

# Add users to EC2 instances with SSH Access – Ansible

Without ansible- we need to create AMI User role for each person and run through many commands to add each user which is a difficult task and prone to errors.

Ansible helps us to handle this situation with a Single ansible playbook.

Inventory file -

The Ansible inventory file defines the hosts and groups of hosts upon which commands, modules, and tasks in a playbook operate.

.hostgroup named `hosts_to_add_key` and we have defined our host-specific properties.

The reason we are defining the `ansible_user` is to be able to use different types of EC2 instances with different user IDs. Because in real-time, we might have different distributions of Linux servers running in our infra like ubuntu, centos, ec2-user etc.

The `ansible_port` is to define the SSH port number to be used while connecting to the remote server.

Playbook -

**The first task** is to create a group for the users. You can define N number of groups as per your requirement and the groups can be used on the further tasks

**The second task** is to create a user and map to a group created in the previous step. we are defining multiple users with help of `with_items` you can define N number of users as per your requirement. We need to create a keypair for each user, we use this keypair to make the user login.

```
Ssh-keygen -t rsa
```

```

harshitha@DESKTOP-D1349KB: ~$ ssh
Enter file in which to save the key (/home/harshitha/.ssh/id_rsa): /home/harshitha/Team8_devops
/home/harshitha/Team8_devops already exists.
Overwrite (y/n)? ^C
harshitha@DESKTOP-D1349KB:~$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/harshitha/.ssh/id_rsa): /home/harshitha/.ssh/harshitha_rsa
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/harshitha/.ssh/harshitha_rsa
Your public key has been saved in /home/harshitha/.ssh/harshitha_rsa.pub
The key fingerprint is:
SHA256:YhuCINcYNL9P3/kZzi7xAQa04Vdn0rInMorLbNyxJuM harshitha@DESKTOP-D1349KB
The key's randomart image is:
+--[RSA 3072]-----+
|.
|. . . o
|. o.o+oo =
|. +o o.*
|. .+.S+
|. o *+=
|. ..o+@.
|. o* Bo+
|. oE= ==.
+-----[SHA256]-----+
harshitha@DESKTOP-D1349KB:~$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/harshitha/.ssh/id_rsa): /home/harshitha/.ssh/akshaya_rsa
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/harshitha/.ssh/akshaya_rsa
Your public key has been saved in /home/harshitha/.ssh/akshaya_rsa.pub
The key fingerprint is:
SHA256:FK6cCd6h3isM2YDfMwrJ2huuL5eyvmAL7/ip6GvNc harshitha@DESKTOP-D1349KB
The key's randomart image is:
+--[RSA 3072]-----+
|.
|. . S .
|. o . o o
|. +o= +o..
|. ++*^..E +oo.
|. =X8B*+..+o
+-----[SHA256]-----+
harshitha@DESKTOP-D1349KB:~$ cd ~/.ssh
harshitha@DESKTOP-D1349KB:~/.ssh$ ls
akshaya_rsa akshaya_rsa.pub harshitha_rsa harshitha_rsa.pub id_rsa id_rsa.pub known_hosts
harshitha@DESKTOP-D1349KB:~/.ssh$

```

**The Third task** is to copy the user's SSH key to their newly created user IDs on the EC2 instance for them to be able to log in.

```
Ansible playbook add-key.yml -i ansible_hosts --key-file=keypair.pem
```

```
harshitha@DESKTOP-D1349KB: ~/Team8_devops
ok: [18.216.105.64] => (item={'name': 'akshaya', 'key': '~/.ssh/akshaya_rsa.pub', 'userstate': 'present'})
changed: [18.217.6.207] => (item={'name': 'akshaya', 'key': '~/.ssh/akshaya_rsa.pub', 'userstate': 'present'})

PLAY RECAP *****
18.216.105.64      : ok=4    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
18.217.6.207      : ok=4    changed=3    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

harshitha@DESKTOP-D1349KB:~/Team8_devops$ ansible-playbook add-key-private.yml -i ansible_hosts_private --key-file=keypair.pem
[WARNING]: * Failed to parse /home/harshitha/Team8_devops/ansible_hosts_private with yaml plugin: Syntax Error while loading YAML.  did not find expected <document start> The error appears to be in
/home/harshitha/Team8_devops/ansible_hosts_private: line 2, column 1, but may be elsewhere in the file depending on the exact syntax problem.  The offending line appears to be:  [hosts_to_add_key_private]
18.217.6.207 ansible_user=ec2-user ansible_port=22 ^ here
[WARNING]: * Failed to parse /home/harshitha/Team8_devops/ansible_hosts_private with ini plugin: /home/harshitha/Team8_devops/ansible_hosts_private:6: Section [hosts_to_add_key:vars] not valid for undefined
group: hosts_to_add_key
[WARNING]: Unable to parse /home/harshitha/Team8_devops/ansible_hosts_private as an inventory source
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Playbook to Create User and Add Key to EC2 Instance] *****

TASK [Gathering Facts] *****
[WARNING]: Platform linux on host 18.216.105.64 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ok: [18.216.105.64]
[WARNING]: Platform linux on host 18.217.6.207 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ok: [18.217.6.207]

TASK [Create Groups] *****
ok: [18.216.105.64] => (item=adminteam)
ok: [18.217.6.207] => (item=adminteam)
ok: [18.216.105.64] => (item=devopsteam)
ok: [18.217.6.207] => (item=devopsteam)

TASK [Create a user] *****
ok: [18.216.105.64] => (item={'name': 'harshitha', 'group': 'adminteam'})
ok: [18.217.6.207] => (item={'name': 'harshitha', 'group': 'adminteam'})
ok: [18.216.105.64] => (item={'name': 'akshaya', 'group': 'devopsteam'})
ok: [18.217.6.207] => (item={'name': 'akshaya', 'group': 'devopsteam'})

TASK [Copy the authorized key file from] *****
ok: [18.216.105.64] => (item={'name': 'harshitha', 'key': '~/.ssh/harshitha_rsa.pub', 'userstate': 'present'})
ok: [18.217.6.207] => (item={'name': 'harshitha', 'key': '~/.ssh/harshitha_rsa.pub', 'userstate': 'present'})
ok: [18.216.105.64] => (item={'name': 'akshaya', 'key': '~/.ssh/akshaya_rsa.pub', 'userstate': 'present'})
ok: [18.217.6.207] => (item={'name': 'akshaya', 'key': '~/.ssh/akshaya_rsa.pub', 'userstate': 'present'})

PLAY RECAP *****
18.216.105.64      : ok=4    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
18.217.6.207      : ok=4    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

harshitha@DESKTOP-D1349KB:~/Team8_devops$
```

the playbook has been executed successfully and the user can log in/SSH now with his private key.I am executing SSH connection and using my(akshaya\_rsa) private key file to login without password.

```
Ssh -i ~/.ssh/akshaya_rsa akshaya@18.345.23 "id akshaya"
```

```
harshitha@DESKTOP-D1349KB: ~/Team8_devops
18.216.105.64 : ok=4 changed=0 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
18.217.6.207 : ok=4 changed=0 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

harshitha@DESKTOP-D1349KB:~/Team8_devops$ ssh -i ~/.ssh/harshitha_rsa harshitha@18.217.6.207 "id harshitha"
uid=1001(harshitha) gid=1001(adminteam) groups=1001(adminteam)
harshitha@DESKTOP-D1349KB:~/Team8_devops$ ansible-playbook add-key-private.yml --key-file=keypair.pem -e "random=~/.ssh/akshaya_rsa"
[WARNING]: * Failed to parse /home/harshitha/Team8_devops/ansible_hosts_private with yaml plugin: Syntax Error while loading YAML. did not find expected <document start> The error appears to be in
/home/harshitha/Team8_devops/ansible_hosts_private: line 2, column 1, but may be elsewhere in the file depending on the exact syntax problem. The offending line appears to be:
18.217.6.207 ansible-user=ec2-user ansible-port=22 * here
[WARNING]: * Failed to parse /home/harshitha/Team8_devops/ansible_hosts_private with ini plugin: /home/harshitha/Team8_devops/ansible_hosts_private:6: Section [hosts_to_add_key:vars] not valid for undefined
group: hosts_to_add_key
[WARNING]: Unable to parse /home/harshitha/Team8_devops/ansible_hosts_private as an inventory source
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Playbook to Create User and Add Key to EC2 Instance] *****

TASK [Gathering Facts] *****
[WARNING]: Platform linux on host 18.216.105.64 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ok: [18.216.105.64]
[WARNING]: Platform linux on host 18.217.6.207 is using the discovered Python interpreter at /usr/bin/python, but future installation of another Python interpreter could change this. See
https://docs.ansible.com/ansible/2.9/reference_appendices/interpreter_discovery.html for more information.
ok: [18.217.6.207]

TASK [Create Groups] *****
ok: [18.216.105.64] => (item=adminteam)
ok: [18.217.6.207] => (item=adminteam)
ok: [18.216.105.64] => (item=devopsteam)
ok: [18.217.6.207] => (item=devopsteam)

TASK [Create a user] *****
ok: [18.216.105.64] => (item={'name': 'harshitha', 'group': 'adminteam'})
ok: [18.217.6.207] => (item={'name': 'harshitha', 'group': 'adminteam'})
ok: [18.216.105.64] => (item={'name': 'akshaya', 'group': 'devopsteam'})
ok: [18.217.6.207] => (item={'name': 'akshaya', 'group': 'devopsteam'})

TASK [Copy the authorized key file from] *****
ok: [18.216.105.64] => (item={'name': 'harshitha', 'key': '~/.ssh/harshitha_rsa.pub', 'userstate': 'present'})
ok: [18.217.6.207] => (item={'name': 'harshitha', 'key': '~/.ssh/harshitha_rsa.pub', 'userstate': 'present'})
ok: [18.216.105.64] => (item={'name': 'akshaya', 'key': '~/.ssh/akshaya_rsa.pub', 'userstate': 'present'})
ok: [18.217.6.207] => (item={'name': 'akshaya', 'key': '~/.ssh/akshaya_rsa.pub', 'userstate': 'present'})

PLAY RECAP *****
18.216.105.64 : ok=4 changed=0 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
18.217.6.207 : ok=4 changed=0 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

harshitha@DESKTOP-D1349KB:~/Team8_devops$ ssh -i ~/.ssh/akshaya_rsa akshaya@18.217.6.207 "id akshaya"
uid=1002(akshaya) gid=1002(devopsteam) groups=1002(devopsteam)
harshitha@DESKTOP-D1349KB:~/Team8_devops$
```

A new user has been created and mapped to group aswell

```
Ssh -i ~/.ssh/akshaya_rsa akshaya@18.234.23
```

Windows taskbar showing icons for Start, Search, Task View, File Explorer, Google Chrome, and other applications. System tray shows weather (25°C Mostly cloudy), time (04:32 PM), and date (28-09-2021).