

Task 11. Yaml, Ansible**1. Create YAML file that's described persons:**

<https://github.com/dennis00010011b/epam-devops-training/blob/master/Task11/persons.yml>

Checked with validator <https://codebeautify.org/yaml-validator>

```
---
persons:
  - person: &id001
    lastName: Tikhomirov
    firstName: Dennis
    group: Devops_Summer_2019
    email: dennistikhomirov@gmail.com
    languages:
      english: c2
      chinese: b1
    programming:
      paskal: 8
      cobol: 4

  - person: &id002
    lastName: Doe
    firstName: John
    group: Centry_1977
    email: john_doe@gmail.com
    languages:
      english: c2
      chinese: b1
    programming:
      paskal: 8
      cobol: 4
---
hired: *id001
died: *id002
```

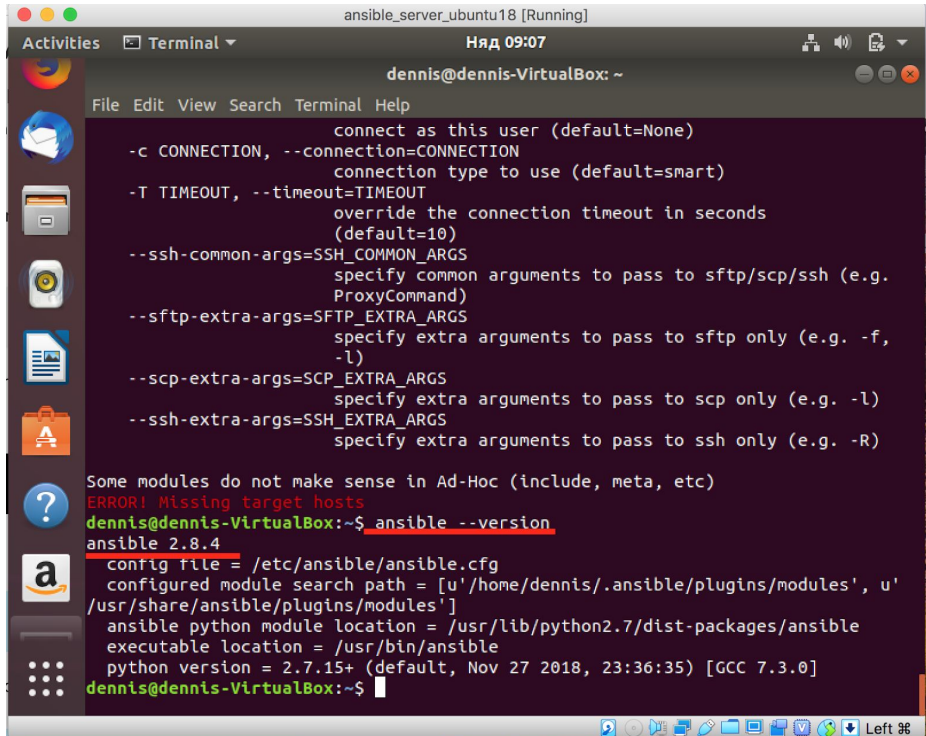
2. Ansible

2.1 Install Ansible

I used virtual machine with Ubuntu18 as a server.

Installation process described here:

<https://www.digitalocean.com/community/tutorials/how-to-install-and-configure-ansible-on-ubuntu-18-04>

A screenshot of a terminal window titled 'ansible_server_ubuntu18 [Running]'. The window shows the output of the 'ansible --version' command. The output lists various connection options like --connection, --timeout, --ssh-common-args, --sftp-extra-args, --scp-extra-args, and --ssh-extra-args. It also shows an error message 'ERROR! Missing target hosts' and the version information for Ansible 2.8.4, including the config file path, module search path, python module location, executable location, and python version (2.7.15+).

```
connect as this user (default=None)
-c CONNECTION, --connection=CONNECTION
    connection type to use (default=smart)
-T TIMEOUT, --timeout=TIMEOUT
    override the connection timeout in seconds
    (default=10)
--ssh-common-args=SSH_COMMON_ARGS
    specify common arguments to pass to sftp/scp/ssh (e.g.
    ProxyCommand)
--sftp-extra-args=SFTP_EXTRA_ARGS
    specify extra arguments to pass to sftp only (e.g. -f,
    -l)
--scp-extra-args=SCP_EXTRA_ARGS
    specify extra arguments to pass to scp only (e.g. -l)
--ssh-extra-args=SSH_EXTRA_ARGS
    specify extra arguments to pass to ssh only (e.g. -R)

Some modules do not make sense in Ad-Hoc (include, meta, etc)
ERROR! Missing target hosts
dennis@dennis-VirtualBox:~$ ansible --version
ansible 2.8.4
  config file = /etc/ansible/ansible.cfg
  configured module search path = [u'/home/dennis/.ansible/plugins/modules', u'
  /usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python2.7/dist-packages/ansible
  executable location = /usr/bin/ansible
  python version = 2.7.15+ (default, Nov 27 2018, 23:36:35) [GCC 7.3.0]
dennis@dennis-VirtualBox:~$
```

2.2 Add SSH keys on hosts machines

Create SSH keys ,nice tutorial:

<https://www.digitalocean.com/community/tutorials/how-to-set-up-ssh-keys-on-ubuntu-1804>

Don't forget to install on server and host's machines:

```
sudo apt-get install openssh-server openssh-client
```

Create SSH keys on server:

```
Ssh-keygen // no password, location ~/.ssh/id_rsa
```

Copy public key from server `~/.ssh/id_rsa.pub` to host machine to
`~/.ssh/authorized_keys`

Now server can connect to the host via SSH without password entering:

```
ssh dennis@192.168.33.11
```

Lastly, because Ansible uses a python interpreter located at `/usr/bin/python` to run its modules, you'll need to install Python 2 on the **host** in order for Ansible to communicate with it. Run the following commands to update the host's package index and install the python package. On each host:

```
sudo apt update
sudo apt install python
```

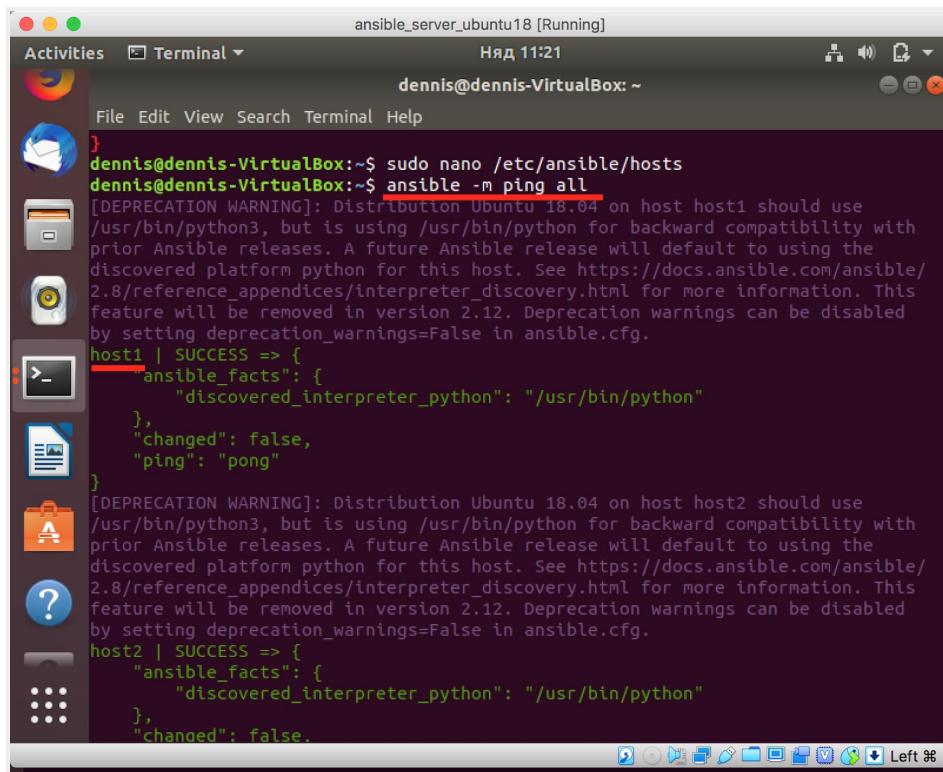
2.3 Inventory file

Located on server machine in `/etc/ansible/hosts`

```
[hosts]
host0 ansible_ssh_host=192.168.33.11 ansible_ssh_user=dennis
host1 ansible_ssh_host=192.168.33.12 ansible_ssh_user=dennis
host2 ansible_ssh_host=192.168.33.13 ansible_ssh_user=dennis
```

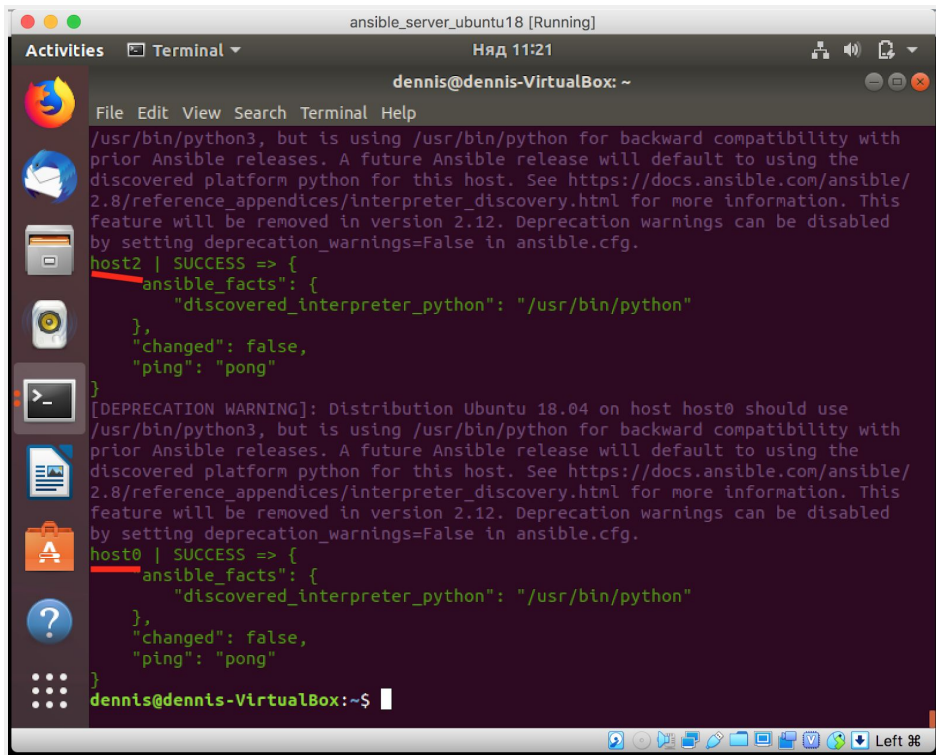
2.4 Ping all hosts:

```
ansible -m ping all
```



The screenshot shows a terminal window titled "ansible_server_ubuntu18 [Running]" with a menu bar (File, Edit, View, Search, Terminal, Help) and a system clock showing "Няд 11:21". The user "dennis@dennis-VirtualBox: ~" is at the prompt. The terminal shows the following commands and output:

```
dennis@dennis-VirtualBox:~$ sudo nano /etc/ansible/hosts
dennis@dennis-VirtualBox:~$ ansible -m ping all
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host1 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host1 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host2 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
```

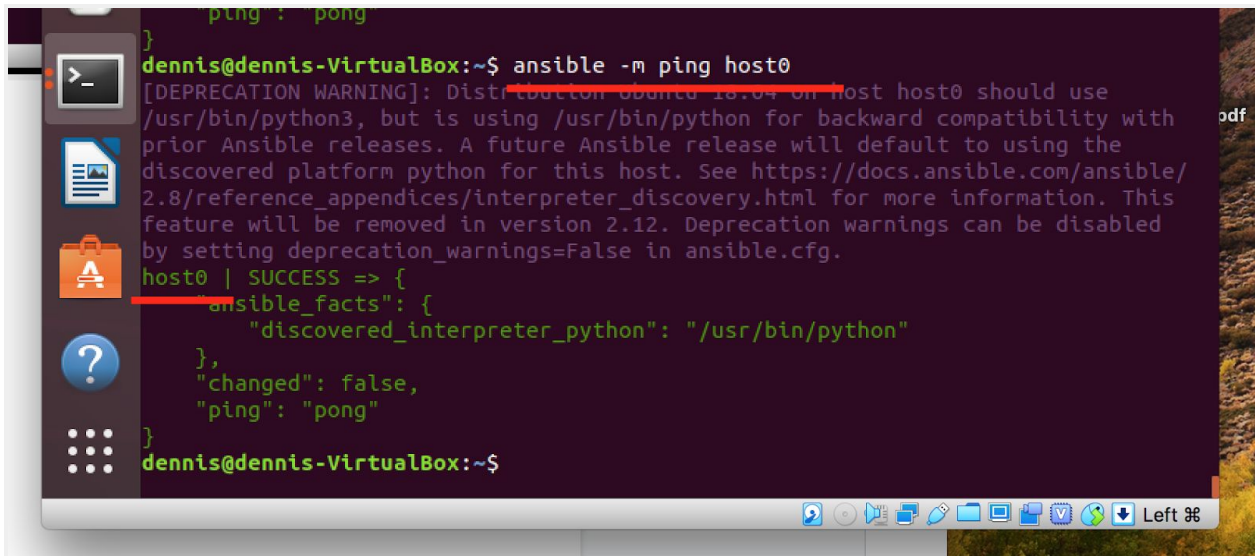


The image shows a terminal window titled 'ansible_server_ubuntu18 [Running]' with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Left 96). The prompt is 'dennis@dennis-VirtualBox: ~'. The output shows the results of an Ansible command for two hosts. For 'host2', the command was successful, and the 'ansible_facts' dictionary contains 'discovered_interpreter_python' as '/usr/bin/python', 'changed' as false, and 'ping' as 'pong'. For 'host0', a deprecation warning is shown, followed by the same successful result. The prompt returns to 'dennis@dennis-VirtualBox:~\$'.

```
ansible_server_ubuntu18 [Running]
File Edit View Search Terminal Help
dennis@dennis-VirtualBox: ~
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host0 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host0 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
dennis@dennis-VirtualBox:~$
```

2.5 Ping single host:

ansible -m ping host0

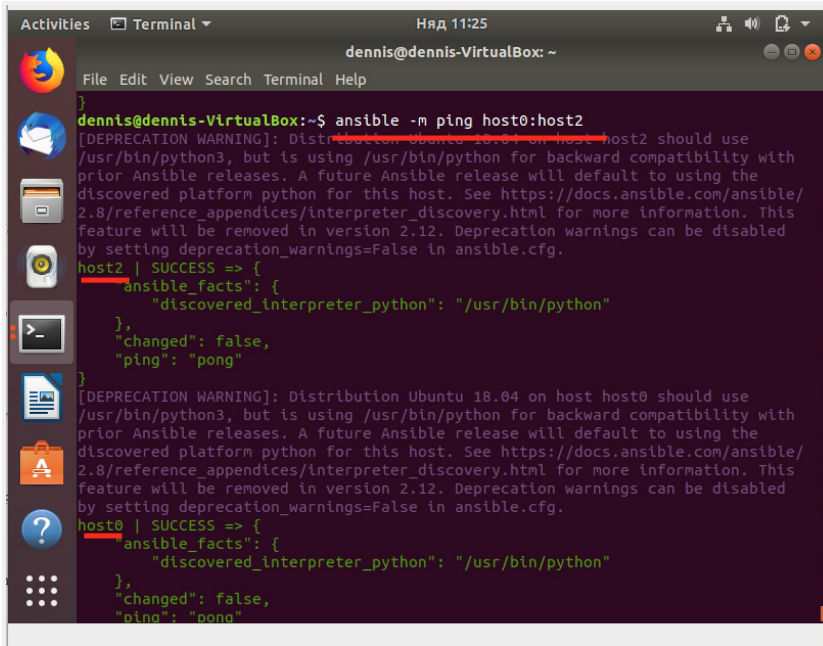


The image shows a terminal window with the prompt 'dennis@dennis-VirtualBox:~\$'. The command 'ansible -m ping host0' has been executed. The output shows a deprecation warning for host0, followed by the successful result of the ping command. The 'ansible_facts' dictionary contains 'discovered_interpreter_python' as '/usr/bin/python', 'changed' as false, and 'ping' as 'pong'. The prompt returns to 'dennis@dennis-VirtualBox:~\$'.

```
dennis@dennis-VirtualBox:~$ ansible -m ping host0
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host0 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host0 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
dennis@dennis-VirtualBox:~$
```

2.5 Ping specified hosts:

```
ansible -m ping host0:host2
```

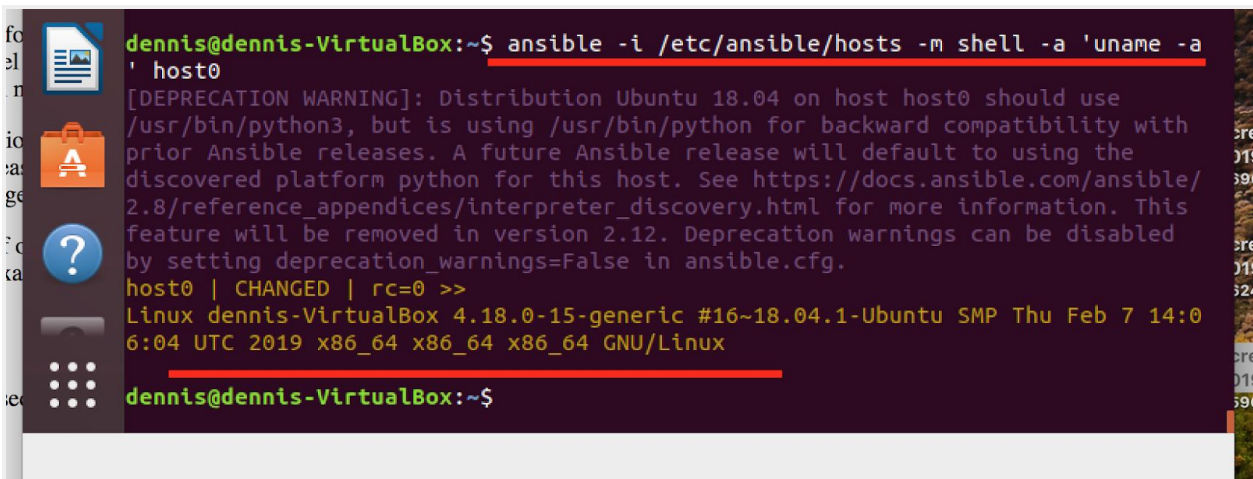


A terminal window titled "dennis@dennis-VirtualBox: ~" showing the execution of the command `ansible -m ping host0:host2`. The output displays deprecation warnings for both hosts, followed by success messages and JSON-formatted facts for each. The facts include the discovered interpreter path and the result of the ping command, which was "pong".

```
dennis@dennis-VirtualBox:~$ ansible -m ping host0:host2
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host2 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host2 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host0 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host0 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python"
  },
  "changed": false,
  "ping": "pong"
}
```

2.6 Try various commands

```
ansible -i /etc/ansible/hosts -m shell -a 'uname -a' host0
```

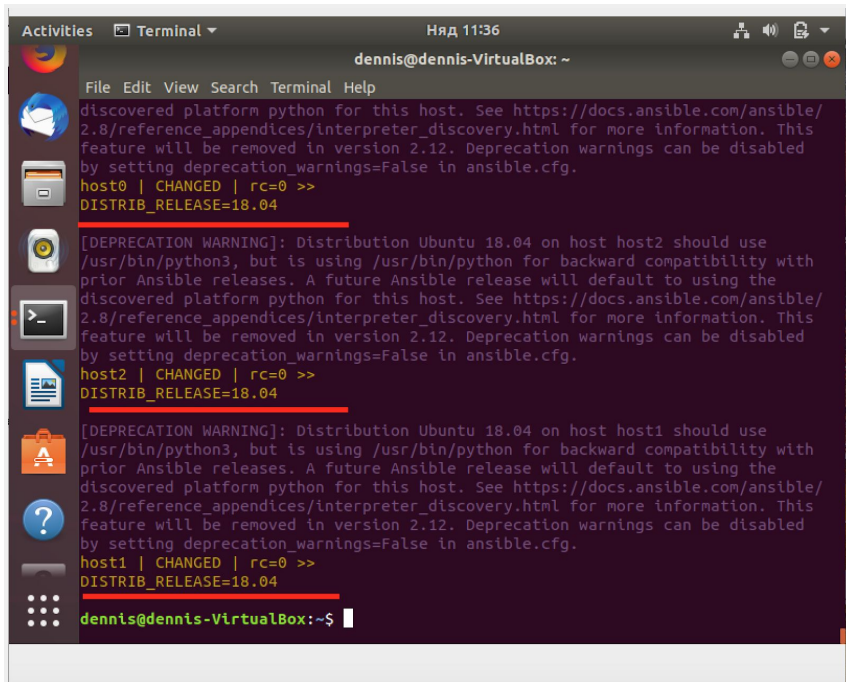


A terminal window titled "dennis@dennis-VirtualBox: ~" showing the execution of the command `ansible -i /etc/ansible/hosts -m shell -a 'uname -a' host0`. The output displays a deprecation warning, followed by a "CHANGED" status and the output of the `uname -a` command, which shows system information for the host.

```
dennis@dennis-VirtualBox:~$ ansible -i /etc/ansible/hosts -m shell -a 'uname -a' host0
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host0 should use
/usr/bin/python3, but is using /usr/bin/python for backward compatibility with
prior Ansible releases. A future Ansible release will default to using the
discovered platform python for this host. See https://docs.ansible.com/ansible/
2.8/reference_appendices/interpreter_discovery.html for more information. This
feature will be removed in version 2.12. Deprecation warnings can be disabled
by setting deprecation_warnings=False in ansible.cfg.
host0 | CHANGED | rc=0 >>
Linux dennis-VirtualBox 4.18.0-15-generic #16~18.04.1-Ubuntu SMP Thu Feb 7 14:0
6:04 UTC 2019 x86_64 x86_64 x86_64 GNU/Linux
dennis@dennis-VirtualBox:~$
```



```
ansible -i /etc/ansible/hosts -m shell -a 'grep DISTRIB_RELEASE /etc/lsb-release' all
```

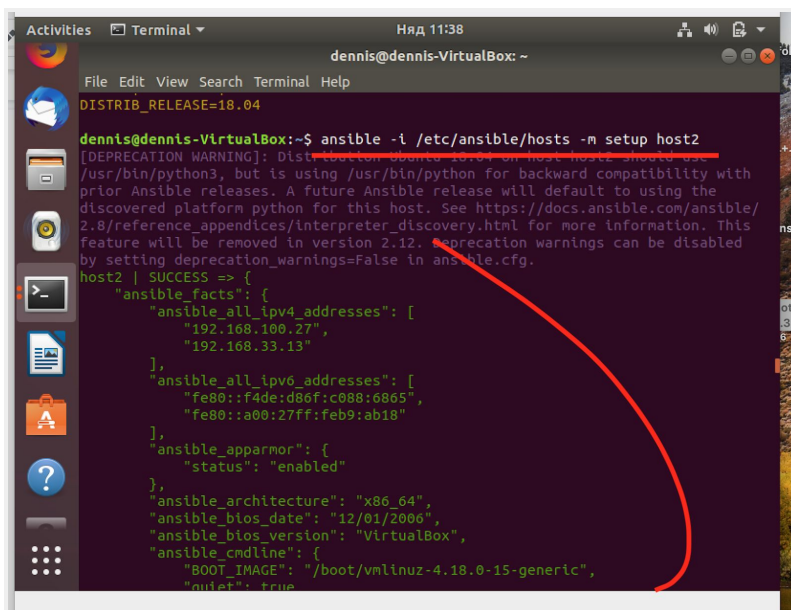


A terminal window titled "dennis@dennis-VirtualBox: ~" showing the output of an Ansible command. The command is `ansible -i /etc/ansible/hosts -m shell -a 'grep DISTRIB_RELEASE /etc/lsb-release' all`. The output shows the command being executed on three hosts: host0, host2, and host1. Each host returns `DISTRIB_RELEASE=18.04`. There are deprecation warnings for each host, stating that Ubuntu 18.04 should use `/usr/bin/python3` but is using `/usr/bin/python` for backward compatibility. The terminal also shows a menu bar with "File Edit View Search Terminal Help" and a sidebar with various application icons.

```
dennis@dennis-VirtualBox: ~  
File Edit View Search Terminal Help  
discovered platform python for this host. See https://docs.ansible.com/ansible/2.8/reference_appendices/interpreter_discovery.html for more information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.  
host0 | CHANGED | rc=0 >>  
DISTRIB_RELEASE=18.04  
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host2 should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.8/reference_appendices/interpreter_discovery.html for more information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.  
host2 | CHANGED | rc=0 >>  
DISTRIB_RELEASE=18.04  
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host1 should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.8/reference_appendices/interpreter_discovery.html for more information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.  
host1 | CHANGED | rc=0 >>  
DISTRIB_RELEASE=18.04  
dennis@dennis-VirtualBox:~$
```

Gathers facts about remote hosts

```
ansible -i /etc/ansible/hosts -m setup host2
```



A terminal window titled "dennis@dennis-VirtualBox: ~" showing the output of an Ansible command. The command is `ansible -i /etc/ansible/hosts -m setup host2`. The output shows the command being executed on host2, which returns a JSON object containing system facts. A red arrow points from the command line to the output. The terminal also shows a menu bar with "File Edit View Search Terminal Help" and a sidebar with various application icons.

```
dennis@dennis-VirtualBox: ~  
File Edit View Search Terminal Help  
DISTRIB_RELEASE=18.04  
dennis@dennis-VirtualBox:~$ ansible -i /etc/ansible/hosts -m setup host2  
[DEPRECATION WARNING]: Distribution Ubuntu 18.04 on host host2 should use /usr/bin/python3, but is using /usr/bin/python for backward compatibility with prior Ansible releases. A future Ansible release will default to using the discovered platform python for this host. See https://docs.ansible.com/ansible/2.8/reference_appendices/interpreter_discovery.html for more information. This feature will be removed in version 2.12. Deprecation warnings can be disabled by setting deprecation_warnings=False in ansible.cfg.  
host2 | SUCCESS => {  
  "ansible_facts": {  
    "ansible_all_ipv4_addresses": [  
      "192.168.100.27",  
      "192.168.33.13"  
    ],  
    "ansible_all_ipv6_addresses": [  
      "fe80::f4de:d86f:c088:6865",  
      "fe80::a00:27ff:feb9:ab18"  
    ],  
    "ansible_apparmor": {  
      "status": "enabled"  
    },  
    "ansible_architecture": "x86_64",  
    "ansible_bios_date": "12/01/2006",  
    "ansible_bios_version": "VirtualBox",  
    "ansible_cmdline": {  
      "BOOT_IMAGE": "/boot/vmlinuz-4.18.0-15-generic",  
      "quiet": true  
    }  
  }  
}
```