



Module Checklist

Configuration Management with Ansible

By Techworld with Nana

Video Overview



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Video Overview

Main Demo Project	
Git Project	https://gitlab.com/nanuchi/ansible-learn

Other Repos used in this module	
Terraform Project	https://gitlab.com/nanuchi/terraform-learn/-/tree/feature/ansible
Java Maven Project	https://gitlab.com/nanuchi/java-maven-app/-/tree/feature/ansible
Nodejs Project	https://gitlab.com/devops-bootcamp3/simple-nodejs
Java Mysql Project	https://gitlab.com/devops-bootcamp3/bootcamp-java-mysql/-/tree/ansible

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Introduction to Ansible

- ☐ Watched video

Install Ansible

- ☐ Watched video
- ☐ Demo executed - Install Ansible

Useful Links:

- Installation Guide:
https://docs.ansible.com/ansible/latest/installation_guide/intro_installation.html

Setup Managed Servers

- ☐ Watched video
- ☐ Demo executed - Create Droplets on DigitalOcean

Ansible Inventory

- ☐ Watched video
- ☐ Demo executed
 - ☐ Hosts file created
 - ☐ Pinged servers with Ansible command

Add EC2 Instances to Inventory

- ☐ Watched video
- ☐ Demo executed

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Managing Host Key Checking

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Added to known_hosts and authorized_keys
 - ☐ Disabled Host Key Checking



Introduction to Ansible Playbook

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Written simple Playbook
 - ☐ Executed Playbook

Modules used:

- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/apt_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/service_module.html
- Automatically executed by Ansible:
https://docs.ansible.com/ansible/latest/collections/ansible/builtin/gather_facts_module.html

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Ansible Modules Overview

☐ Watched video

Useful Links:

- Modules Index for Ansible Version 2.9
https://docs.ansible.com/ansible/2.9/modules/modules_by_category.html

Ansible Collections

☐ Watched video

Useful Links:

- Collection Index:
https://docs.ansible.com/ansible/latest/user_guide/collections_using.html
- Ansible Collections - Version 2.10 Changes:
<https://github.com/ansible-collections/overview>
- Ansible Galaxy: <https://galaxy.ansible.com/>
- Developing own Collections:
https://docs.ansible.com/ansible/latest/dev_guide/developing_collections.html



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Project: Automate Node App Deployment - Part 1

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Created DigitalOcean Droplet
 - ☐ Adjusted hosts file
 - ☐ Written Play "Install node and npm"
 - ☐ Written Play "Deploy nodejs app"



Useful Links:

- Node Project: <https://gitlab.com/devops-bootcamp3/simple-nodejs>

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/copy_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/unarchive_module.html

Project: Automate Node App Deployment - Part 2

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Written Play "Deploy nodejs app"

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/community/general/npm_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/command_module.html
- https://docs.ansible.com/ansible/latest/user_guide/playbooks_async.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/debug_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/shell_module.html

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Project: Automate Node App Deployment - Part 3

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Written Play “Create new linux user for node app”
 - ☐ Adjusted Play “Deploy nodejs app”

Useful Links:

- Privilege Escalation with become
https://docs.ansible.com/ansible/latest/user_guide/become.html

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/user_module.html

Variables in Ansible

- ☐ Watched video
- ☐ **Demo executed**

Useful links:

- https://docs.ansible.com/ansible/latest/user_guide/playbooks_variables.html



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Project: Automate Nexus Deployment - Part 1

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Created DigitalOcean Droplet
 - ☐ Adjusted hosts file
 - ☐ Written Play "Install java and net-tools"
 - ☐ Written Play "Download and unpack Nexus installer"



Useful Links:

- Conditionals in Ansible:
https://docs.ansible.com/ansible/latest/user_guide/playbooks_conditionals.html

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/get_url_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/find_module.html
- https://docs.ansible.com/ansible/2.10/collections/ansible/builtin/stat_module.html

Project: Automate Nexus Deployment - Part 2

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Written Play "Create nexus user to own nexus folders"
 - ☐ Written Play "Start nexus with nexus user"
 - ☐ Written Play "Verify nexus running"

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/group_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/file_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/blockinfile_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/lineinfile_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/pause_module.html

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Configure Git & Default Inventory Location

- ☐ Watched video
- ☐ Demo executed



Project: Ansible & Docker - Part 1

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Created EC2 Instance with Terraform
 - ☐ Adjusted hosts inventory file
 - ☐ Written Play "Install python3 and docker"
 - ☐ Written Play "Install docker-compose"
 - ☐ Written Play "Start docker daemon"
 - ☐ Written Play "Add ec2-user to docker group"
 - ☐ Refactored the Playbook

Useful Links:

- Git Repo from Terraform Module: <https://gitlab.com/nanuchi/terraform-learn/-/tree/feature/deploy-to-ec2>
- Install docker-compose: <https://gitlab.com/nanuchi/java-maven-app/-/blob/feature/sshagent-terraform/terraform/entry-script.sh>
- Jinja2 Templating Language: <https://palletsprojects.com/p/jinja/>

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/yum_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/pipe_lookup.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/systemd_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/meta_module.html

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Project: Ansible & Docker - Part 2

- ☐ Watched video
- ☐ Demo executed
 - ☐ Adjusted 1st Play to “install docker python module”
 - ☐ Written Play “Test docker pull”
 - ☐ Written Play “Start docker containers”
 - ☐ Executed Playbook on new server
 - ☐ Created new user and adjusted plays to make the playbook more general-purpose



Useful Links:

- You can use the *docker-compose.yaml* file from this project:
<https://gitlab.com/devops-bootcamp3/bootcamp-java-mysql/-/tree/ansible>
- Interactive Prompts:
https://docs.ansible.com/ansible/latest/user_guide/playbooks_prompts.html

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/community/docker/docker_image_module.html
- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/pip_module.html
- https://docs.ansible.com/ansible/latest/collections/community/docker/docker_login_module.html
- https://docs.ansible.com/ansible/latest/collections/community/docker/docker_compose_module.html

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Project: Ansible Integration in Terraform

- ❑ Watched video
- ❑ Demo executed
 - ❑ Adjusted Terraform configuration file to execute ansible playbook
 - ❑ Created new Ansible Playbook for Terraform integration
 - ❑ Written Play "Wait for ssh connection"
 - ❑ Used "null_resource" in Terraform configuration file



Useful Links:

- Ansible part of the Terraform project:
<https://gitlab.com/nanuchi/terraform-learn/-/tree/feature/ansible>
- TF Provisioner:
<https://www.terraform.io/docs/language/resources/provisioners/syntax.html>
- TF Null Resource:
<https://registry.terraform.io/providers/hashicorp/null/latest/docs/resources/resource>

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/ansible/builtin/wait_for_module.html

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Dynamic Inventory

- ❑ Watched video
- ❑ **Demo executed**
 - ❑ Terraform - Created EC2 Instances
 - ❑ Written plugin configuration for aws_ec2
 - ❑ Adjusted TF config for public DNS assignment
 - ❑ Adjusted Ansible playbook and ansible.cfg to use dynamic hosts from AWS
 - ❑ Added a 4th server and re-executed Ansible playbook
 - ❑ Targeted only specific servers in your AWS region (filter + keyed_groups)



Useful Links:

- Working with Dynamic Inventory:
https://docs.ansible.com/ansible/latest/user_guide/intro_dynamic_inventory.html
- Git Repo from Terraform Module:
<https://gitlab.com/nanuchi/terraform-learn/-/tree/feature/deploy-to-ec2>
- Inventory Plugins:
<https://docs.ansible.com/ansible/latest/plugins/inventory.html#inventory-plugins>
- EC2 Inventory Source:
https://docs.ansible.com/ansible/latest/collections/amazon/aws/aws_ec2_inventory.html
- Ansible-inventory command:
<https://docs.ansible.com/ansible/latest/cli/ansible-inventory.html>

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Project: Automate Kubernetes Deployment

- ❑ Watched video
- ❑ **Demo executed**
 - ❑ Terraform - Created K8s cluster
 - ❑ Written Play "Deploy app in new namespace"
 - ❑ Set kubeconfig environment variable



Useful Links:

- TF script for EKS creation: <https://gitlab.com/nanuchi/terraform-learn/-/tree/feature/eks>

New Modules used:

- https://docs.ansible.com/ansible/latest/collections/community/kubernetes/k8s_module.html

Project: Ansible Integration in Jenkins - Part 1

- ❑ Watched video
- ❑ **Demo executed - Preparation**
 - ❑ Created Droplet on DO (for Ansible Control Node)
 - ❑ Configured Droplet as Ansible Control Node (Install Ansible etc.)
 - ❑ Created 2 EC2 Instances (for Ansible Managed Nodes)

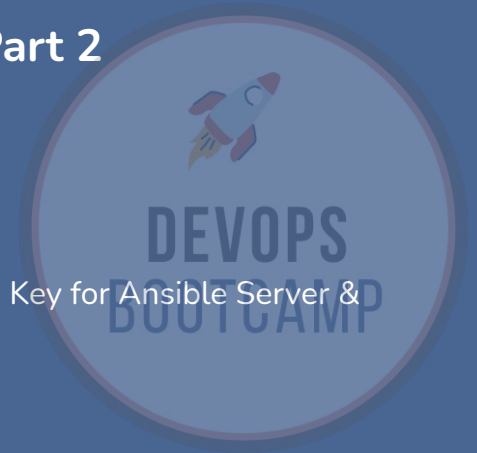
Useful Links:

- Java Maven App: <https://gitlab.com/nanuchi/java-maven-app>

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Project: Ansible Integration in Jenkins - Part 2

- ☐ Watched video
- ☐ **Demo executed - Jenkins Pipeline**
 - ☐ Installed necessary Jenkins Plugins
 - ☐ Configured Credentials for DO Droplet (Private Key for Ansible Server & EC2 Managed Servers)
 - ☐ Written Jenkinsfile
 - ☐ Created Pipeline in Jenkins



Project: Ansible Integration in Jenkins - Part 3

- ☐ Watched video
- ☐ **Demo executed - Optimizations**

Ansible Roles

- ☐ Watched video
- ☐ **Demo executed**
 - ☐ Created Roles
 - ☐ Used Roles in Playbook
 - ☐ Created EC2 servers with Terraform
 - ☐ Executed Ansible Playbook

Useful Links:

- Official Doc:
https://docs.ansible.com/ansible/latest/user_guide/playbooks_reuse_roles.html
- Variable Precedence:
https://docs.ansible.com/ansible/latest/user_guide/playbooks_variables.html#variable-precedence-where-should-i-put-a-variable

More Resources...

Best Practices

- https://docs.ansible.com/ansible/latest/user_guide/playbooks_best_practices.html
- <https://www.ansible.com/blog/ansible-best-practices-essentials>

Tips

- You can access the documentation for each module from the command line with the ansible-doc tool: `ansible-doc yum`

