Documentação de Implementação da Infraestrutura de Rede com **Ansible**

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1. Objetivo

Automatizar a configuração dos **domínios Luanda e Cabinda**, incluindo Active Directory (AD DS), DHCP, DNS e IIS, utilizando **Ansible** a partir de um host de administração (Ubuntu 24.04 LTS).

2. Arquitetura do Ambiente

Host de Administração

- **SO:** Ubuntu 24.04 LTS
- **Ferramentas:**
    - Ansible
    - Python3 + pywinrm

Máquinas Virtuais no VMware Workstation Pro 17

- **Domínio Luanda**
    - luaw19vm1 – Windows Server 2019 (AD DS + DNS + DHCP)
    - luaw16vm2 – Windows Server 2016
    - luaw10cli – Windows 10 (Cliente)
- **Domínio Cabinda**
    - cabw19vm1 – Windows Server 2019 (AD DS + DNS + DHCP)
    - cabw16vm2 – Windows Server 2016
    - cabcliente1 – Windows 10 (Cliente)

3. Pré-requisitos

3.1. Configuração no Ubuntu

```
sudo apt update
sudo apt install ansible python3-pip -y
pip install pywinrm
```

3.2. Configuração nos Windows (executar em cada VM)

Abrir **PowerShell (Admin)** e rodar:

```
winrm quickconfig -q
winrm set winrm/config/service/auth @{Basic="true"}
winrm set winrm/config/service @{AllowUnencrypted="true"}
Set-Item WSMan:\localhost\Service\AllowUnencrypted -Value true
Set-Item WSMan:\localhost\Service\Auth\Basic -Value true
```

4. Inventário Ansible

inventory.yml

```
all:
  vars:
    ansible_user: Administrator
    ansible_password: "P@ssw0rd!"
    ansible_connection: winrm
    ansible_winrm_transport: basic

  children:
    luanda:
      hosts:
        luaw19vm1:
          ansible_host: 144.188.510
        luaw16vm2:
          ansible_host: 144.188.5.11
        luacliente1:
          ansible_host: 144.188.5.X

    cabinda:
      hosts:
        cabw19vm1:
          ansible_host: 144.188.5.20
        cabw16vm2:
          ansible_host: 144.188.5.21
```

```
        cabcliente1:
          ansible_host: 144.188.5.X
```

5. Estrutura dos Playbooks

site-luanda.yml

```
- name: Configurar domínio Luanda
  hosts: luanda
  tasks:
    - name: Instalar AD DS no Server 2019
      win_feature:
        name: AD-Domain-Services
        state: present
      when: inventory_hostname == "luaw19vm1"

    - name: Instalar DNS no Server 2019
      win_feature:
        name: DNS
        state: present
      when: inventory_hostname == "luaw19vm1"

    - name: Instalar DHCP no Server 2016
      win_feature:
        name: DHCP
        state: present
      when: inventory_hostname == "luaw16vm2"

    - name: Instalar IIS no Server 2016
      win_feature:
        name: Web-Server
        state: present
      when: inventory_hostname == "luaw16vm2"
```

site-cabinda.yml

```
- name: Configurar domínio Cabinda
  hosts: cabinda
  tasks:
    - name: Instalar AD DS no Server 2019
      win_feature:
        name: AD-Domain-Services
        state: present
      when: inventory_hostname == "cabw19vm1"

    - name: Instalar DNS no Server 2019
      win_feature:
        name: DNS
        state: present
      when: inventory_hostname == "cabw19vm1"

    - name: Instalar DHCP no Server 2016
      win_feature:
        name: DHCP
        state: present
      when: inventory_hostname == "cabw16vm2"

    - name: Instalar IIS no Server 2016
      win_feature:
        name: Web-Server
        state: present
      when: inventory_hostname == "cabw16vm2"
```

6. Fluxo de Execução

6.1. Testar conectividade

```
ansible -i inventory.yml all -m win_ping
```

6.2. Executar o domínio Luanda

```
ansible-playbook -i inventory.yml site-luanda.yml
```

6.3. Executar o domínio Cabinda

```
ansible-playbook -i inventory.yml site-cabinda.yml
```

7. Validação

7.1. Nos servidores

- Verificar instalação de **AD DS**, **DNS**, **DHCP**, **IIS**:

```
Get-WindowsFeature | ? Installed
```

7.2. Nos clientes

Confirmar que o **domínio está disponível** e os clientes conseguem ingressar:

```
Add-Computer -DomainName luanda.com -Restart
```