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ЛАБОРАТОРНАЯ РАБОТА

«Ansible»

УП.02.02 «Организация администрирования операционных систем Linux»

Выполнил

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На 1 рисунке обновляем пакеты

```
root@CLI:/home/karpov# apt update && apt upgrade
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Hit:2 http://ru.archive.ubuntu.com/ubuntu jammy InRelease
Get:3 http://ru.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:4 http://ru.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:5 http://ru.archive.ubuntu.com/ubuntu jammy-updates/main amd64 DEP-11 Metadata [103 kB]
Get:6 http://ru.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 DEP-11 Metadata [212 B]
Get:7 http://ru.archive.ubuntu.com/ubuntu jammy-updates/universe i386 Packages [762 kB]
48% [7 Packages 601 kB/762 kB 79%]
```

Рис. 1

На 2 рисунке устанавливаем следующие пакеты

```
root@CLI:/home/karpov# apt install ansible python3-pip python3.10-venv sshpass -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  systemd-hwe-hwdb
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential cpp-11 dpkg-dev fakeroot g++ g++-11 gcc gcc-11 gcc-11-base gcc-12-base
  ieee-data javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan6 libatomic1 libbinutils libc-d
  libc-devtools libc6 libc6-dbg libc6-dev libc6-i686 libcrypt-dev libctf-nobfd0 libctf0 libdpkg-perl libexpat1 libexpat1-dev libfakeroot
  libfile-fcntllock-perl libgcc-11-dev libgcc-s1 libgomp1 libitm1 libjs-jquery libjs-sphinxdoc libjs-underscore liblsan0 libnsl-dev libpython
  libpython3-stdlib libpython3.10 libpython3.10-dev libpython3.10-minimal libpython3.10-stdlib libquadmath0 libstdc++-11-dev libstdc++6 libti
  libtsan0 libubsan1 linux-libc-dev lto-disabled-list make manpages-dev python-babel-localedata python3 python3-argcomplete python3-babel
  python3-dev python3-distutils python3-dnspython python3-jinja2 python3-jmespath python3-kerberos python3-lib2to3 python3-libcloud python3-m
  python3-netaddr python3-ntlm-auth python3-packaging python3-pip-whl python3-pkg-resources python3-pycryptodome python3-requests-kerberos
  python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-setuptools python3-setuptools-whl python3-simplejson python3-wheel
  python3-worm python3-xmltodict python3.10 python3.10-dev python3.10-minimal rpcsvc-proto zlib1g zlib1g-dev
Suggested packages:
  cowsay binutils-doc gcc-11-locales debian-keyring g++-multilib g++-11-multilib gcc-11-doc gcc-multilib autoconf automake libtool flex bison
  gcc-doc gcc-11-multilib apache2 | lighttpd | httpd glibc-doc git bzr libstdc++-11-doc make-doc python3-doc python3-tk python3-venv python3-
  python3-trio python-jinja2-doc ipython3 python-netaddr-docs python-setuptools-doc python3.10-doc binfmt-support
Recommended packages:
  libnss-nis libnss-nisplus
The following NEW packages will be installed:
  ansible binutils binutils-common binutils-x86-64-linux-gnu build-essential dpkg-dev fakeroot g++ g++-11 gcc gcc-11 ieee-data javascript-com
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan6 libatomic1 libbinutils libc-dev-bin libc-devtools libc6-d
  libc6-i686 libcrypt-dev libctf-nobfd0 libctf0 libdpkg-perl libexpat1-dev libfakeroot libfile-fcntllock-perl libgcc-11-dev libitm1 libjs-jquer
  libjs-sphinxdoc libjs-underscore liblsan0 libnsl-dev libpython3-dev libpython3.10-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0
  libubsan1 linux-libc-dev lto-disabled-list make manpages-dev python-babel-localedata python3-argcomplete python3-babel python3-dev
  python3-distutils python3-dnspython python3-jinja2 python3-jmespath python3-kerberos python3-libcloud python3-netaddr python3-ntlm-auth
  python3-packaging python3-pip python3-pip-whl python3-pycryptodome python3-requests-kerberos python3-requests-ntlm python3-requests-toolbel
  python3-selinux python3-setuptools python3-setuptools-whl python3-simplejson python3-wheel python3-worm python3-xmltodict python3.10-dev
  python3.10-venv rpcsvc-proto sshpass zlib1g-dev
The following packages will be upgraded:
```

Рис. 2

На 3 рисунке создаем виртуальное окружение и устанавливаем необходимые библиотеки

```
root@CLI:/home/karpov#
root@CLI:/home/karpov#
root@CLI:/home/karpov# python3 -m venv /ruta/al/entorno
root@CLI:/home/karpov# source /ruta/al/entorno/bin/activate
(entorno) root@CLI:/home/karpov# pip install ansible-pylibssh
Collecting ansible-pylibssh
  Downloading ansible_pylibssh-1.2.2-cp310-cp310-manylinux_2_28_x86_64.whl (2.8 MB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 2.8/2.8 MB 1.1 MB/s eta 0:00:00
Installing collected packages: ansible-pylibssh
Successfully installed ansible-pylibssh-1.2.2
(entorno) root@CLI:/home/karpov# pip3 install paramiko
Collecting paramiko
  Downloading paramiko-3.5.1-py3-none-any.whl (227 kB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 227.3/227.3 KB 594.9 kB/s eta 0:00:00
Collecting bcrypt>=3.2
  Downloading bcrypt-4.3.0-cp39-abi3-manylinux_2_34_x86_64.whl (284 kB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 284.2/284.2 KB 757.7 kB/s eta 0:00:00
Collecting cryptography>=3.3
  Downloading cryptography-44.0.2-cp39-abi3-manylinux_2_34_x86_64.whl (4.2 MB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 4.2/4.2 MB 1.4 MB/s eta 0:00:00
Collecting pynacl>=1.5
  Downloading PyNaCl-1.5.0-cp36-abi3-manylinux_2_17_x86_64.manylinux2014_x86_64.manylinux_2_24_x86_64.whl (856 kB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 856.7/856.7 KB 2.1 MB/s eta 0:00:00
Collecting cffi>=1.12
  Downloading cffi-1.17.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (446 kB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 446.2/446.2 KB 1.8 MB/s eta 0:00:00
Collecting pycparser
  Downloading pycparser-2.22-py3-none-any.whl (117 kB)
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 117.6/117.6 KB 1.5 MB/s eta 0:00:00
Installing collected packages: pycparser, bcrypt, cffi, pynacl, cryptography, paramiko
Successfully installed bcrypt-4.3.0 cffi-1.17.1 cryptography-44.0.2 paramiko-3.5.1 pycparser-2.22 pynacl-1.5.0
(entorno) root@CLI:/home/karpov# deactivate
root@CLI:/home/karpov#
```

Рис. 3

На 4 рисунке создали файл ansible.cfg и отредактировали его

```
GNU nano 6.2                               ansible.cfg *
[defaults]
inventory = ./myhosts.ini
gathering = explicit
host_key_checking=False
```

Рис. 4

На 5 рисунке создали файл myhosts.ini и отредактировали его

```
root@CLI:~/ansible# cd ..
root@CLI:~# nano myhosts.ini
root@CLI:~# cat myhosts.ini
[ubuntu server]
192.168.41.138                                #SRV1
root@CLI:~# █
```

Рис. 5

На 6 рисунке создали файл test.yaml и отредактировали его для создания файла на удаленном сервере

```
GNU nano 6.2                                test.yaml *
```

```
- name: Создание файла A_Karpov.txt на сервере Ubuntu
  hosts: ubuntu_server
  become: yes
  tasks:
    - name: Создать файл test.txt
      file:
        path: /home/karpov/A_Karpov.txt
        state: touch█
```

Рис. 6

На 7 рисунке запускаем playbook и проверяем успешность выполнения.

```
root@CLI:~# ANSIBLE_BECOME_METHOD=su ANSIBLE_HOST_KEY_CHECKING=False ansible-playbook -i myho
sts.ini test.yaml -u karpov --become --ask-pass --ask-become-pass
SSH password:
BECOME password[defaults to SSH password]:

PLAY [Создание файла A_Karpov.txt на сервере Ubuntu] *****

TASK [Gathering Facts] *****
ok: [192.168.41.138]

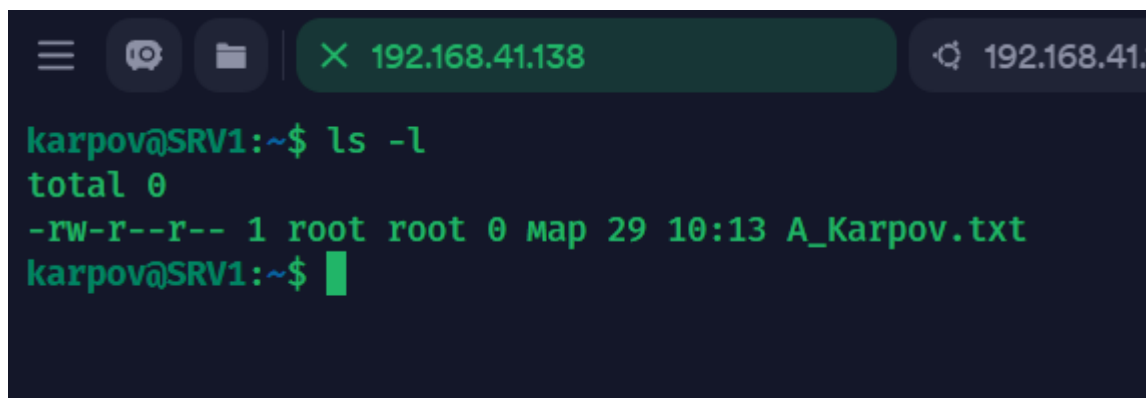
TASK [Создать файл test.txt] *****
changed: [192.168.41.138]

PLAY RECAP *****
192.168.41.138      : ok=2    changed=1    unreachable=0    failed=0    skipped=0    r
escued=0    ignored=0

root@CLI:~# █
```

Рис. 7

На 8 рисунке проверили работоспособность на сервере



A terminal window with a dark background and green text. The window title bar shows a hamburger menu icon, a settings gear icon, a folder icon, and two tabs. The first tab is active and shows 'X 192.168.41.138'. The second tab shows '192.168.41.138'. The terminal content shows a user 'karpov' at host 'SRV1' in the home directory '~'. The user has entered the command 'ls -l'. The output shows 'total 0' followed by a single file entry: '-rw-r--r-- 1 root root 0 map 29 10:13 A_Karpov.txt'. The prompt 'karpov@SRV1:~\$' is shown again with a green cursor.

```
karpov@SRV1:~$ ls -l
total 0
-rw-r--r-- 1 root root 0 map 29 10:13 A_Karpov.txt
karpov@SRV1:~$
```

Рис. 8