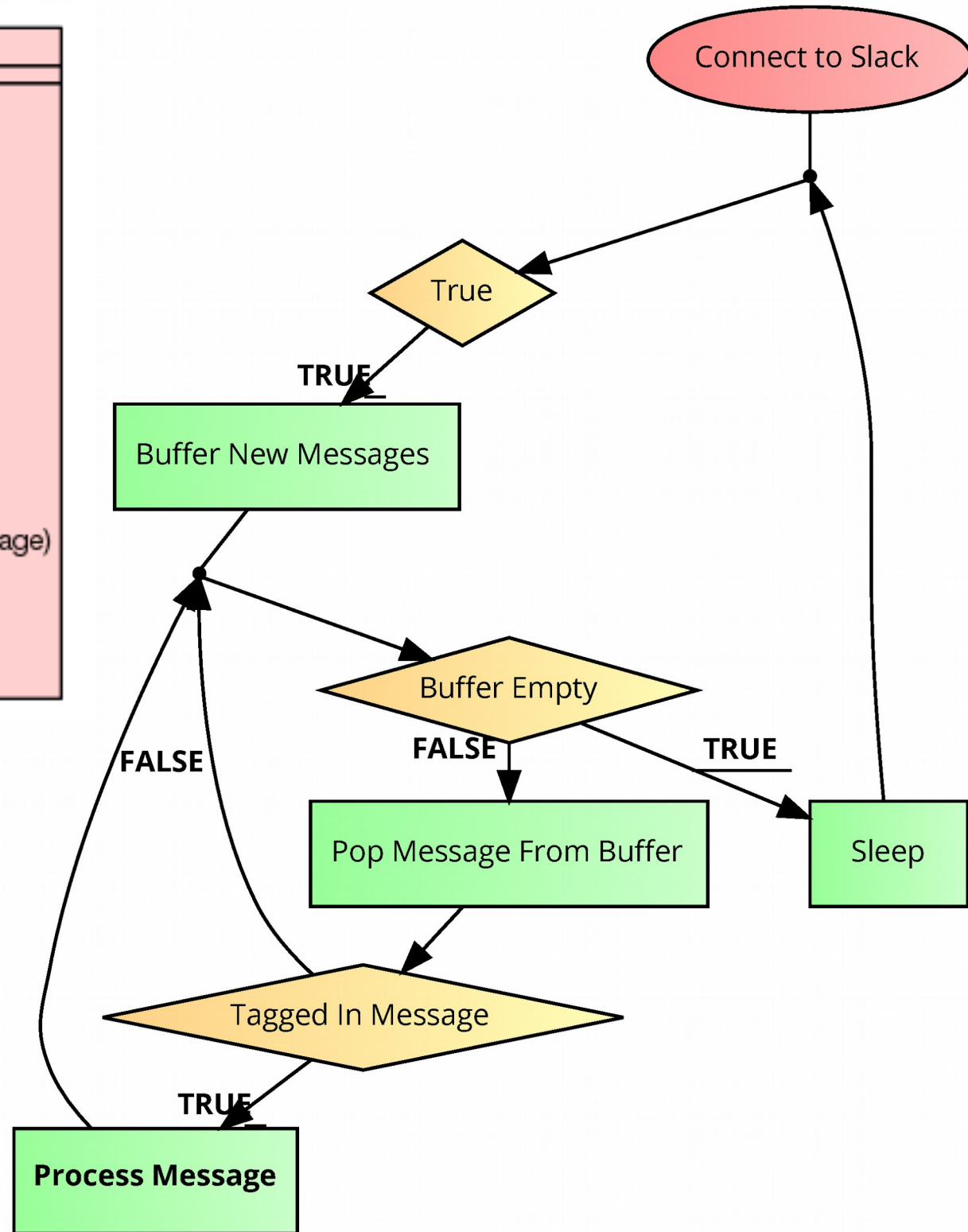


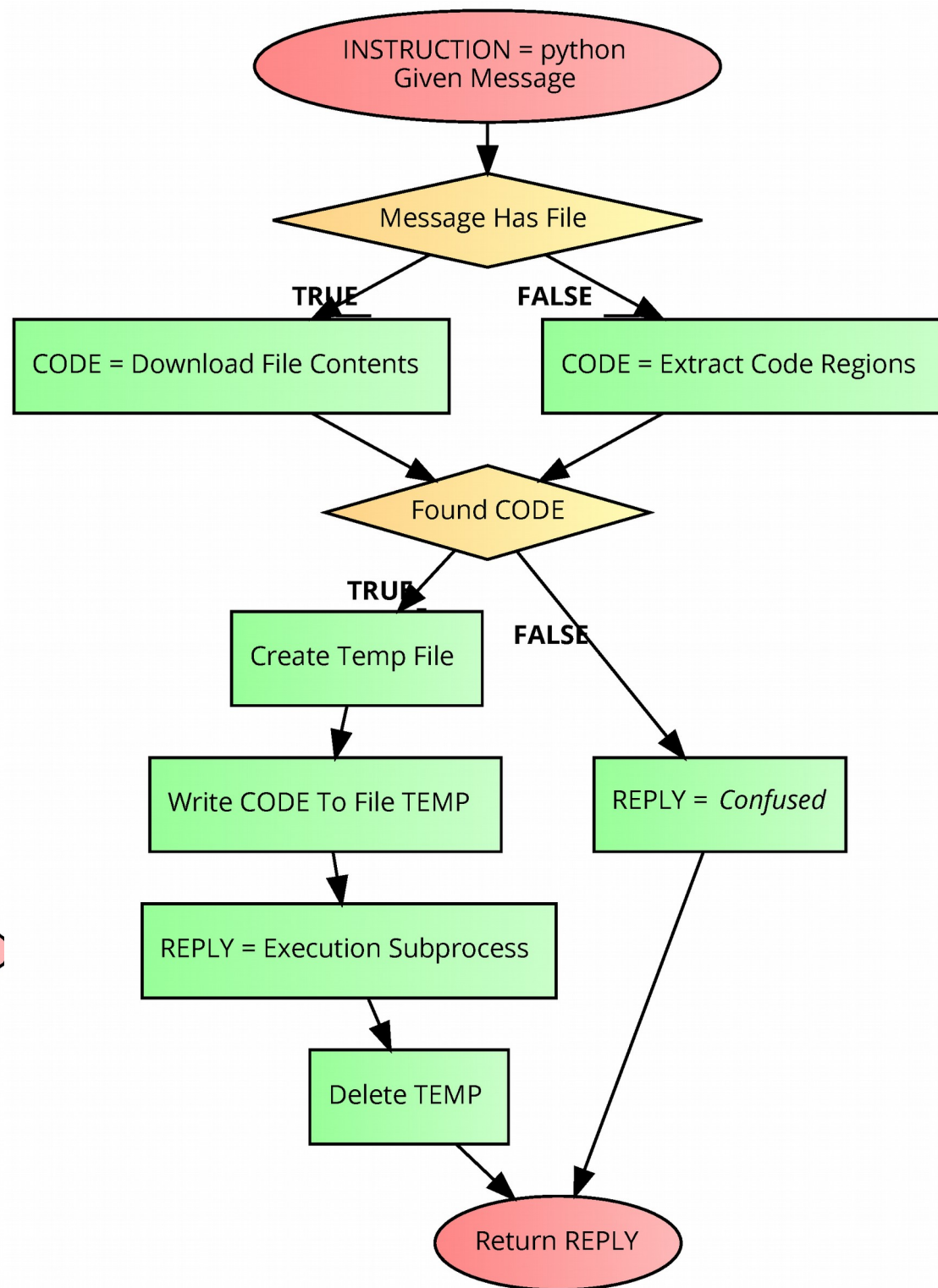
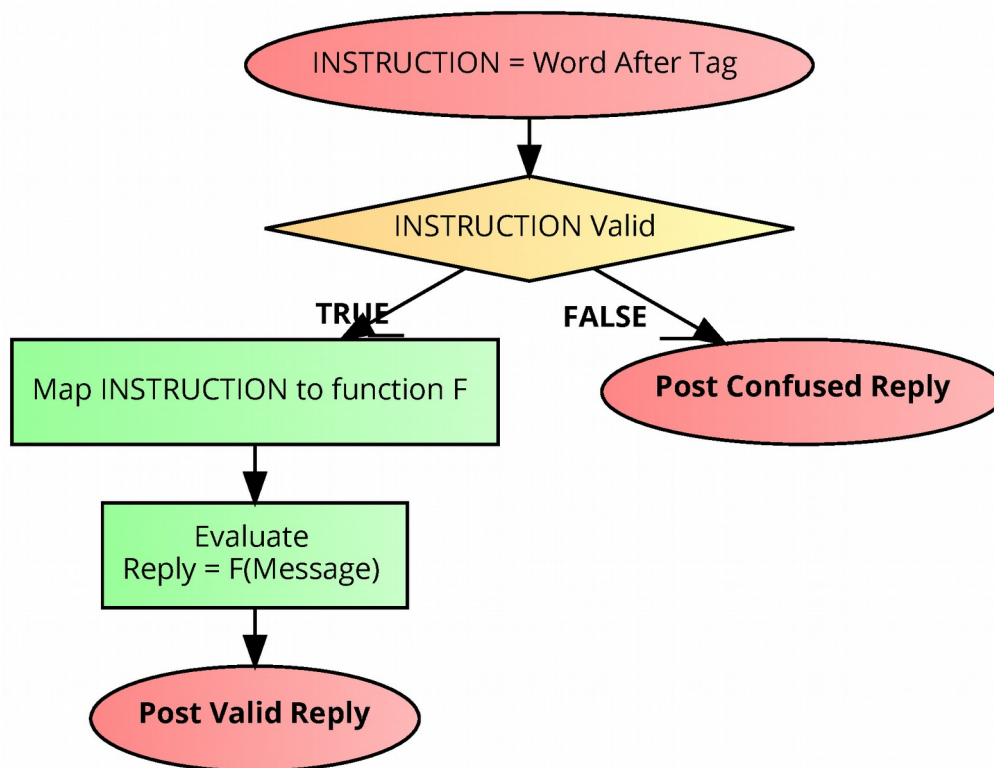
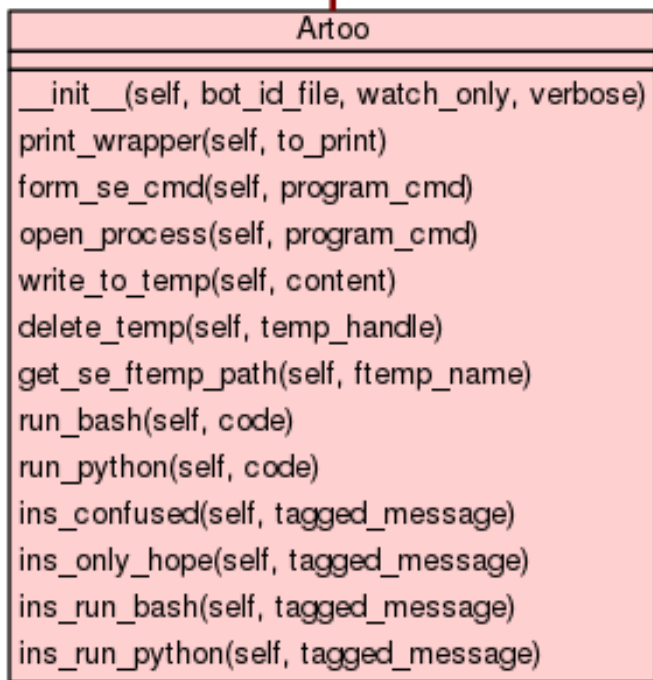
1. Artoo Flowchart
2. Subclassing the Bot Interface
3. Fedora Virtual Machine Tips
4. The SELinux Sandbox



SlackBotInterface

```
__init__(self, bot_id_file, watch_only)
read_token_from_file(self, file_path)
lookup_user_name(self, userid)
get_message_user_tag(self, tagged_message)
get_message_text(self, tagged_message)
get_message_file_url(self, tagged_message)
download_file_content(self, file_url)
get_code_from_regions(self, base_text)
get_message_code(self, tagged_message)
ins_confused(self, tagged_message)
execute_instruction(self, instruction, tagged_message)
reply_tagged_message(self, tagged_message)
filter_tagged_messages(self)
poll_slack(self)
```





- Subclassing the Bot Interface

Oracle VM VirtualBox Manager

File Machine Help

New Settings Discard Show

Details Snapshots (1)

Artoo (Working Artoo!) Running

General

Name: Artoo
Operating System: Fedora (64-bit)

System

Base Memory: 4096 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization

Display

Video Memory: 16 MB
Remote Desktop Server: Disabled
Video Capture: Disabled

Storage

Controller: IDE
IDE Secondary Master: [Optical Drive] Empty
Controller: SATA
SATA Port 0: Artoo.vdi (Normal, 20.00 GB)

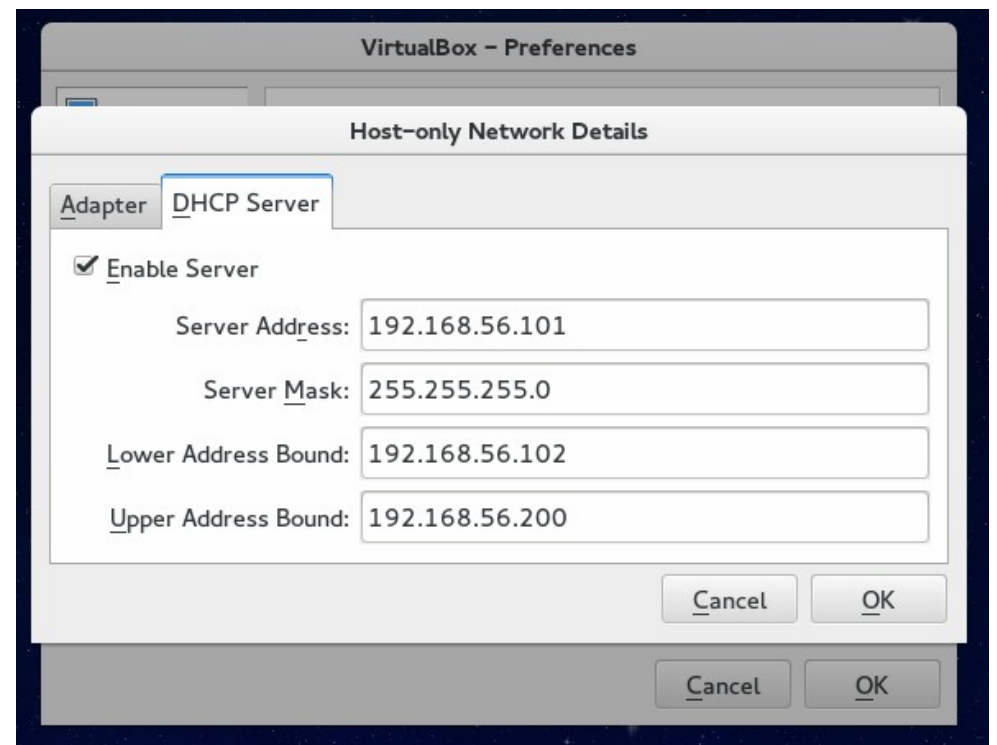
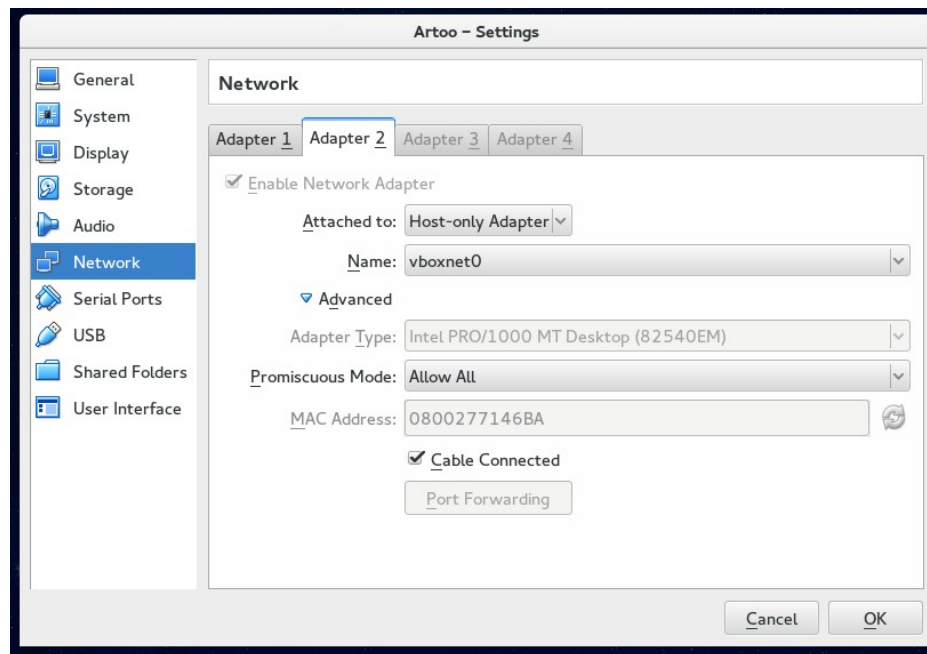
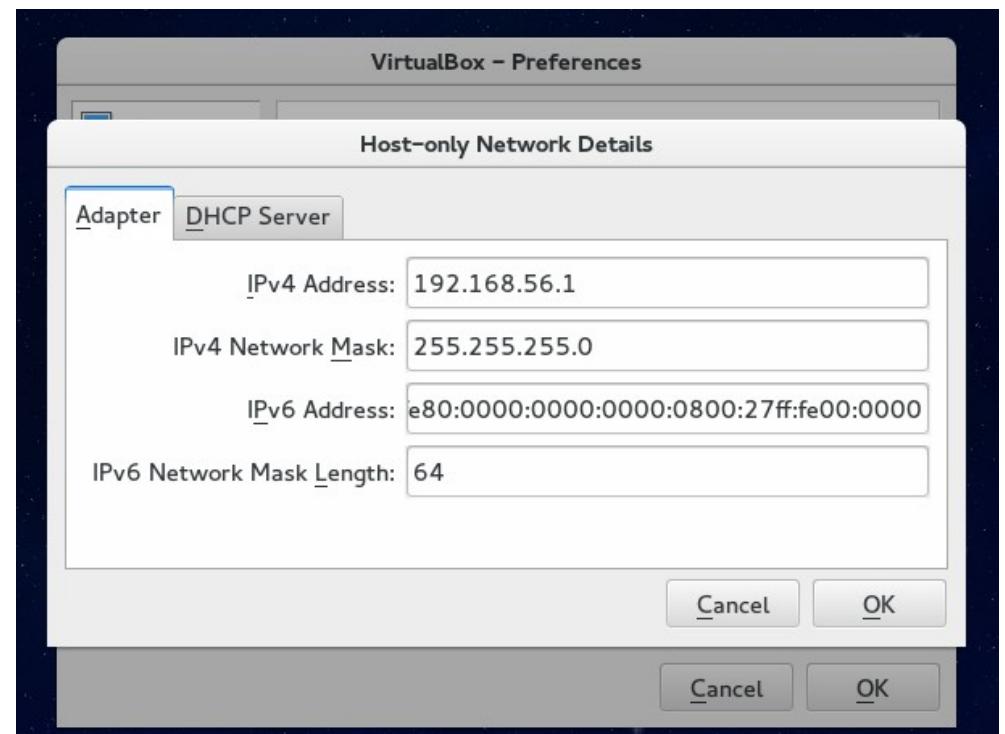
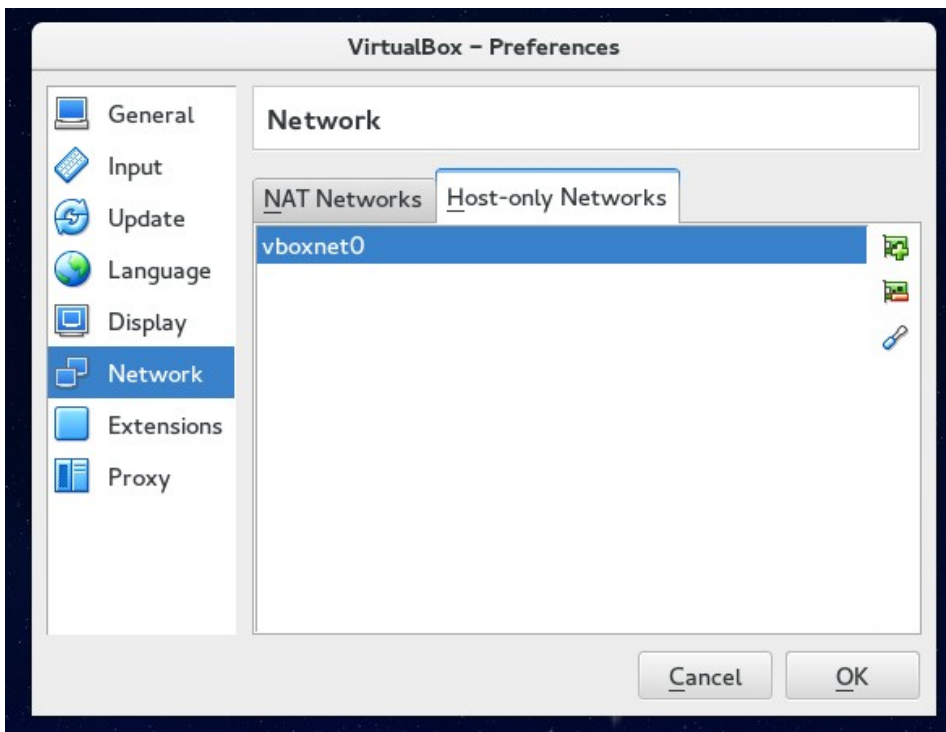
Audio

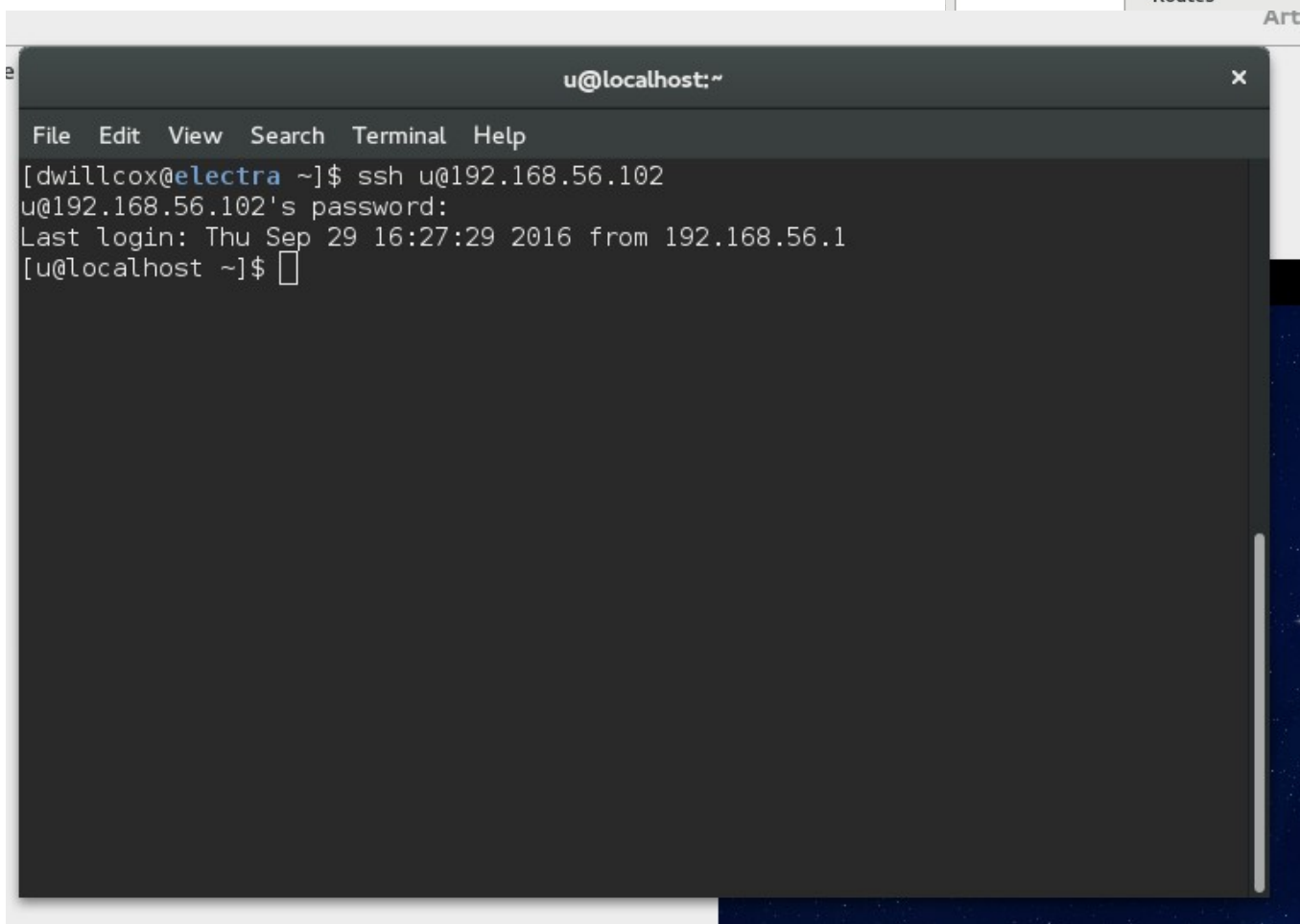
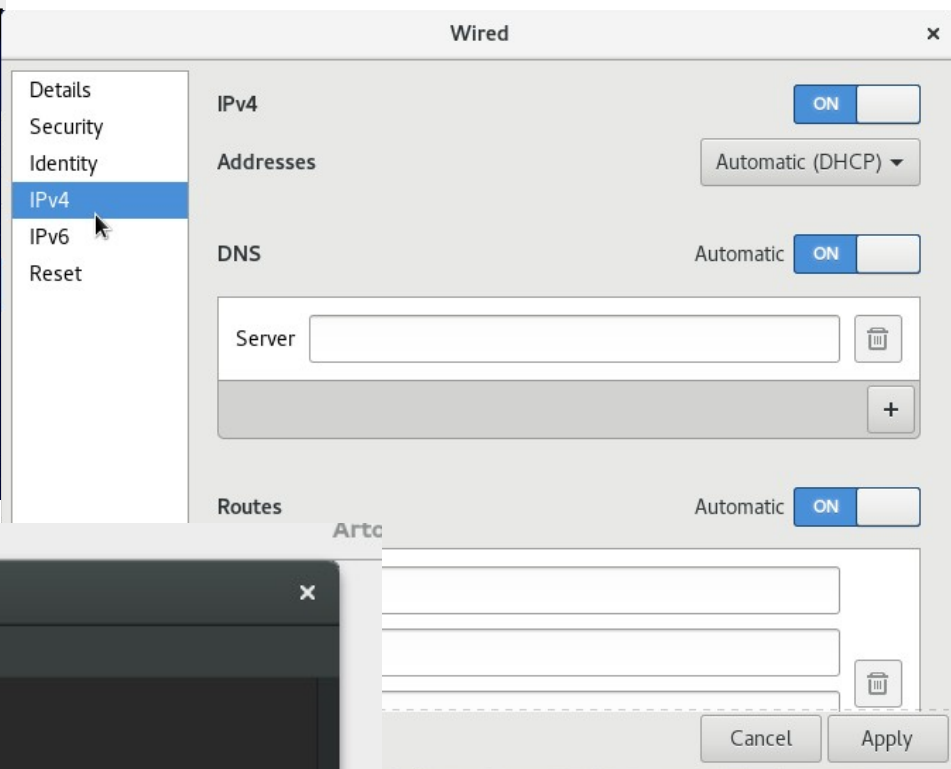
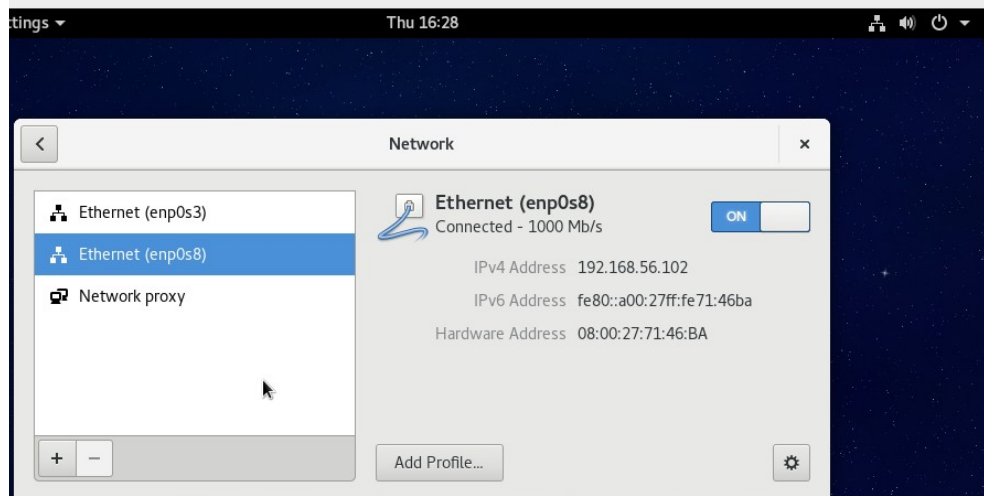
Host Driver: PulseAudio
Controller: ICH AC97

Network

Adapter 1: Intel PRO/1000 MT Desktop (NAT)
Adapter 2: Intel PRO/1000 MT Desktop (Host-only Adapter, 'vboxnet0')

Preview





```
u@localhost:/home/u
File Edit View Search Terminal Help
[root@localhost u]# sestatus
SELinux status:                enabled
SELinuxfs mount:              /sys/fs/selinux
SELinux root directory:      /etc/selinux
Loaded policy name:           targeted
Current mode:                 enforcing
Mode from config file:       enforcing
Policy MLS status:           enabled
Policy deny_unknown status:   allowed
Max kernel policy version:    30
[root@localhost u]# setsebool -P global_ssp on
[root@localhost u]#
```

```
u@localhost:/home/u
File Edit View Search Terminal Help
[root@localhost u]# dnf install selinux-policy-sandbox policycoreutils-sandbox
Last metadata expiration check: 0:04:07 ago on Thu Sep 29 16:35:47 2016.
Dependencies resolved.
=====
Package                                Arch      Version                                Repository                                Size
=====
Installing:
imlib2                                x86_64    1.4.9-1.fc24                          fedora                                    212 k
openbox                                x86_64    3.6.1-2.fc24                          fedora                                    320 k
openbox-libs                           x86_64    3.6.1-2.fc24                          fedora                                    85 k
policycoreutils-sandbox                x86_64    2.5-13.fc24                           updates                                  176 k
python                                  x86_64    2.7.12-5.fc24                         updates                                  97 k
python-libs                            x86_64    2.7.12-5.fc24                         updates                                  5.8 M
python-pip                             noarch    8.0.2-1.fc24                          fedora                                    1.7 M
python2-setuptools                    noarch    20.1.1-1.fc24                         fedora                                    417 k
pyxdg                                  noarch    0.25-8.fc24                           fedora                                    92 k
selinux-policy-sandbox                 noarch    3.13.1-191.16.fc24                   updates                                  471 k
xorg-x11-server-Xephyr                 x86_64    1.18.3-2.fc24                         fedora                                    1.0 M
Upgrading:
libselinux                            x86_64    2.5-9.fc24                            updates                                  163 k
libselinux-python3                    x86_64    2.5-9.fc24                            updates                                  243 k
libselinux-utils                       x86_64    2.5-9.fc24                            updates                                  158 k
libsemanage                           x86_64    2.5-5.fc24                            updates                                  149 k
libsemanage-python3                   x86_64    2.5-5.fc24                            updates                                  113 k
libsepol                               x86_64    2.5-8.fc24                            updates                                  294 k
policycoreutils                        x86_64    2.5-13.fc24                           updates                                  850 k
policycoreutils-python-utils           x86_64    2.5-13.fc24                           updates                                  216 k
policycoreutils-python3                x86_64    2.5-13.fc24                           updates                                  1.8 M
selinux-policy                         noarch    3.13.1-191.16.fc24                   updates                                  472 k
selinux-policy-targeted                 noarch    3.13.1-191.16.fc24                   updates                                  8.7 M

Transaction Summary
=====
Install  11 Packages
Upgrade  11 Packages

Total download size: 23 M
Is this ok [y/N]: y
```


File Edit View Search Terminal Help

```
[u@localhost Artoo]$ cat sbx_home/tmp/tm33
```

```
print('hello!')
```

```
[u@localhost Artoo]$ python sbx_home/tmp/tm33
```

```
hello!
```

```
[u@localhost Artoo]$ which python
```

```
~/anaconda3/bin/python
```

```
[u@localhost Artoo]$ sandbox -M -H sbx_home -T sbx_home/tmp python tmp/tm33
```

```
Failed to execute command /home/u/anaconda3/bin/python3.5: Permission denied
```

```
[u@localhost Artoo]$ ls sbx_home
```

```
anaconda3  README.md  tmp
```

```
[u@localhost Artoo]$ ls sbx_home/anaconda3/bin/python*
```

```
sbx_home/anaconda3/bin/python
```

```
sbx_home/anaconda3/bin/python3
```

```
sbx_home/anaconda3/bin/python3.5
```

```
sbx_home/anaconda3/bin/python3.5-config
```

```
sbx_home/anaconda3/bin/python3.5m
```

```
sbx_home/anaconda3/bin/python3.5m-config
```

```
sbx_home/anaconda3/bin/python3-config
```

```
sbx_home/anaconda3/bin/python-argcomplete-check-easy-install-script
```

```
[u@localhost Artoo]$ ls -Z -d ~/anaconda3
```

```
unconfined_u:object_r:user_home_t:s0 /home/u/anaconda3
```

```
[u@localhost Artoo]$ ls -Z -d sbx_home/anaconda3
```

```
unconfined_u:object_r:sandbox_file_t:s0:c390,c829 sbx_home/anaconda3
```

```
[u@localhost Artoo]$ cat sbx_home/.bashrc
```

```
# .bashrc for SELinux sandbox
```

```
echo 'Sourcing Sandboxed .bashrc!'
```

```
export PATH="/home/u/anaconda3/bin:$PATH"
```

```
[u@localhost Artoo]$ sandbox -M -H sbx_home -T sbx_home/tmp bash -c 'source /home/u/.bashrc && which python'
```

```
Sourcing Sandboxed .bashrc!
```

```
/home/u/anaconda3/bin/python
```

```
[u@localhost Artoo]$ sandbox -M -H sbx_home -T sbx_home/tmp bash -c 'source /home/u/.bashrc && python tmp/tm33'
```

```
Sourcing Sandboxed .bashrc!
```

```
hello!
```

```
[u@localhost Artoo]$
```