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DEVNET Workshop:

Using Ansible to Automate Application
(NSO) Deployment, and Environment
Configuration

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and
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devwrk-1703

Cisco *live!*
June 9-13, 2019 • San Diego, CA

#CLUS



Introduction



Arun Sakthivel is a Software Solutions Architect in the Customer Experience organization with in Cisco. Arun has 14 years hands on expertise in software development and architecture.



Weigang Huang, CCIE #49667, is a Software Architect in the Customer Experience organization with in Cisco. A 19-year Cisco veteran with core software developer/architect/automation solution expertise.

Agenda

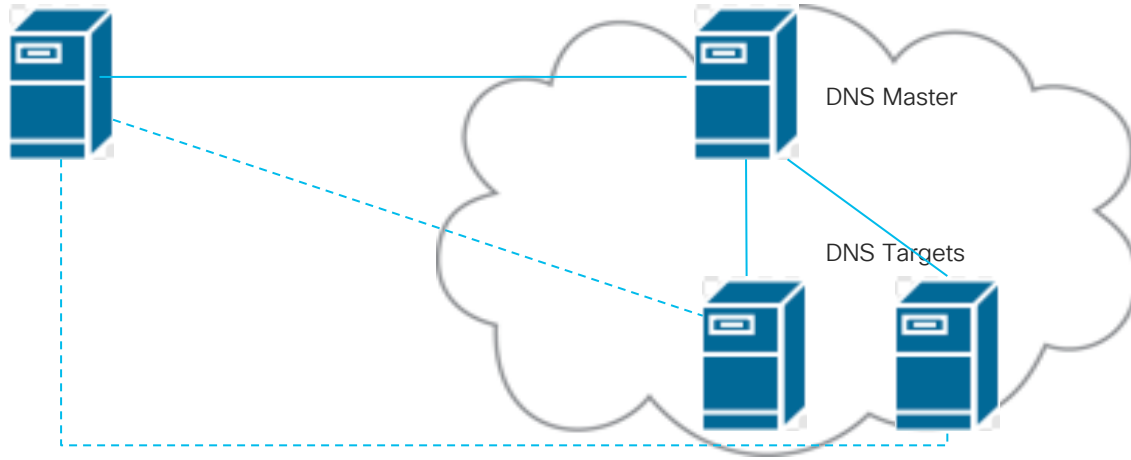
- Why Ansible?
- Use Case Overview
- Playbook Creation
 - Create Ansible playbooks skeleton using ansible-galaxy
 - Create main play book
 - Create sub-play books for sub-tasks
 - Test and verify

Why Ansible?

- **No Agent** As long as the box can be ssh'd into and it has python, it can be configured with Ansible
- **Idempotent.** Only do things if they are needed and that things are repeatable without side effects.
- **Declarative Not Procedural.** Ansible works by a description of the state of the machine.
- **Tiny Learning Curve.**

Use Case

N: NSO



Use Case Requirements

- Cisco NSO manages DNS servers, invoke an action to synchronize selected DNS directories from a master to a set of targets
- To meet security compliance, the communication between NSO to DNS servers is limited to no-login, non-interactive, key based ssh.
- To meet security compliance, the transport among DNS servers is limited to non-interactive, no-login, key based.
- Users:
 - dvnso: owns and runs NSO
 - cl00254: NSO device south bound user. NSO ned communicates DNS servers
 - cl94644: peer user runs synchronization operation

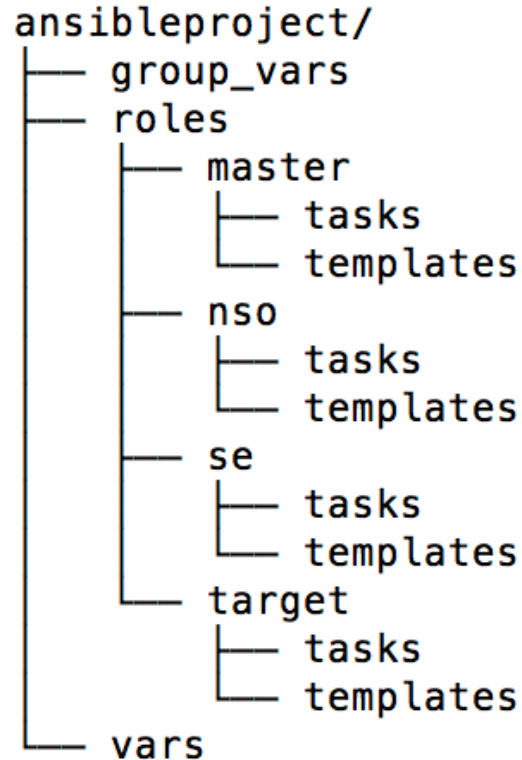
Deployment and Configuration Requirements

- Application Deployment
 - Install Cisco NSO and service packages.
 - Install sync dns package to DNS masters
- Deployment Configurations
 - Scan host keys of DNS masters, make them available to NSO host
 - Set necessary RSA public key exchange to allow key based ssh
 - NSO host to DNS for NSO southbound user, cl00254
 - DNS master to targets for peer user: cl94644
- Set sudoers
 - Allow cl00254 to invoke sync script on DNS master as peer user
 - Allow cl94644 to a set of predefined operation on DNS targets

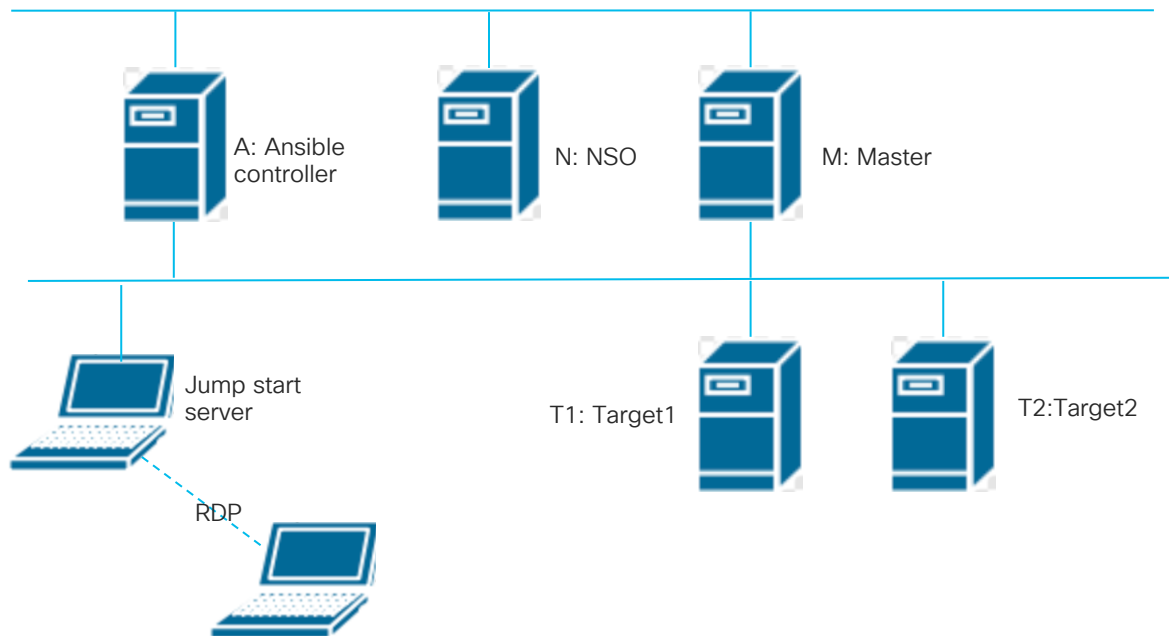
Deployment and Configuration Requirements (continue)

- Post Deployment Activities
 - Start NSO application
 - Add network devices to NSO
 - Post check

Ansible Playbook Design



Hands-On: Lab Setup



Hands-on: Lab Details

Guide: <https://github.com/weiganghuang/devwrk-1703/blob/master/devwrk-1703.md>

- Access: check your tile

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Hands on Lab – 35 minutes

The Summarizer

- Automation helps by increasing reliability and consistency.
- Provisioning NSO and its service package in a complex environment setup can be simplified with help of automation.
- This use case can be extended for other NSO service package deployments.
- Deliver high-quality services faster and more easily through network automation

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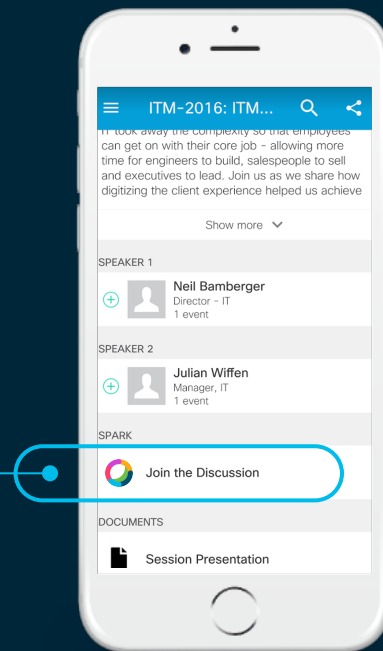
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