the los x x You will not be al x installation has a x x Are you sure you y	qqq Confirm destructive action qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq	==== ^ x k x x x x x x x x x x x
Storage configuration FILE SYSTEM SUMMARY lqqqqqqqqqqqqqqqqqqqqq x x Selecting Continue x result in the los x x You will not be al x installation has x x Are you sure you x x x	<pre>[Help qqq Confirm destructive action qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq</pre>	==== ^ x k x x x x x x x x x x x x x x x x x
Storage configuration FILE SYSTEM SUMMARY lqqqqqqqqqqqqqqqqqqq x x Selecting Continue x result in the los x x You will not be al x installation has x x Are you sure you x x x mqqqqqqqqqqqqqqqqqqqqqqqqq	<pre>[Help qqq Confirm destructive action qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq</pre>	==== ^ x k x x x x x x x x x x x x z z z z

9. Following setting is "Profile setup", please follows requirement to set user profile and password.

Profile setup	[Help]
Enter the username and can configure SSH acces for sudo.	password you will use to log in to the system. You s on the next screen but a password is still needed
Your name:	tse
Your server's name:	tse The name it uses when it talks to other computers.
Pick a username:	tse
Choose a password:	* * * * *
Confirm your password:	* * * * *
	[Done]

10. Following setting is "SSH Setup", please follows requirement to install SSH server in OS

SSH Setup	[Help]
You can choose to ins access to your server	tall the OpenSSH server package to enable secure remote •
[<mark>×</mark>]	Install OpenSSH server
Import SSH identity:	[No v] You can import your SSH keys from Github or Launchpad.
Import Username:	
[X]	Allow password authentication over SSH
	[Done] [Back]

11. When user finishes all setting item, it will start to install Ubuntu 21 in HDD

Installing system	[Help]	
ladadadadadadadadadadadadadadadadadadad		
x setting up swap	^X	
x apply networking config	X	
x writing etc/fstab	X	
x configuring multipath	X	
x updating packages on target system	X	
x configuring pollinate user-agent on target	X	
x updating initramfs configuration	X	
x configuring target system bootloader	X	
x installing grub to target devices	X	
x finalizing installation	X	
x running 'curtin hook'	X	
x curtin command hook	X	
x executing late commands	X	
xfinal system configuration	X	
x configuring cloud-init	XX	
x installing openssh-server	VX	
wdddddddddddddddddddddddddddddddddddddd		
[View full log]		

And it will show "Install complete!" after OS installation finish, it may choose "Reboot Now" to reboot system.

Install complete!	[Help]
x configuring multipath	^X
x updating packages on target system	Х
x configuring pollinate user-agent on target	X
x updating initramfs configuration	X
x configuring target system bootloader	X
x installing grub to target devices	X
x finalizing installation	X
x running 'curtin hook'	X
x curtin command hook	X
x executing late commands	X
xfinal system configuration	X
x configuring cloud-init	X
x installing openssh-server	X
x restoring apt configuration	XX
xsubiquity/Late/run	VX
mdddddddddddddddddddddddddddddddddddd	
[View full log] [Reboot Now]	

12. Reboot system, and it will login Ubuntu 21 from HDD at next boot up

```
tse login: tse
Password:
Welcome to Ubuntu 21.04 (GNU/Linux 5.11.0-16-generic x86 64)
 * Documentation: https://help.ubuntu.com
* Management:
                  https://landscape.canonical.com
 * Support:
                  https://ubuntu.com/advantage
 System information as of Wed Sep 15 07:37:58 UTC 2021
 System load:
               1.72
                                                         Users logged in: 0
                                  Swap usage:
                                               08
               10.5% of 58.80GB
                                  Temperature: 59.0 C
 Usage of /:
 Memory usage: 12%
                                   Processes:
                                                947
0 updates can be installed immediately.
 of these updates are security updates.
Failed to connect to https://changelogs.ubuntu.com/meta-release. Check your Int
rnet connection or proxy settings
Last login: Wed Sep 15 07:30:32 UTC 2021 on ttyS0
tse@tse:~$
```

13. Trouble-shooting:

13.1 When user choose legacy boot and grub occur following message -- error: symbol 'grub_register_command_lockdown' not found when installing Ubuntu 21.04 in BIOS mode



Please check following link and download new RUFUS to make Ubuntu21 bootable USB

https://askubuntu.com/questions/1333512/error-symbol-grub-register-command-lockdown-not-foundwhen-installing-ubuntu

[Disclaimer: I am the main developer of Rufus]

Short answer:

- If using Rufus, you will need to download Rufus 3.14 or later to create your media, which you can download <u>here</u>.
- If installing your own GRUB bootloader, you need to apply <u>this patch</u> on top of the GRUB 2.04 source, so that the missing symbol is defined.