

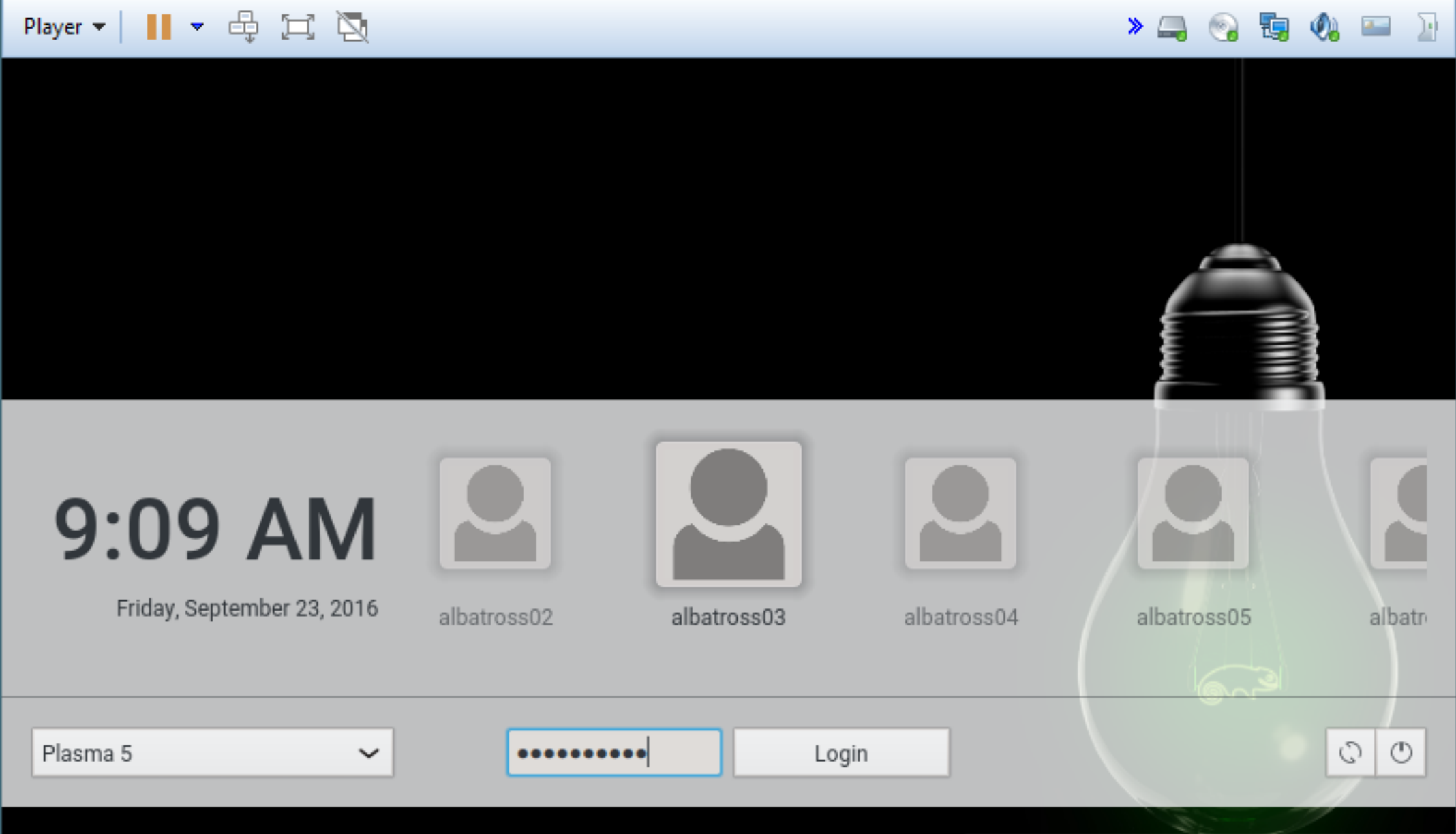
## Linux Report IP address in NAT and Bridge Mode

The presentation will logon to a copy of the class Virtual Linux system using the account "Albatross03". The presentation will set VMware Workstation Player in NAT mode and obtain the IP addresses. The presentation will set VMware Workstation Player in Bridge mode, check the bridge interface, and obtain the IP addresses.

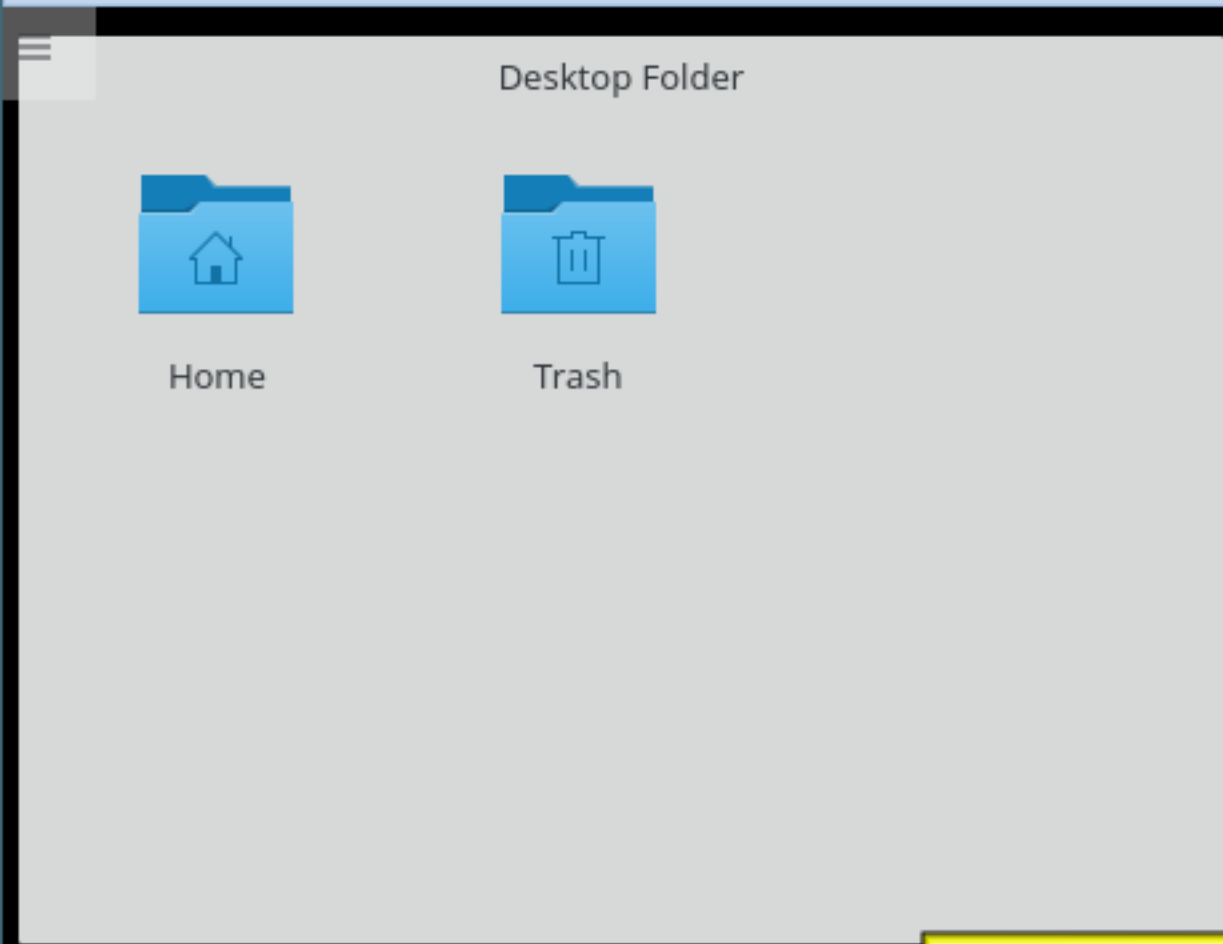
Operating System: OpenSUSE Leap 42.1

Preuss

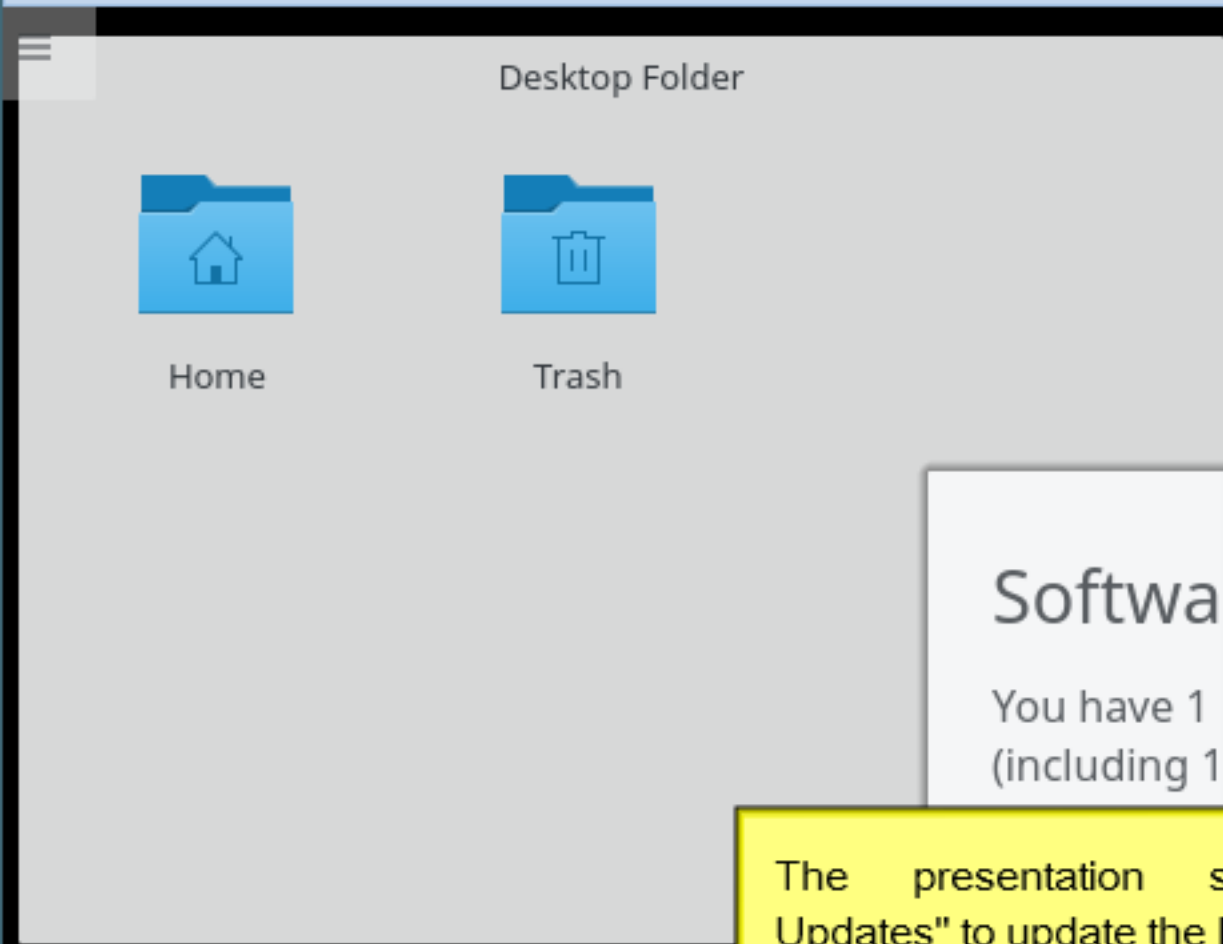
9/23/2016



The presentation starts the class Linux virtual machine. The presentation selects the presentation login and enters the correct password. The presentation select "Login" to continue.



The presentation sees updates are needed. The presentation clicks on the sheild with the "x" to open the update menu.



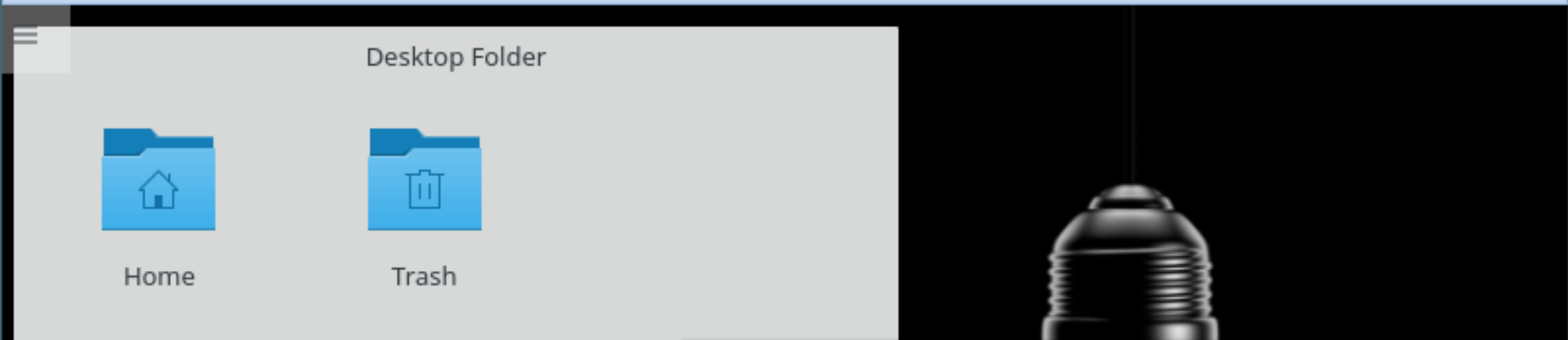
## Software Updates

You have 1 new update  
(including 1 security update)

**Install Updates**

The presentation selects "Install Updates" to update the Linux system.





## Software Updates

Your system is up to date  
*Last updated: 1 minute(s) ago*

[!]

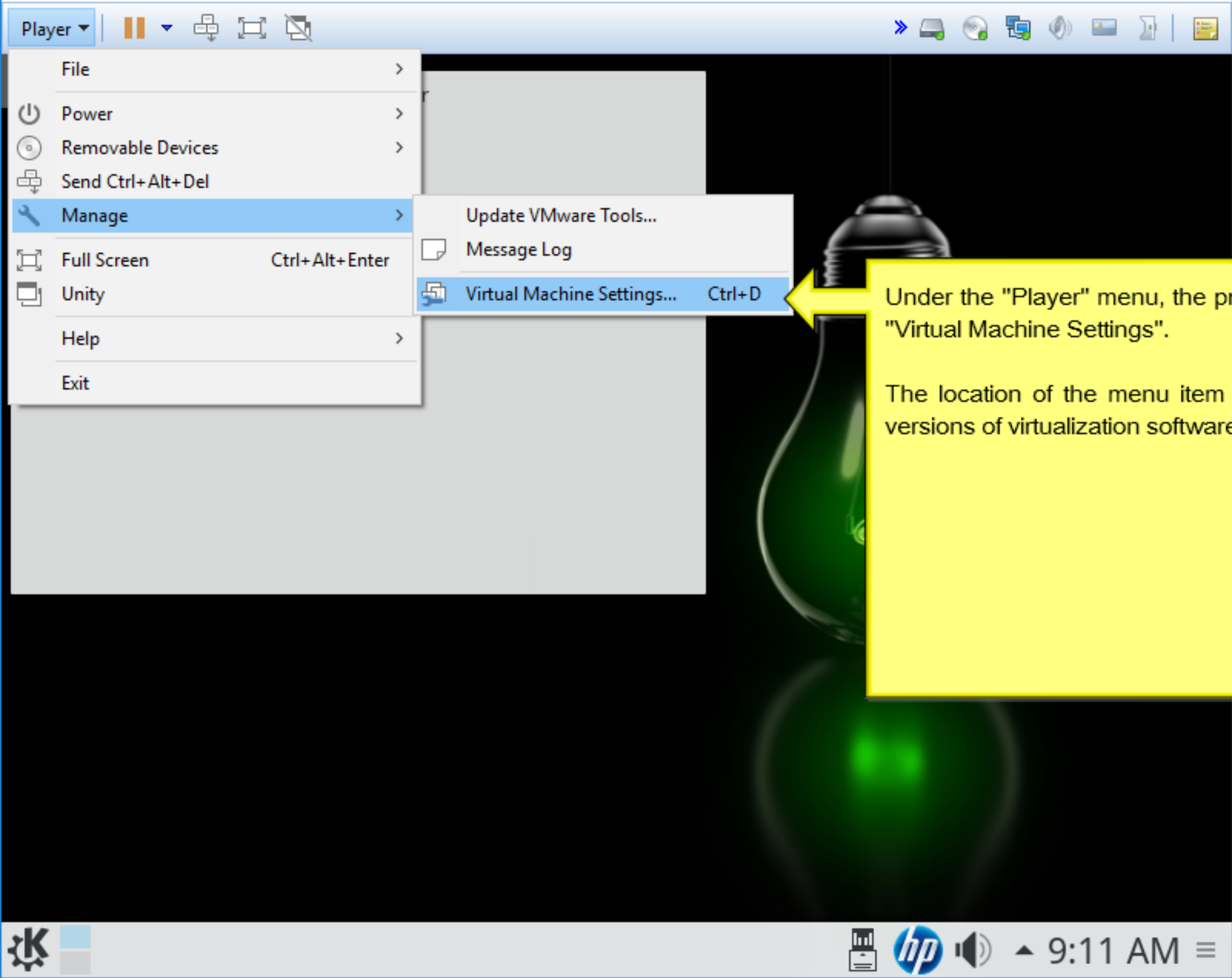
[Clipboard]

[Back Arrow]

[Close 'X']

[Close 'X']

The presentation selects the red "X" to close the dialog box. The presentation selects the down arrow to close "Notifications".



Under the "Player" menu, the presentation navigates to "Virtual Machine Settings".

The location of the menu item is different in different versions of virtualization software.

Virtual Machine Settings

Hardware Options

Device	Summary
Memory	2 GB
Processors	2
Hard Disk (SCSI)	40 GB
CD/DVD (IDE)	Using file opensUSE-Leap-42.1-D...
<b>Network Adapter</b>	<b>NAT</b>
USB Controller	Present
Sound Card	Auto detect
Display	Auto detect

Device status

- Connected
- Connect at power on

Network connection

- Bridged: Connected directly to the physical network
  - Replicate physical network connection state
- NAT: Used to share the host's network connection
- Host-only: A private network
- Custom: Specific virtual network
  - VMnet0
- LAN segment:
  -

Buttons: Add... Remove OK Cancel Help

The presentation insures the option "NAT" is selected.

Player ▾ | [Pause] [Full Screen] [Close]

Desktop Folder

Home [Trash]

Applications

- Firefox
- LibreOffice
- System Settings
- Mail
- Calendar
- Terminal - Super User Mode
- Konsole

konsole

hp [Speaker] ▲ 9:12 AM ≡

The presentation opens the KDE command line program "Konsole" as shown.



```
albatross03@opensuse-f2016a:~> /sbin/ip address show
```

The presentation issues the command shown to get the Linux system IP address.

```
albatross03@opensuse-f2016a:~> /sbin/ip address show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group de
fault
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state U
P group default qlen 1000
    link/ether 00:0c:29:57:37:df brd ff:ff:ff:ff:ff:ff
    inet 192.168.241.129/24 brd 192.168.241.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:fe57:37df/64 scope link
        valid_lft forever preferred_lft forever
albatross03@opensuse-f2016a:~> █
```

This is the results for the presentation.  
Other systems will have different  
numbers.

```
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt
```

The presentation issues the command shown to redirect the current IP addresses to a file.

The file name may be different, but it is highly recommended to end the file name in .txt.

```
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt  
albatross03@opensuse-f2016a:~> kate ip_address01.txt
```

The presentation uses the command shown to see the data file in the editor "kate".

```
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt
albatross03@opensuse-f2016a:~> kate ip_address01.txt
```

ip\_address01.txt — Kate

File Edit View Projects Bookmarks Sessions Tools Settings >

Documents

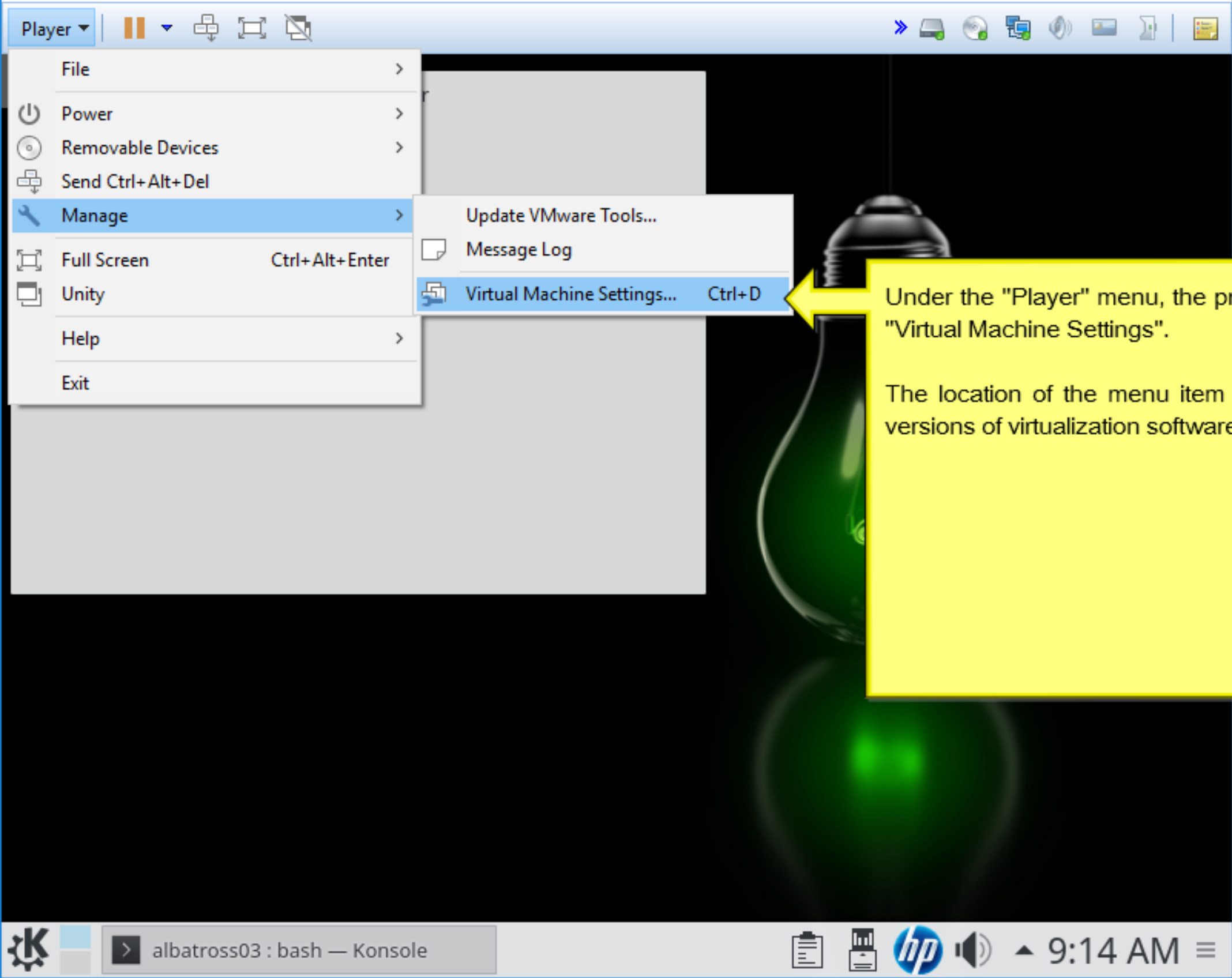
ip\_address01.txt

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state
UNKNOWN group default
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc
pfifo_fast state UP group default qlen 1000
    link/ether 00:0c:29:57:37:df brd ff:ff:ff:ff:ff:ff
    inet 192.168.241.129/24 brd 192.168.241.255 scope global
eth0
    valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:fe57:37df/64 scope link
        valid_lft forever preferred_lft forever
```

Line 1, Column 1    INSERT    Soft Tabs: 4 ▾    UTF-8 ▾    Normal ▾    ☰

🔍 Search and Replace

This is the data file "ip\_address01.txt" in "kate".



Under the "Player" menu, the presentation navigates to "Virtual Machine Settings".

The location of the menu item is different in different versions of virtualization software.

Player ▾ Virtual Machine Settings

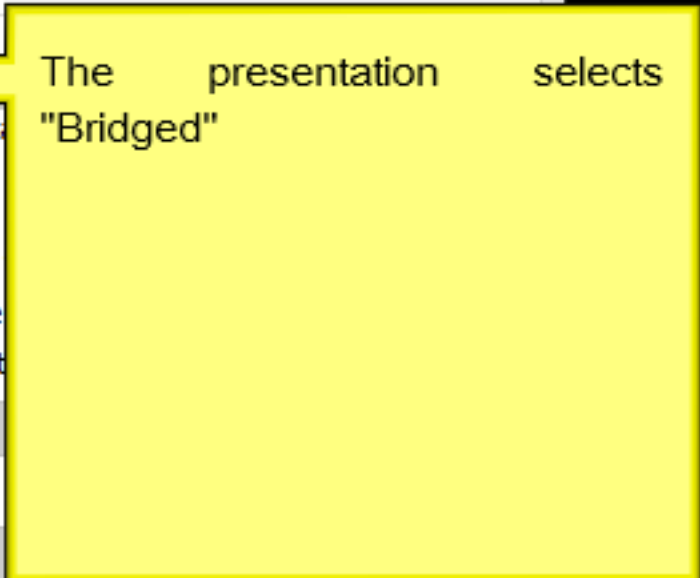
Hardware Options

Device	Summary
Memory	2 GB
Processors	2
Hard Disk (SCSI)	40 GB
CD/DVD (IDE)	Using file openSUSE-Leap-42.1-D...
Network Adapter	NAT
USB Controller	Present
Sound Card	Auto detect
Display	Auto detect

Device status

- Connected
- Connect at power on

Network connection

- Bridged:  The presentation selects "Bridged"
- Replicate physical
- NAT: Used to share
- Host-only: A private
- Custom: Specific virt

VMnet0

- LAN segment:

LAN Segments... Advanced...

Add... Remove

OK Cancel Help

Player ▾ Virtual Machine Settings

Hardware Options

Device	Summary
Memory	2 GB
Processors	2
Hard Disk (SCSI)	40 GB
CD/DVD (IDE)	Using file opensUSE-Leap-42.1-D.
Network Adapter	NAT
USB Controller	Present
Sound Card	Auto detect
Display	Auto detect

Automatic Bridging Settings

Select the host network adapter(s) you want to automatically bridge:

- Microsoft Wi-Fi Direct Virtual Adapter
- Intel(R) Dual Band Wireless-AC 7260
- Intel(R) Ethernet Connection I217-LM

OK Cancel Help

Hardware Summary

- Bridged: Connected directly to the physical network
- Replicate physical network connection state
- NAT: Used to share the host's IP address
- Host-only: A private network shared with the host
- Custom: Specific virtual network

VMnet0

LAN segment:

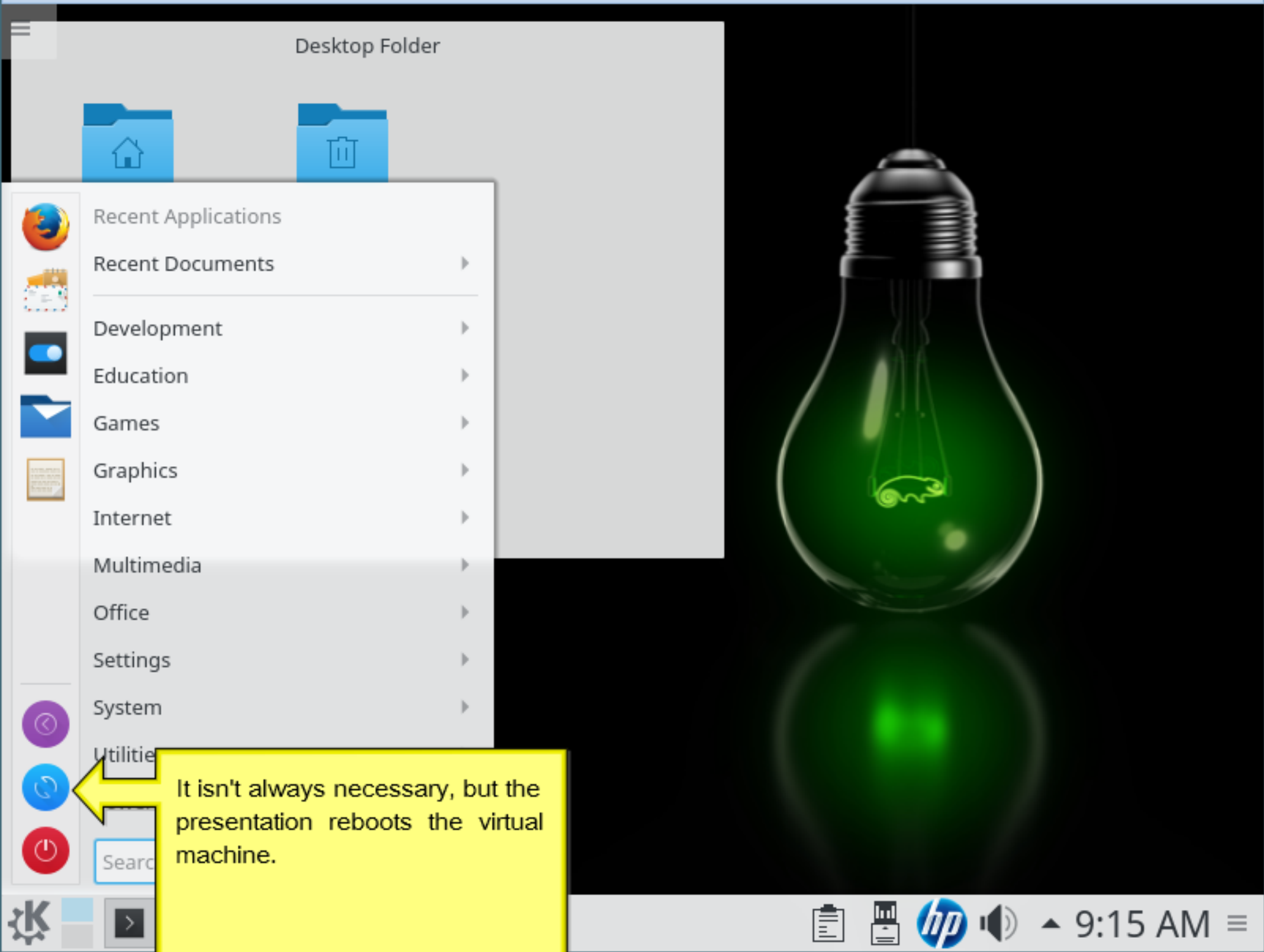
Add... Remove

Help

The presentation selects "Configure Adapters". This may be another menu item in other virtualization software.

The presentation insures only the physical ethernet port is selected. This port must be connected to an active network.





It isn't always necessary, but the presentation reboots the virtual machine.



Rebooting

in 27 seconds

A modal dialog box titled 'Rebooting' is centered on the screen. It features a blue circular icon with a white refresh symbol. Below the icon is a horizontal progress bar that is approximately 70% full. Below the progress bar, the text 'in 27 seconds' is displayed.

Cancel Reboot

The presentation speeds the process by selecting "Reboot" option.

```
Player | [Pause] [Full Screen] [Close] [Help] [VMware Tools] [Sound] [Network] [USB] [Clipboard] [Screenshot]
battery shpchp i2c_piix4 acpi_cpufreq button processor ac vmw_umci btrfs xor raid6_pq sr_mod cdrom
ata_generic hid_generic usbhid ata_piix crc32c_intel vmwgfx drm_kms_helper ttm ehci_pci xhci_pci uhc
i_hcd ehci_hcd xhci_hcd drm usbcore usb_common mptspi scsi_transport_spi mptscsih mptbase dm_mod sg
[ 499.409078] CPU: 0 PID: 4053 Comm: plymouthd Not tainted 4.1.31-30-default #1
[ 499.409105] Hardware name: VMware, Inc. VMware Virtual Platform/440BX Desktop Reference Platform,
BIOS 6.00 07/02/2015
[ 499.409141] task: ffff88001a2422d0 ti: ffff88004b218000 task.ti: ffff88004b218000
[ 499.409168] RIP: 0010:[<ffffffffffa018a6ce>] [<ffffffffffa018a6ce>] vmw_master_set+0xae/0xb0 [vmwgfx]
]
[ 499.409214] RSP: 0018:ffff88004b21bca8 EFLAGS: 00010207
[ 499.409233] RAX: ffff880078331c40 RBX: ffff88007612d690 RCX: 00000000000006261
[ 499.409257] RDX: 00000000000006261 RSI: ffff880076bbdbc0 RDI: ffff880076bbdc48
[ 499.409283] RBP: ffff880076100000 R08: 0000000000000001 R09: 0000000000000246
[ 499.409329] R10: 000000000001d890 R11: 000000000000641e R12: ffff88001b576000
[ 499.409352] R13: ffff880067beddc0 R14: ffff880036ddf440 R15: 0000000000000000
[ 499.409378] FS: 00007f67cf635700(0000) GS:ffff88007b600000(0000) knlGS:0000000000000000
[ 499.409409] CS: 0010 DS: 0000 ES: 0000 CR0: 0000000080050033
[ 499.409430] CR2: 000000000041f080 CR3: 000000004b213000 CR4: 00000000001406f0
[ 499.409509] Stack:
[ 499.410376] 0000000000000001 ffff88001b576000 00000000fffffefa ffff880076b10088
[ 499.411244] ffff880078331c40 ffff880076b10000 ffff880076072b40 fffffffffa007abca
[ 499.412130] ffff88001a242338 0000000000000000 ffff880076b10000 fffffffffa00984b0
[ 499.413047] Call Trace:
[ 499.413966] [<ffffffffffa007abca>] drm_setmaster_ioctl+0x7a/0xd0 [drm]
[ 499.414895] [<ffffffffffa0076737>] drm_ioctl+0x137/0x590 [drm]
[ 499.415959] [<ffffffffffa018a505>] vmw_generic_ioctl+0x165/0x240 [vmwgfx]
[ 499.417358] [<ffffffffff811f21ef>] do_vfs_ioctl+0x2ff/0x510
[ 499.418343] [<ffffffffff811f2481>] Sys_ioctl+0x81/0xa0
[ 499.419249] [<ffffffffff816656f2>] system_call_fastpath+0x16/0x75
[ 499.420303] [<00007f67ced46bc7>] 0x7f67ced46bc7
[ 499.421683] Code: 5b 5d 41 5c 41 5d 41 5e 41 5f c3 66 90 4c 89 ef e8 e8 db 07 00 49 8b 44 24 78 4
9 39 06 75 0c 4c 89 f7 e8 46 02 ef ff eb ca 0f 0b <0f> 0b 0f 1f 44 00 00 48 83 ec 08 48 8b be 80 00
00 00 48 c7 86
[ 499.425615] RIP [<ffffffffffa018a6ce>] vmw_master_set+0xae/0xb0 [vmwgfx]
[ 499.427087] RSP [<ffff88004b21bca8>]
[ 499.452849] ---[ end trace 55f64adf215e5ad6 ]---
```

Sometimes the class Virtual Linux system will hang/stop at this screen.

- Player ▾
- File >
- Power >
- Removable Devices >
- Send Ctrl+Alt+Del
- Manage >
- Full Screen Ctrl+Alt+Enter
- Unity
- Help >
- Exit

```

freq button processor ac vmw_umci btrfs xor raid6_pq sr_mod cdrom
nix_crc32c intel umwgfx drm_kms_helper ttm ehci_pci xhci_pci uhc
scsi_transport_spi mptscsih mptbase dm_mod sg
inted 4.1.31-30-default #1
ual Platform/440BX Desktop Reference Platform,
) [vmwgfx]
b21bca8 EFLAGS: 00010207
40 RBX: ffff88007612d690
61 RSI: ffff880076bbdbc0
00 R08: 0000000000000001
90 R11: 0000000000000641e
499.409352] R13: ffff880067bedac0 R14: ffff880036ddf440
[ 499.409378] FS: 00007f67cf635700(0000) GS:ffff88007b600
[ 499.409409] CS: 0010 DS: 0000 ES: 0000 CR0: 00000000800
[ 499.409430] CR2: 000000000041f080 CR3: 000000004b213000
[ 499.409509] Stack:
[ 499.410376] 0000000000000001 ffff88001b576000 00000000fffffea ffff880076b10088
[ 499.411244] ffff880078331c40 ffff880076b10000 ffff880076072b40 ffffffff8007abca
[ 499.412130] ffff88001a242338 0000000000000000 ffff880076b10000 ffffffff800984b0
[ 499.413047] Call Trace:
[ 499.413966] [] drm_setmaster_ioctl+0x7a/0xd0 [drm]
[ 499.414895] [] drm_ioctl+0x137/0x590 [drm]
[ 499.415959] [] vmw_generic_ioctl+0x165/0x240 [vmwgfx]
[ 499.417358] [] do_vfs_ioctl+0x2ff/0x510
[ 499.418343] [] SyS_ioctl+0x81/0xa0
[ 499.419249] [] system_call_fastpath+0x16/0x75
[ 499.420303] [<00007f67ced46bc7>] 0x7f67ced46bc7
[ 499.421683] Code: 5b 5d 41 5c 41 5d 41 5e 41 5f c3 66 90 4c 89 ef e8 e8 db 07 00 49 8b 44 24 78 4
9 39 06 75 0c 4c 89 f7 e8 46 02 ef ff eb ca 0f 0b <0f> 0b 0f 1f 44 00 00 48 83 ec 08 48 8b be 80 00
00 00 48 c7 86
[ 499.425615] RIP [] vmw_master_set+0xae/0xb0 [vmwgfx]
[ 499.427087] RSP <ffff88004b21bca8>
[ 499.452849] ---[ end trace 55f64adf215e5ad6 ]---
```

The presentation selects "Restart Guest" as shown. This will finish the reboot process.

```

Player ▾ | [Icons]
battery shpchp i2c_piix4 acpi_cpufreq button processor ac vmw_umci btrfs xor raid6_pq sr_mod cdrom
ata_generic hid_generic usbhid ata_piix crc32c_intel vmwgfx drm_kms_helper ttm ehci_pci xhci_pci uhc
i_hcd ehci_hcd xhci_hcd drm usbcore usb_common mptspi scsi_transport_spi mptscsih mptbase dm_mod sg
[ 499.409078] CPU: 0 PID: 4053 Comm: plymouthd Not tainted 4.1.31-30-default #1
[ 499.409105] Hardware name: VMware, Inc. VMware Virtual Platform/440BX Desktop Reference Platform,
BIOS 6.00 07/02/2015
[ 499.409141] task: ffff88001a2422d0 ti: ffff88004b218000 task.ti: ffff88004b218000
[ 499.409168] RIP: 0010:[<ffffffffffa018a6ce>] [<ffffffffffa018a6ce>] vmw_master_set+0xae/0xb0 [vmwgfx
]
[ 499.409214] RSP: 0018:ffff88004b21bca8 EFLAGS: 00010207
[ 499.409233] RAX: ffff880078331c40 RBX: ffff88007612d690 RCX: 00000000000006261
[ 499.409257] RDX: 00000000000006261 RSI: ffff880076bbdbc0 RDI: ffff880076bbdc48
[ 499.409283] RBP: ffff88007612d690 R08: 0000000000000000 R09: 0000000000000000 R10: 0000000000000000
[ 499.409329] R11: 0000000000000000 R12: 0000000000000000 R13: ffff880067ced46bc7 R14: 0000000000000000
[ 499.409352] R15: 0000000000000000 RIP: 0000000000000000 RIPS: 0000000000000000
[ 499.409378] FS: 00007f67ced46bc7 FS zero (0)
[ 499.409409] CS: 0010 DS: 0000
[ 499.409430] CR2: 0000000000000000
[ 499.409509] Stack:
[ 499.410376] 0000000000000000
[ 499.411244] ffff880078331c40
[ 499.412130] ffff88001a2422d0 0000000000000000 ffff880078331c40
[ 499.413047] Call Trace:
[ 499.413966] [<ffffffffffa007abca>] drm_setmaster_ioctl+0x7a/0xd0
[ 499.414895] [<ffffffffffa0076737>] drm_ioctl+0x137/0x590 [drm]
[ 499.415959] [<ffffffffffa018a505>] vmw_generic_ioctl+0x165/0x240
[ 499.417358] [<ffffffffff811f21ef>] do_vfs_ioctl+0x2ff/0x510
[ 499.418343] [<ffffffffff811f2481>] SyS_ioctl+0x81/0xa0
[ 499.419249] [<ffffffffff816656f2>] system_call_fastpath+0x16/0x70
[ 499.420303] [<00007f67ced46bc7>] 0x7f67ced46bc7
[ 499.421683] Code: 5b 5d 41 5c 41 5d 41 5e 41 5f c3 66 90 4c 89 4c 89 f7 e8 46 02 ef ff eb ca 0f 0b <0f> 0b 0f 1f 44
9 39 06 75 0c 4c 89 f7 e8 46 02 ef ff eb ca 0f 0b <0f> 0b 0f 1f 44 00 00 48 c7 86
[ 499.425615] RIP [<ffffffffffa018a6ce>] vmw_master_set+0xae/0xb0 [vmwgfx]
[ 499.427087] RSP [<ffff88004b21bca8>]
[ 499.452849] ---[ end trace 55f64adf215e5ad6 ]---
    
```

VMware Workstation 12 Player

Are you sure you want to reset the virtual machine? Please make sure the virtual machine is in a safe state for shutdown; abruptly powering off can damage data. When possible, shut down your virtual machine with its operating system.

Yes

The presentation selects "Yes" to continue.



9:17 AM

Friday, September 23, 2016



albatross02



albatross03



albatross04



albatross05



albatr

Plasma 5

Password

Login



The presentation logs into the virtual machine.

Player ▾ | [Pause] [Full Screen] [Close]

Desktop Folder

Applications

- Logout
- Konsole
- Terminal - Super User Mode

konsole

hp [Speaker] ▲ 9:17 AM ≡

The presentation opens the KDE command line program "Konsole" as shown.

```
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt
```

The presentation issues the command shown to get the Linux system IP address.



```
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt
```

The presentation issues the command shown to redirect the current IP addresses to a file.

The file name may be different, but it is highly recommended to end the file name in .txt.

```
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt  
albatross03@opensuse-f2016a:~> kate ip_address01.txt
```

The presentation uses the command shown to see the data file in the editor "kate".

This is the data file "ip\_\_address01.txt" in "kate".

The presentation highlighted the new information in blue.

Player | [Pause] [Full Screen] [Close]

albatross03 : bash — Konsole

File Edit View Bookmarks Settings Help

```
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt
albatross03@opensuse-f2016a:~> kate ip_address01.txt
albatross03@opensuse-f2016a:~> [ ]
```


- Recent Applications
- Recent Documents
- Development
- Education
- Games
- Graphics
- Internet
- Multimedia
- Office
- Settings
- System
- Utilities
- Power / Session

9:19 AM

The presentation selects shutdown to properly close the Virtual Linux machine.

```
albatross03 : bash — Konsole  
File Edit View Bookmarks Settings Help  
albatross03@opensuse-f2016a:~> /sbin/ip address show >> ip_address01.txt  
albatross03@opensuse-f2016a:~> kate ip_address01.txt  
albatross03@opensuse-f2016a:~> [ ]
```

Shutting down



in 27 seconds

Cancel Shut down

The presentation selects "Shut down" to speed up the process.