# Guided Practice: Configure Ansible to Access Multiple Machines

## Outcome

In this Guided Practice, you will configure Ansible to access multiple machines including a Windows 2019 server.

## Resources Needed

- VCASTLE Pod configured for the class. For this Guided Practice we will use the CentOS 8, Windows Server 2019, and Ubuntu 20.04 LTS machines.
- Your Linux users need to be able to elevate their privileges with sudo, and you will need admin privileges on the Windows machine.

## Level of Difficulty

High

## Deliverables

Deliverables are marked in red font or with a red picture border around the screenshot. Additionally, there are questions at the end. **Your username or studentID must be visible in all screenshots that you submit.**

## General Considerations

You should be familiar with configuring Linux, the command line, PowerShell, and networking. Ansible and ssh should already be configured on your Ubuntu computer from a prior Guided Practice.

## Configure the Ansible Hosts File to Include Multiple Machines Using IP Addresses and Groups

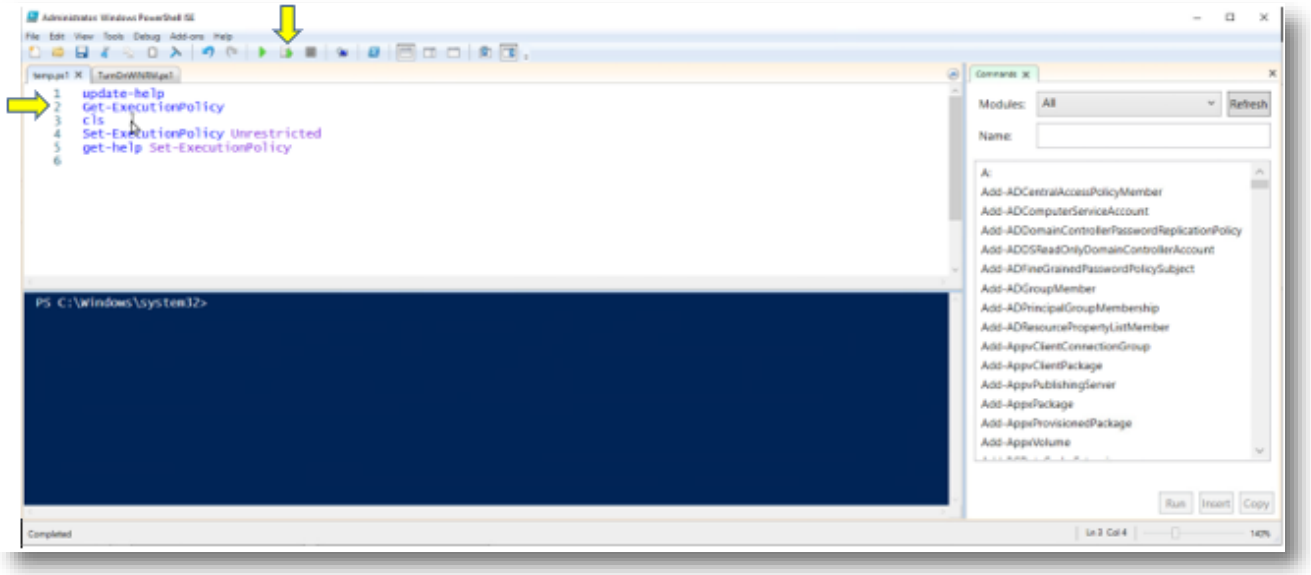
1. Log into the Windows 2019 server as cis321, open PowerShell ISE (PS) with admin privileges, and type:

```
Get-ExecutionPolicy
```

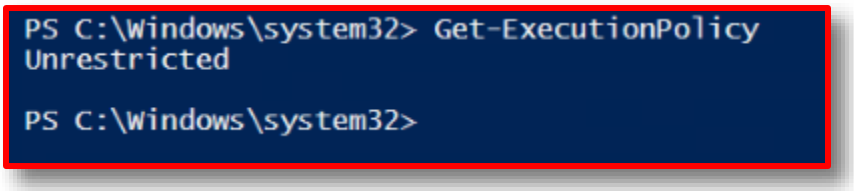
If it the execution Policy is not Unrestricted, then enter:

```
Set-ExecutionPolicy Unrestricted
```

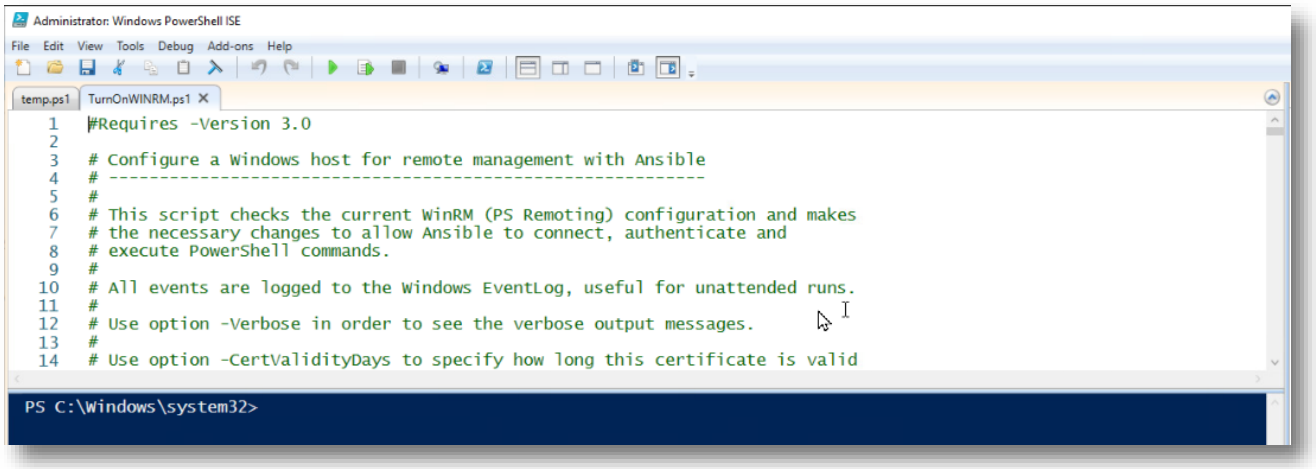
**Note**: Using the ISE editor you can execute the line the cursor is on by pressing F8. In the example below, the cursor is on line 3. Pressing **F8** (run selection ) will clear the PS lower (blue) window. You should respond "Yes To All" when changing execution policy.



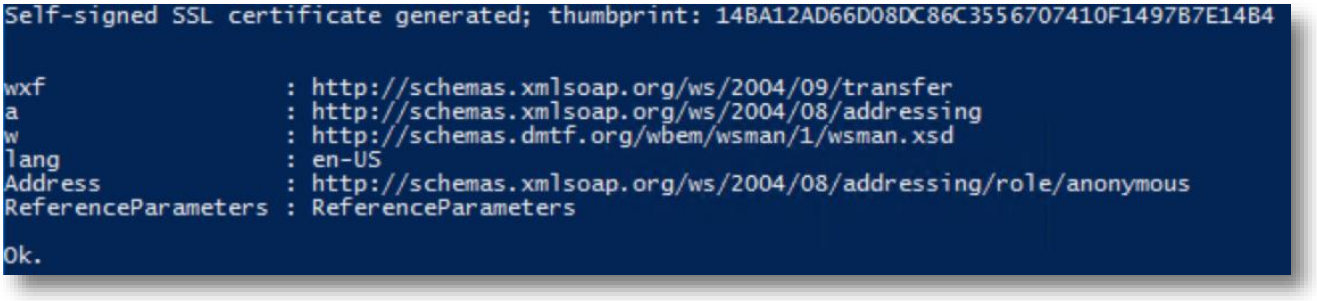

**Paste the results of a screenshot, similar to the one below, showing your execution policy.**




2. Open PowerShell ISE as administrator, and copy and paste the entire PowerShell script found on the Windows Desktop into PowerShell, and save the file. You may also convert the .txt extension to a .ps1 extension to run it directly.




3. Run the script by pressing F5 or the **Run Script** Icon  . Your output should resemble the screenshot below. (NOTE: If remote management is already enabled, the script will run, but not result in any changes or output. If remote management is not already enabled, you will see a screen shot like the one below.)



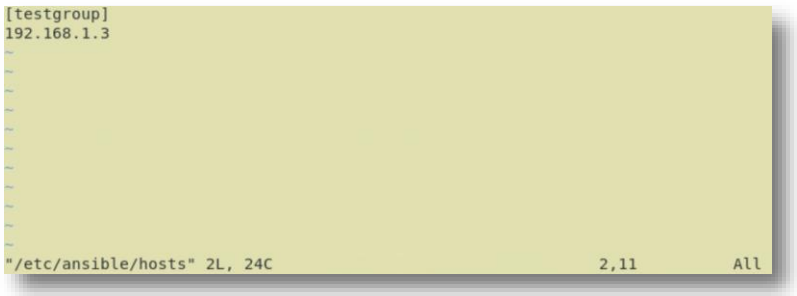

4. Log in to the CentOS computer, and install pywinrm. Type the following on the command line.

```
sudo pip3 install pywinrm
```

5. Open the /etc/ansible/hosts file in your favorite editor. If you are using vim, be mindful of the auto tab feature. Type the following, and press <ENTER>.

```
sudo vim /etc/ansible/hosts
```

You should see something similar to the screenshot below.




6. Edit the hosts file by typing/performing the following actions:

- Replace the word “testgroup” with “web”.
- With your cursor at the end of line 2, press <ENTER> twice (make sure you are in the insert mode if you are using vim). Then, enter the following text:

```
[win]
192.168.1.2

[win:vars]
ansible_user=cis321
ansible_password=Password1
ansible_connection=winrm
ansible_winrm_server_cert_validation=ignore
```

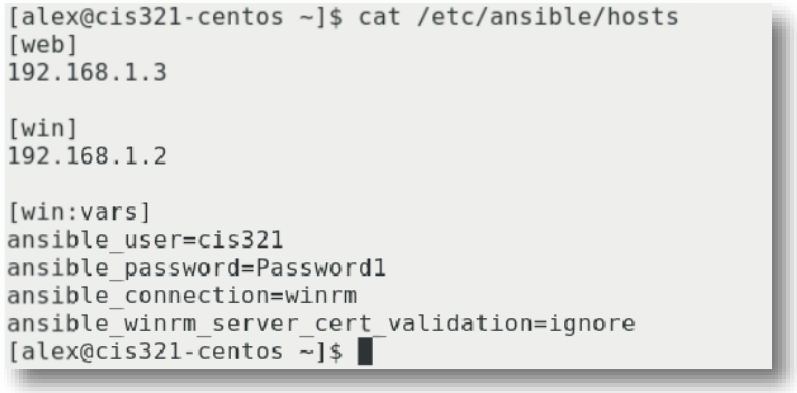
Press <ESC> and enter:

```
:wq
```

In your terminal, enter the following:

```
cat /etc/ansible/hosts
```

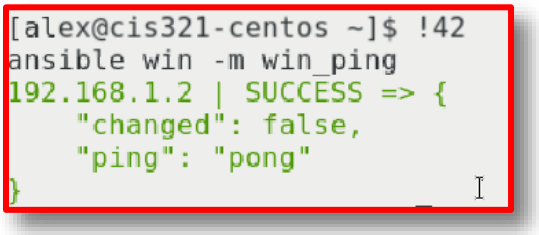
Your screen should look like the image shown below.




7. Enter the following (**Note**: You may choose to review the history file on your machine and use the shortcut !42 (the number may differ depending on your history file) instead of typing out the entire command):

```
ansible win -m win_ping
```

**Paste the results of a screenshot, similar to the image below, showing a successful connection to the Windows server using Ansible.**



## Guided Practice Questions

In your **Guided Practice Lab Report**, answer the following questions about this learning activity. Some may require research.

1. What is executed on the command line using the command **!42**?
2. What must be set on the destination machines if you put their IP addresses in /etc/ansible/hosts file?
3. Why is it necessary to install pywinrm?
4. What is WinRM, and why does it need to be configured to enable an Ansible connection?

## References

Henderson, B. (2019). *Connecting to a Windows host*. https://www.ansible.com/blog/connecting-to-a-windows-host

Redhat. (2020). *Drive automation across open hybrid cloud deployments*. https://www.ansible.com/