

OpenSUSE M State mait VPN Setup

The presentation installs the M State OpenVPN configuration on OpenSUSE 15.1 and connects to the the M State network "maitlab".

Hardware/Software in this presentation

Operating System: OpenSUSE Leap 15.1

Preuss

4/7/2020



```
preuss@linux-s2020:~> cat /etc/SUSE-brand
openSUSE
VERSION = 15.1
preuss@linux-s2020:~> █
```

The presentation displays the OpenSUSE version.



Search

- Software
- Hardware
- System
- Network Services

YaST2 — YaST2 - sw_single @ linux-s2020

File Package Configuration Dependencies Options Extras Help

View Search Installation Summary Package Groups

openvpn Search

Search in

- Name
- Keywords
- Summary

Package	Summary	Installed (Availa	Size
<input checked="" type="checkbox"/> NetworkManager-openvpn	NetworkManager VPN support for Open...	1.8.2-lp151.4.3.1	282.5 K...
<input checked="" type="checkbox"/> NetworkManager-openvpn-lang	Translations for package NetworkMana...	1.8.2-lp151.4.3.1	845.7 K...
<input checked="" type="checkbox"/> openvpn	Full-featured SSL VPN solution using a T...	2.4.3-lp151.4.3	1.3 MiB
<input checked="" type="checkbox"/> plasma-nm5-openvpn	OpenVPN support for plasma-nm5	5.12.8-lp151.1.1	279.4 K...
<input type="checkbox"/> NetworkManager-openvpn-gno...	NetworkManager VPN support for Open...	(1.8.2-lp151.4.3...	217.5 K...
<input type="checkbox"/> connman-plugin-openvpn	OpenVPN plugin for connman (Connecti...	(1.35-lp151.1.29)	37.9 KiB
<input type="checkbox"/> monitoring-plugins-openvpn	Verify the state of the clients connected ...	(1.1-lp151.2.1)	6.0 KiB
<input type="checkbox"/> openvpn-auth-pam-plugin	OpenVPN auth-pam plugin	(2.4.3-lp151.4.3)	18.3 KiB
<input type="checkbox"/> openvpn-devel	OpenVPN plugin header	(2.4.3-lp151.4.3)	31.4 KiB
<input type="checkbox"/> openvpn-down-root-plugin	OpenVPN down-root plugin	(2.4.3-lp151.4.3)	10.2 KiB

Description Technical Data Dependencies Versions File List Change Log

NetworkManager-openvpn - NetworkManager VPN support for OpenVPN

NetworkManager-openvpn provides VPN support to NetworkManager for OpenVPN.

Cancel Accept

The presentation displays in "YaST" the required software to be installed.

This class distrubution had the software installed.



```
vpn-demo : bash — Konsole
File Edit View Bookmarks Settings Help
preuss@linux-s2020:~> mkdir vpn-demo
preuss@linux-s2020:~> cd vpn-demo/
preuss@linux-s2020:~/vpn-demo> cp /tmp/source/vpn-spring2020.zip .
```

The presentation creates a new folder for the vpn software.
The presentation copies the vpn software to the new folder.

Each semester, the version of the vpn software changes. It is necessary to use the version matching the semester.

A copy of the vpn software is on this image. Contact your instructor for other locations of the vpn software.



```
vpn-demo : bash — Konsole
File Edit View Bookmarks Settings Help
preuss@linux-s2020:~> mkdir vpn-demo
preuss@linux-s2020:~> cd vpn-demo/
preuss@linux-s2020:~/vpn-demo> cp /tmp/source/vpn-spring2020.zip .
preuss@linux-s2020:~/vpn-demo> unzip vpn-spring2020.zip
Archive:  vpn-spring2020.zip
  creating:  vpn/Android/
 inflating:  vpn/Android/egypt-UDP4-1194-...
  creating:  vpn/IOS/
 inflating:  vpn/IOS/egypt-UDP4-1194-spr...
  creating:  vpn/Linux/
 inflating:  vpn/Linux/.directory
 inflating:  vpn/Linux/egypt-UDP4-1194-s...
  creating:  vpn/Macintosh/
 extracting: vpn/Macintosh/egypt-UDP4-119...
  creating:  vpn/Windows/
 inflating:  vpn/Windows/openvpn-egypt-UD...I603.exe
preuss@linux-s2020:~/vpn-demo> ls
vpn  vpn-spring2020.zip
preuss@linux-s2020:~/vpn-demo> █
```

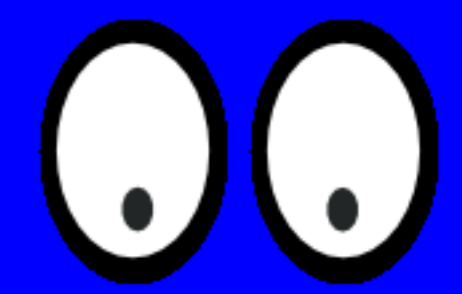
This image has the program unzip installed. The presentation "unzip" the vpn software as shown.



Home



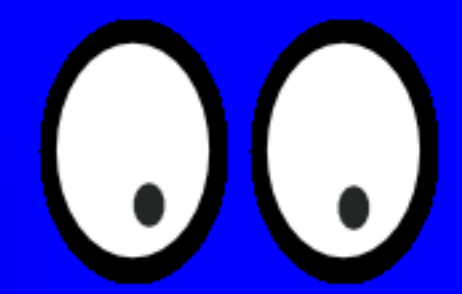
Trash



The presentation right clicks on the network icon (the monitor picture with wire). The presentation selects "Configure Network Connections..."



- Configure Network Connections...
- Configure Networks... Alt+D, S



Connections — System Settings Module

Edit your Network Connections

Type here to search connections...

Wired Ethernet

- Wired connection 1 Connected

Bridge

- docker0 Connected

Connection name:

General configuration | **Wired** | 802.1x Security | IPv4 | IPv6

Restrict to device:

Cloned MAC address:

MTU:

Allow auto-negotiation

Speed:

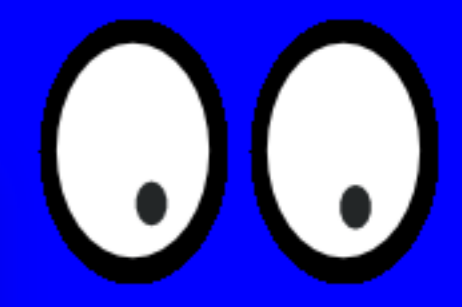
Duplex:

[+] [-] [Refresh]

[Help] [Reset] [Defaults] [OK] [Apply] [Cancel]

The presentation selects "+" to add an OpenVPN configuration.





Connections — System Settings Module

Edit your Network

Type here to search connections

Wired Ethernet

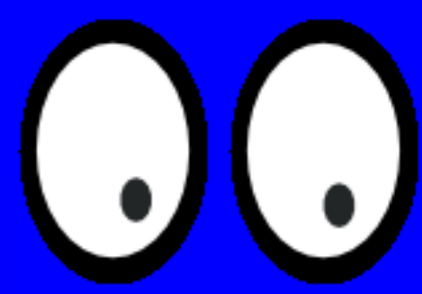
- Wired connection 1 Connected
- Bridge
- docker0 Connected

Choose a Connection Type — System Settings Module

- Wi-Fi
 - Wi-Fi (shared)
- Virtual connections
 - Bond
 - Bridge
 - Team
- VPN connections
 - Connect Compatible VPN (openconnect)
 - Cisco AnyConnect SSL VPN
 - VPN / Pulse Connect Secure (openconnect)
 - Juniper SSL VPN and Pulse Connect Secure
 - the OpenVPN server
 - Tunneling Protocol (PPTP)
 - Microsoft and other PPTP VPN servers
- Other
 - Import VPN connection...
 - Import a saved configuration file

Buttons: Create, Cancel

The presentation selects "Import VPN connection ..."



Edit your Network Connections

Connections — System Settings Module

Import VPN Connection — System Settings Module

Home > vpn-demo > vpn > Linux

egypt-UDP4-1194-spring2020_student-config.ovpn

Name: []

Filter: All Files

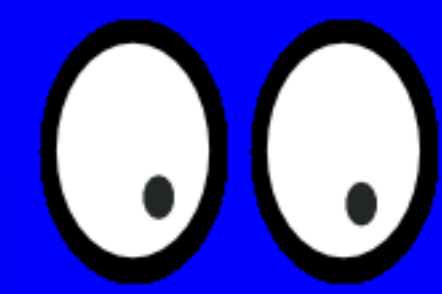
[Open] [Cancel]

[Help] [Reset] [Defaults] [OK] [Apply] [Cancel]

The presentation opens the "vpn | Linux" directory. The presentation selects the current semester OpenVPN file.

Once the file is listed in the "Name" box, the presentation selects "Open".





Connections — System Settings Module

Edit your Network Connections

Type here to search connections...

Connection name:

Wired Ethernet

- Wired connection 1
Connected

Bridge

General configuration | **Wired** | 802.1x Security | IPv4 | IPv6

Restrict to device:

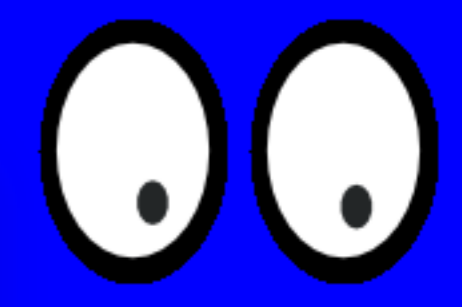
Copy certificates — System Settings Module

Do you want to copy your certificates to /home/preuss/.local/share/networkmanagement/certificates/?

Do not ask again

Help | Reset | Default |

The presentation selects "Yes" to continue.



Connections — System Settings Module

Edit your Network Connections

Type here to search connections... Connection name:

Wired connection 1 **Connected**

docker0 **Connected**

IPv4 IPv6

Random

Automatic

100 Mbit/s

Help

OK Apply Cancel

Authentication Required

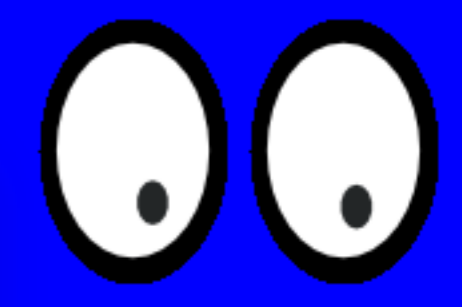
System policy prevents modification of network settings for all users

An application is attempting to perform an action that requires privileges. Authentication is required to perform this action.

Password for root:

[Details >>](#)

The presentation provides root's password to continue.



Connections — System Settings Module

Edit your Network Connections

Type here to search connections...

Connection name: Wired connection 1

Wired Ethernet

- Wired connection 1 **Connected**
- VPN (openvpn)
- egypt-UDP4-1194-s **Never used**
- Bridge
- docker0 **Connected**

IPv4 | IPv6

Random

Automatic

100 Mbit/s

< Back | **Finish** | Cancel

Help | <

OK | Apply | Cancel

KDE Wallet Service

The KDE Wallet System

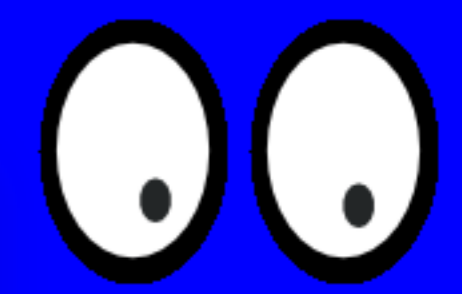
The application 'kded5' has requested to create a new wallet named 'kdewallet'. This is used to store sensitive data in a secure fashion. Please choose the new wallet's type below or click cancel to deny the application's request.

- Classic, blowfish encrypted file
- Use GPG encryption, for better protection

< Back | **Finish** | Cancel

The presentation selects "Classic, blowfish encrypted file". You may select the other option if your requirements demand it.

Once the selection is made, the presentation selects "Finish".



Connections — System Settings Module

Edit your Network Connections

Type here to search connections... Connection name:

Wired Ethernet

- Wired connection 1**
Connected

VPN (openvpn)

- egypt-UDP4-1194-spring2020_stud**
Never used

Bridge

- docker0**
Connected

Wired connection 1 Settings:

- 2.1x Security
- IPv4
- IPv6
- MAC address:
- Speed:

KDE Wallet Service

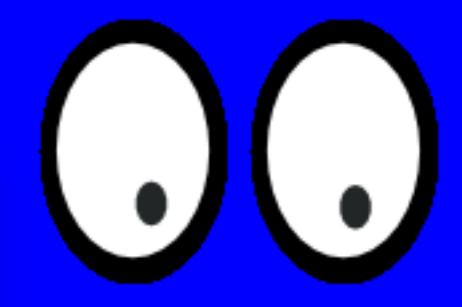
The application 'kded5' has requested to open the KDE wallet. This is used to store sensitive data in a secure fashion. Please enter a password to use with this wallet or click cancel to deny the application's request.

Password:

Verify:

Password strength meter:

The presentation provides a password for the "KDE Wallet Service". The presentation puts the password in a password keeper program.



Connections — System Settings Module

Edit your Network Connections

Type here to search connections...

Wired Ethernet

- Wired connection 1**
Connected

VPN (openvpn)

- egypt-UDP4-1194-spring2020_student-...
Never used

Wired connection 1 configuration:

Connection name: Wired connection 1

General configuration | **Wired** | 802.1x Security | IPv4 | IPv6

Restrict to device: eth0 (00:0C:29:2E:94:9D)

Cloned MAC address: Random

MTU: Automatic

Allow auto-negotiation

Speed: 100 Mbit/s

Duplex: Half

Buttons: Help, Reset, Defaults, OK, Apply, Cancel

The presentation sees the OpenVPN is successfully imported.

The presentation selects "OK" to continue.



```
vpn-demo : bash — Konsole
File Edit View Bookmarks Settings Help
preuss@linux-s2020:~/vpn-demo> /sbin/ip a sh
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
   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
   link/ether 00:0c:29:2e:94:9d brd ff:ff:ff:ff:ff:ff
   inet 192.168.24.56/24 brd 192.168.24.255 scope global noprefixroute dynamic
       valid_lft 85890sec preferred_lft 85890sec
   inet6 2001:470:1f11:112c:dc2a:bac6:574d:e3bb/64 scope global temporary dynamic
       valid_lft 533sec preferred_lft 533sec
   inet6 2001:470:1f11:112c:64ec:6668:bb35:67ea/64 scope global mngtmpaddr noprefixroute
       valid_lft 533sec preferred_lft 533sec
   inet6 fe80::c479:8852:91e3:5c9d/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
3: docker0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN
   link/ether 02:42:52:94:84:54 brd ff:ff:ff:ff:ff:ff
   inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
       valid_lft forever preferred_lft forever
preuss@linux-s2020:~/vpn-demo> █
```

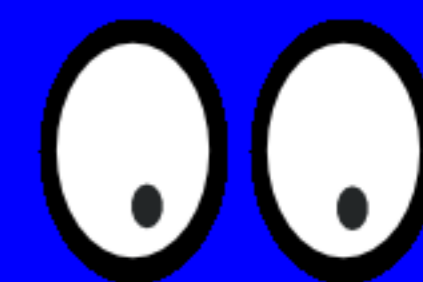
The presentation reviews the network connection before connecting to the vpn.



Home



Trash



The presentation uses a single left click on the network icon (the monitor picture with wire). The presentation selects "Configure Network Connections..."

The presentation sees the vpn configuration.

Networks



Active connections

Wired connection 1
Connected, ↓ 0 B/s, ↑ 0 B/s

docker0
Connected

Available connections

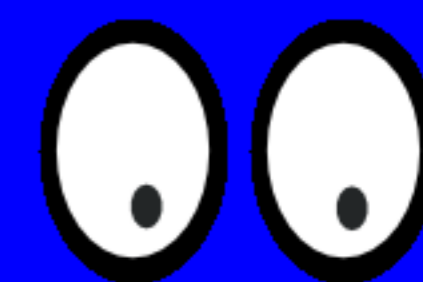
egypt-UDP4-1194-spring2020_student-config
Never used



Home



Trash



The presentation selects the "Connect" box to connect the the M State "maitlab" network.



Available connections

	egypt-UDP4-1194-spring2020_student-c... Never used	Connect
--	---	---------



```

vpn-demo : bash — Konsole
File Edit View Bookmarks Settings Help
preuss@linux-s2020:~/vpn-demo> /sbin/ip a sh
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
   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 08:00:27:00:00:00 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.2/24 scope global noprefixroute dynamic eth0
       valid_lft forever preferred_lft forever
   inet6 fe80::c64f:df20:535c:dbe2/64 scope global temporary dynamic
       valid_lft forever preferred_lft forever
   inet6 fe80::c64f:df20:535c:dbe2/64 scope global mngtppaddr noprefixroute dynamic
       valid_lft forever preferred_lft forever
   inet6 fe80::c64f:df20:535c:dbe2/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
3: docker0: <BROADCAST,MULTICAST,NOARP,UP,LOWER_UP> mtu 1500 qdisc noqueue state DOWN group default
   link/ether 02:00:00:00:00:00 brd ff:ff:ff:ff:ff:ff
   inet 172.17.0.1/16 brd 172.17.255.255 scope global docker0
       valid_lft forever preferred_lft forever
4: tun0: <POINTOPOINT,MULTICAST,NOARP,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UNKNOWN group default qlen 1000
   link/none
   inet 192.168.164.2/24 brd 192.168.164.255 scope global noprefixroute tun0
       valid_lft forever preferred_lft forever
   inet6 2607:f930:1200:acff::1000 peer 2607:f930:1200:acff::1/64 scope global noprefixroute
       valid_lft forever preferred_lft forever
   inet6 fe80::c64f:df20:535c:dbe2/64 scope link flags 800
       valid_lft forever preferred_lft forever
preuss@linux-s2020:~/vpn-demo>

```

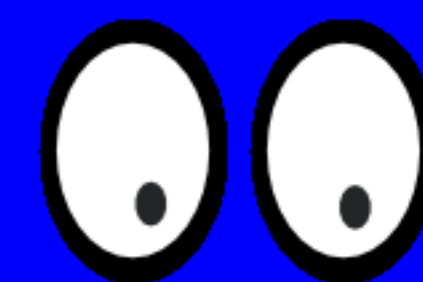
The presentation verifies the vpn tunnel is setup as shown.



Home



Trash



The presentation uses a single left click on the network icon (the monitor picture with wire). The presentation selects "Configure Network Connections..."

The presentation selects "Disconnect" to drop the connection.

Wired connection 1
Connected, ↓ 0 B/s, ↑ 0 B/s

egypt-UDP4-1194-spring2020_student-c...
Connected

docker0
Connected