What is Ansible for?

- Ansible serves as a configuration management tool
- It is utilized to oversee configurations on pre-deployed infrastructure
- In other words, it ensures that the current state of the managed asset aligns with the desired state defined by Ansible
- Comparable solutions include:
  - Puppet
  - Chef
  - SaltStack
- Ansible is distinct due to its design focus on ease of use

- Ansible is a DevOps tool
- It manages configuration as code
- To do so, YAML playbooks are typically used
- To guarantee consistency, the playbooks are often provided through Git

Ansible Control Node

- The control node is the system where Ansible is installed
- Ansible can be set up through various methods:
  - Using distribution repositories to ensure the installation of the latest stable version
  - Utilizing the Python pip3 installer to obtain the newest version available
- It is important to note that the newest version may not always be stable, making installation from repositories the recommended approach

For Rocky Linux:

- Ansible in Rocky placed in extra packages for enterprise linux, so initially...
  sudo dnf install epel-release
- **sudo dnf install -y ansible**
- **ansible --version**

For Fedora

- Installing pip...
- **sudo dnf provides */pip**
- **sudo dnf install python3-pip**
- **sudo pip install ansible**
- **ansible --version**

For Ubuntu

- **sudo add-apt-repository --yes --update ppa:ansible/ansible**
- **sudo apt install python3-pip**
- **sudo apt install ansible --yes**
- Optional, we can install ansible-lint
  python3 -m pip install ansible-lint
- **ansible --version**

Windows managed node

- 1. Create a self-signed certificate:
  - Open a Powershell window with administrative privileges on the Windows machine
  - Run the following command to create the certificate
  - **New-SelfSignedCertificate -CertstoreLocation Cert:\LocalMachine\My -DnsName "WinRMCertificate"**
- 2. Enable WinRM
  - **Enable-PSRemoting -SkipNetworkProfileCheck -Force**
- 3. Configure WinRM listener to use SSL and port 5986
  - **($cert = get-childitem Cert:\LocalMachine\My\) -and (New-Item -Path WSMan:\LocalHost\Listener -Transport HTTPS -Address * -CertificateThumbPrint $cert.Thumbprint -Force)**
- 4. Create Windows Firewall Rule
  - **New-NetFirewallRule -DisplayName "Windows Remote Management (HTTPS-In)" -Name "Windows Remote Management (HTTPS-In)" -Profile Any -LocalPort 5986 -Protocol TCP**

Testing WinRM Connection

- 1. Connect to the Ansible control node. I use Visual Studio Code, but any text editor will work
- 2. Create a file named hosts.ini
- 3. Paste the following into the file. Be sure to update the IP address and the server name (my Windows machine is named SRV4)

```
[windowsservers]
SRV4 ansible_host=10.0.0.158

[windowsservers:vars]
ansible_connection=winrm
ansible_winrm_server_cert_validation=ignore
ansible_port=5986
ansible_winrm_transport=ntlm
ansible_winrm_operation_timeout_sec=60
ansible_winrm_read_timeout_sec=300
```

- Run the following ad-hoc ansible command. Replace SRV4 with the specific server name that you added to the hosts.ini file. Replace "Administrator" with your admin user name and provide the password once prompted.
  ansible -i hosts.ini -m win_ping SRV4 -u Administrator --ask-pass
- If the connection is successful, you'll see a message similar to the one below

```
SSH password:
SRV4 | SUCCESS => {
"changed": false,
"ping": "pong"
}
```

https://www.automatesql.com/blog/getting-started-with-ansible-setting-up-a-windows-managed-node
https://docs.ansible.com/ansible/latest/os_guide/windows_setup.html

Windows managed node

- To solve problem wich certificate...
- However, in a secured environment, this command may not function if you have already set requirements such as authentication, firewall rules, and network profiles. The Ansible project offers a script that generates SSL certificates, sets up firewall rules, and enables secure authentication. Always review online scripts before executing them.
- **Set-ExecutionPolicy Bypass -Scope LocalMachine -Force**
  [Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
  $url = "https://raw.githubusercontent.com/ansible/ansible-documentation/devel/examples/scripts/ConfigureRemotingForAnsible.ps1"
  $file = "$env:temp\ConfigureRemotingForAnsible.ps1"
  (New-Object -TypeName System.Net.WebClient).DownloadFile($url, $file)
  Invoke-Expression "$file -SkipNetworkProfileCheck"

https://4sysops.com/archives/enable-windows-remote-management-winrm-for-ansible/