

Part d

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Debian - OS SIT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

CONFIG_GLOB=y
# CONFIG_GLOB_SELFTEST is not set
CONFIG_NLATTR=y
# CONFIG_CORDIC is not set
# CONFIG_ODR is not set
# CONFIG_IRQ_POLL is not set
CONFIG_OID_REGISTRY=y
CONFIG_UCS2_STRING=y
CONFIG_FONT_SUPPORT=y
# CONFIG_FONTS is not set
CONFIG_FONT_8x8=y
CONFIG_FONT_8x16=y
# CONFIG_SG_SPLIT is not set
CONFIG_SG_POOL=y
CONFIG_ARCH_HAS_SG_CHAIN=y
CONFIG_ARCH_HAS_PMEM_API=y
CONFIG_ARCH_HAS_MMIO_FLUSH=y
CONFIG_SBITMAP=y
student@debian:~$ ls -l /boot
total 62872
-rw-r--r-- 1 root root 108980 Jan 29 2019 config-4.9.0
-rw-r--r-- 1 root root 186563 Oct 27 2018 config-4.9.0-8-amd64
-rw-r--r-- 1 root root 109003 Mar 1 18:23 config-4.9.0CONOR_MCGULLAM_10418221
-rw-r--r-- 1 root root 108980 Jan 29 2019 config-4.9.0.old
drwxr-xr-x 5 root root 4096 Mar 1 18:24 grub
-rw-r--r-- 1 root root 3794477 Jan 29 2019 initrd.img-4.9.0
-rw-r--r-- 1 root root 18129399 Jan 25 2019 initrd.img-4.9.0-8-amd64
-rw-r--r-- 1 root root 3794506 Mar 1 18:24 initrd.img-4.9.0CONOR_MCGULLAM_10418221
-rw-r--r-- 1 root root 3564091 Jan 29 2019 System.map-4.9.0
-rw-r--r-- 1 root root 3195896 Oct 27 2018 System.map-4.9.0-8-amd64
-rw-r--r-- 1 root root 3564091 Mar 1 18:23 System.map-4.9.0CONOR_MCGULLAM_10418221
-rw-r--r-- 1 root root 3564091 Jan 29 2019 System.map-4.9.0.old
-rw-r--r-- 1 root root 6660592 Jan 29 2019 vmlinuz-4.9.0
-rw-r--r-- 1 root root 4232992 Oct 27 2018 vmlinuz-4.9.0-8-amd64
-rw-r--r-- 1 root root 6660592 Mar 1 18:23 vmlinuz-4.9.0CONOR_MCGULLAM_10418221
-rw-r--r-- 1 root root 6660592 Jan 29 2019 vmlinuz-4.9.0.old
student@debian:~$
```

Part e (insmod)

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Debian - OS SIT [Running] - Oracle VM VirtualBox
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Mar 1 19:21:20 debian systemd[1]: Reached target Multi-User System.
Mar 1 19:21:20 debian systemd[1]: Reached target Graphical Interface.
Mar 1 19:21:20 debian systemd[1]: Starting Update UTMP about System Runlevel Changes...
Mar 1 19:21:20 debian systemd[1]: Started Update UTMP about System Runlevel Changes.
Mar 1 19:21:20 debian systemd[1]: Startup finished in 1.200s (kernel) + 1.343s (userspace) = 2.543s.
Mar 1 19:21:22 debian kernel: [ 4.295306] e1000: enp0s3 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX
Mar 1 19:21:22 debian kernel: [ 4.295918] IPv6: ADDRCONF(NETDEV_CHANGE): enp0s3: link becomes ready
Mar 1 19:21:23 debian dhclient[1208]: DHCPREQUEST of 10.0.2.15 on enp0s3 to 255.255.255.255 port 67
Mar 1 19:21:23 debian sh[1142]: DHCPREQUEST of 10.0.2.15 on enp0s3 to 255.255.255.255 port 67
Mar 1 19:21:23 debian sh[1142]: DHCPACK of 10.0.2.15 from 10.0.2.2
Mar 1 19:21:23 debian dhclient[1208]: DHCPACK of 10.0.2.15 from 10.0.2.2
Mar 1 19:21:23 debian dhclient[1208]: bound to 10.0.2.15 -- renewal in 32626 seconds.
Mar 1 19:21:23 debian sh[1142]: bound to 10.0.2.15 -- renewal in 32626 seconds.
Mar 1 19:21:23 debian systemd[1]: Reloading OpenBSD Secure Shell server.
Mar 1 19:21:23 debian sh[1142]: enp0s3=enp0s3
Mar 1 19:21:23 debian systemd[1]: Reloaded OpenBSD Secure Shell server.
Mar 1 19:21:30 debian systemd[1]: Created slice User Slice of student.
Mar 1 19:21:30 debian systemd[1]: Starting User Manager for UID 1000...
Mar 1 19:21:30 debian systemd[1]: Started Session 1 of user student.
Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent and passphrase cache (restricted).
Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent (access for web browser sessions).
Mar 1 19:21:30 debian systemd[1398]: Reached target Timers.
Mar 1 19:21:30 debian systemd[1398]: Reached target Paths.
Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent (ssh-agent emulation).
Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent and passphrase cache.
Mar 1 19:21:30 debian systemd[1398]: Reached target Sockets.
Mar 1 19:21:30 debian systemd[1398]: Reached target Basic System.
Mar 1 19:21:30 debian systemd[1398]: Reached target Default.
Mar 1 19:21:30 debian systemd[1398]: Startup finished in 19ms.
Mar 1 19:21:30 debian systemd[1]: Started User Manager for UID 1000.
Mar 1 19:28:41 debian kernel: [ 442.924261] Hello World from Conor (10418221)
root@debian:/var/log#
```

Part e (rmmod)

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Debian - OS SIT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

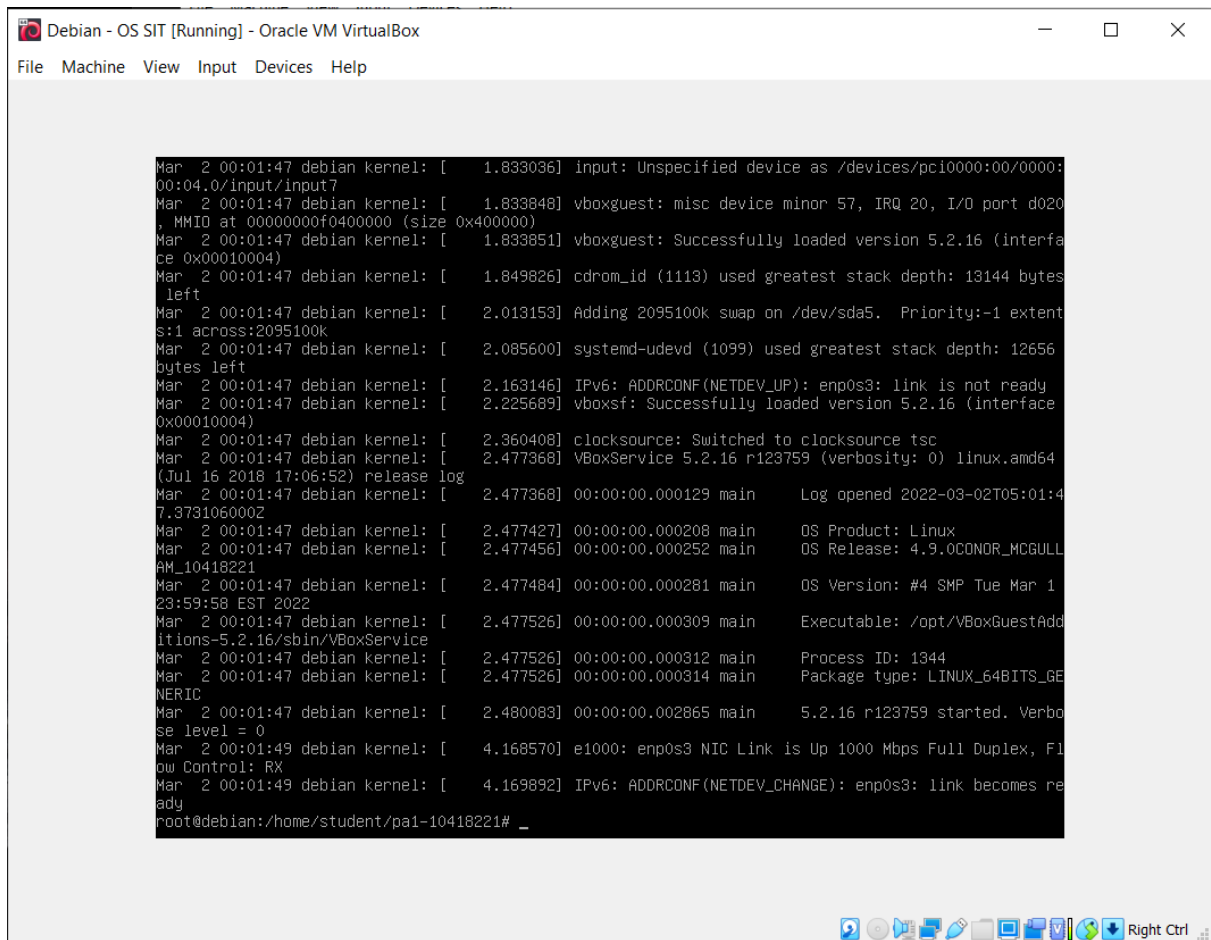
Mar 1 19:21:20 debian systemd[1]: Reached target Graphical Interface.
Mar 1 19:21:20 debian systemd[1]: Starting Update UTMP about System Runlevel Changes...
Mar 1 19:21:20 debian systemd[1]: Started Update UTMP about System Runlevel Changes.
Mar 1 19:21:20 debian systemd[1]: Startup finished in 1.200s (kernel) + 1.343s (userspace) = 2.543s.
Mar 1 19:21:22 debian kernel: [ 4.295306] e1000: enp0s3 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX
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Mar 1 19:21:23 debian dhclient[1208]: DHCPREQUEST of 10.0.2.15 on enp0s3 to 255.255.255.255 port 67
Mar 1 19:21:23 debian sh[1142]: DHCPREQUEST of 10.0.2.15 on enp0s3 to 255.255.255.255 port 67
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Mar 1 19:21:23 debian dhclient[1208]: bound to 10.0.2.15 -- renewal in 32626 seconds.
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Mar 1 19:21:23 debian systemd[1]: Reloaded OpenBSD Secure Shell server.
Mar 1 19:21:30 debian systemd[1]: Created slice User Slice of student.
Mar 1 19:21:30 debian systemd[1]: Starting User Manager for UID 1000...
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Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent and passphrase cache (restricted).
Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent (access for web browser).
Mar 1 19:21:30 debian systemd[1398]: Reached target Timers.
Mar 1 19:21:30 debian systemd[1398]: Reached target Paths.
Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent (ssh-agent emulation).
Mar 1 19:21:30 debian systemd[1398]: Listening on GnuPG cryptographic agent and passphrase cache.
Mar 1 19:21:30 debian systemd[1398]: Reached target Sockets.
Mar 1 19:21:30 debian systemd[1398]: Reached target Basic System.
Mar 1 19:21:30 debian systemd[1398]: Reached target Default.
Mar 1 19:21:30 debian systemd[1398]: Startup finished in 19ms.
Mar 1 19:21:30 debian systemd[1]: Started User Manager for UID 1000.
Mar 1 19:28:41 debian kernel: [ 442.924261] Hello World from Conor (10418221)
Mar 1 19:33:53 debian kernel: [ 755.545677] PID: 1464 Name: rmmod
root@debian:/var/log#
```

Part h user output

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Debian - OS SIT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

abiet] on usb-0000:00:06.0-1/input0
[ 1.553125] EXT4-fs (sda1): re-mounted. Opts: errors=remount-ro
[ 1.603982] systemd-journald[1061]: Received request to flush runtime journal from PID 1
[ 1.765254] vboxvideo: loading out-of-tree module taints kernel.
[ 1.766596] [drm] VRAM 01700000
[ 1.766840] [TTM] Zone kernel: Available graphics memory: 1024698 kiB
[ 1.766842] [TTM] Initializing pool allocator
[ 1.766863] [TTM] Initializing DMA pool allocator
[ 1.768743] fbcon: vboxdrmfb (fb0) is primary device
[ 1.787940] random: crng init done
[ 1.804647] Console: switching to colour frame buffer device 100x37
[ 1.826531] vboxvideo 0000:00:02.0: fb0: vboxdrmfb frame buffer device
[ 1.830479] [drm] Initialized vboxvideo 1.0.0 20130823 for 0000:00:02.0 on minor 0
[ 1.832235] vgdvHeartbeatInit: Setting up heartbeat to trigger every 2000 milliseconds
[ 1.833036] input: Unspecified device as /devices/pci0000:00/0000:00:04.0/input/input7
[ 1.833848] vboxguest: misc device minor 57, IRQ 20, I/O port d020, MMIO at 00000000f0400000 (size 0x400000)
[ 1.833851] vboxguest: Successfully loaded version 5.2.16 (interface 0x00010004)
[ 1.849826] cdrom_id (1113) used greatest stack depth: 13144 bytes left
[ 2.013153] Adding 2095100k swap on /dev/sda5. Priority:-1 extents:1 across:2095100k
[ 2.085600] systemd-udevd (1099) used greatest stack depth: 12656 bytes left
[ 2.163146] IPv6: ADDRCONF(NETDEV_UP): enp0s3: link is not ready
[ 2.225689] vboxsf: Successfully loaded version 5.2.16 (interface 0x00010004)
[ 2.360408] clocksource: Switched to clocksource tsc
[ 2.477368] VBoxService 5.2.16 r123759 (verbosity: 0) linux.amd64 (Jul 16 2018 17:06:52) release
log
00:00:00.000129 main Log opened 2022-03-02T05:01:47.373106000Z
[ 2.477427] 00:00:00.000208 main OS Product: Linux
[ 2.477456] 00:00:00.000252 main OS Release: 4.9.0CONOR_MCGULLAM_10418221
[ 2.477484] 00:00:00.000281 main OS Version: #4 SMP Tue Mar 1 23:59:58 EST 2022
[ 2.477526] 00:00:00.000309 main Executable: /opt/VBoxGuestAdditions-5.2.16/sbin/VBoxService
00:00:00.000312 main Process ID: 1344
00:00:00.000314 main Package type: LINUX_64BITS_GENERIC
[ 2.480083] 00:00:00.002865 main 5.2.16 r123759 started. Verbose level = 0
[ 4.168570] e1000: enp0s3 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX
[ 4.169892] IPv6: ADDRCONF(NETDEV_CHANGE): enp0s3: link becomes ready
student@debian:~/pa1-10418221$ cat /
```

Part h kernel log



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Mar  2 00:01:47 debian kernel: [ 1.833036] input: Unspecified device as /devices/pci0000:00/0000:00:04.0/input/input7
Mar  2 00:01:47 debian kernel: [ 1.833848] vboxguest: misc device minor 57, IRQ 20, I/O port d020, MMIO at 00000000f0400000 (size 0x400000)
Mar  2 00:01:47 debian kernel: [ 1.833851] vboxguest: Successfully loaded version 5.2.16 (interface 0x000010004)
Mar  2 00:01:47 debian kernel: [ 1.849826] cdrom_id (1113) used greatest stack depth: 13144 bytes left
Mar  2 00:01:47 debian kernel: [ 2.013153] Adding 2095100k swap on /dev/sda5. Priority:-1 extents:1 across:2095100k
Mar  2 00:01:47 debian kernel: [ 2.085600] systemd-udevd (1099) used greatest stack depth: 12656 bytes left
Mar  2 00:01:47 debian kernel: [ 2.163146] IPv6: ADDRCONF(NETDEV_UP): enp0s3: link is not ready
Mar  2 00:01:47 debian kernel: [ 2.225689] vboxsf: Successfully loaded version 5.2.16 (interface 0x000010004)
Mar  2 00:01:47 debian kernel: [ 2.360408] clocksource: Switched to clocksource tsc
Mar  2 00:01:47 debian kernel: [ 2.477368] VBoxService 5.2.16 r123759 (verbosity: 0) linux.amd64 (Jul 16 2018 17:06:52) release log
Mar  2 00:01:47 debian kernel: [ 2.477368] 00:00:00.000129 main Log opened 2022-03-02T05:01:47.373106000Z
Mar  2 00:01:47 debian kernel: [ 2.477427] 00:00:00.000208 main OS Product: Linux
Mar  2 00:01:47 debian kernel: [ 2.477456] 00:00:00.000252 main OS Release: 4.9.0CONDOR_MCGULLAM_10418221
Mar  2 00:01:47 debian kernel: [ 2.477484] 00:00:00.000281 main OS Version: #4 SMP Tue Mar 1 23:59:58 EST 2022
Mar  2 00:01:47 debian kernel: [ 2.477526] 00:00:00.000309 main Executable: /opt/VBoxGuestAdditions-5.2.16/sbin/VBoxService
Mar  2 00:01:47 debian kernel: [ 2.477526] 00:00:00.000312 main Process ID: 1344
Mar  2 00:01:47 debian kernel: [ 2.477526] 00:00:00.000314 main Package type: LINUX_64BITS_GENERIC
Mar  2 00:01:47 debian kernel: [ 2.480083] 00:00:00.002865 main 5.2.16 r123759 started. Verbosity level = 0
Mar  2 00:01:49 debian kernel: [ 4.168570] e1000: enp0s3 NIC Link is Up 1000 Mbps Full Duplex, Flow Control: RX
Mar  2 00:01:49 debian kernel: [ 4.169892] IPv6: ADDRCONF(NETDEV_CHANGE): enp0s3: link becomes ready
root@debian:/home/student/pai-10418221#
```