Network Device Backup Automation using Ansible and Azure DevOps



## **Overview**

This document outlines the steps and configurations required to automate the backup of network devices using Ansible, with the backups stored on an SFTP server. The process is managed through an Azure DevOps CI/CD pipeline.

## **Prerequisites**

1. **Azure DevOps Account:** Ensure you have access to Azure DevOps with the necessary permissions.
2. **Service Account:** Login credentials for the service account svc\_IAC.
3. **Azure Key Vault:** Secrets for passwords and sensitive data.
4. **Network Automation Repository:** Contains Ansible playbooks, inventory, and variable files.
5. **SFTP Server:** Destination server for storing backups.

## **Repository Structure**

* **Network Automation Repository**
  + **backup\_pipeline/**
    - playbook.yml
    - inventory.yml
    - variables1.txt
    - variables2.txt
    - variables3.txt

## **Steps to Review or Modify the Backup Pipeline**

### **1. Login to Azure DevOps Portal**

* Open your web browser and go to the [Azure DevOps Portal](https://dev.azure.com/).
* Login using the service account credentials for svc\_IAC.

### **2. Navigate to the Network Automation Repository**

* Go to the **Repos** section.
* Select the **Network Automation** repository.
* Navigate to the backup\_pipeline directory to review or modify playbook.yml, inventory.yml, or the variable files (variables1.txt, variables2.txt, variables3.txt).

### **3. Access the Pipelines Section**

* Click on the **Pipelines** tab on the left-hand side.
* Select **Releases** from the submenu.

### **4. Locate the Backup Pipeline Release**

* Search for the release pipeline related to the backup process.
* Click on the desired backup pipeline to view details.

### **5. Review Pipeline Execution and Schedule**

* Within the pipeline, check the defined stages for execution.
* Ensure the pipeline is scheduled for automatic backup at the required intervals.

## **Backup Pipeline Configuration Details**

### **playbook.yml**

This Ansible playbook contains the tasks to back up the network devices and save the configurations to the SFTP server.

### **inventory.yml**

This file includes the inventory of network devices to be backed up.

### **Variable Files (variables1.txt, variables2.txt, variables3.txt)**

These files contain variables such as device credentials, SFTP server details, and other necessary parameters.

### **Secrets Management**

Sensitive information like passwords are stored in Azure Key Vault and referenced within the pipeline using Azure DevOps service connections.

## **Automating the Pipeline Execution**

* Ensure the pipeline is set to trigger automatically based on your defined schedule.
* Verify the triggers under the **Schedule** section within the pipeline configuration.

## **Additional Considerations**

* **Error Handling:** Implement error handling within the playbook to capture and log any issues during the backup process.
* **Notifications:** Configure notifications to alert the team in case of backup failures.
* **Testing:** Regularly test the pipeline to ensure backups are taken as expected and stored securely.
* **Compliance:** Ensure the backup process complies with your organization’s policies and standards.

## **Conclusion**

Following this guide will help in managing the backup automation process for network devices using Ansible and Azure DevOps. Ensure to periodically review and update the pipeline configurations to adapt to any changes in the network infrastructure or backup requirements.

