

Ansible Essentials Training

Alta3 Research Authorized Training · Applied Technology Academy

Ansible is growing in popularity for good reasons. It's easy to understand, far simpler than Python, and extremely powerful. While Python can be used to do just about anything, Ansible is used to bring structure and consistency to system deployments, implementations, and changes.

LEVEL Beginner	DURATION 5 Days	EXPERIENCE 1 year: Basic Networking & DevOps	AVERAGE SALARY \$115,820	LABS Yes
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Course Overview

Students tempted to write a complex Python script to do a networking automation task will discover that problem is already solved by an Ansible module. Lots of unnecessary Python scripts can be eliminated by using Ansible whenever possible.

In this course you will get an introduction to Ansible, explore Ansible for server operations and network operations, and participate in a variety of labs.

Course Outline

- **Lesson 1 – Ansible Introduction**
 - Ansible Introduction
 - Ansible definition
 - Exploring modules
 - Building a task
 - Places to define Ansible vars
 - hosts aka "Inventory"
 - Creating a A play
 - Looking at the "handler"
 - Running a playbook
 - Introduction to YAML
 - Requirements for connecting to remote hosts
 - Installation
 - Configuration requirements on the control machine
 - Python requirements on the host
 - Using ansible raw to install Python
 - Ansible config file and directory structure
 - ansible.cfg

- Ansible Inventory
- Roles
- Ansible Static Inventory
- Defining Hosts and Groups
- Host and Group variables
- Groups of Groups
- Default Groups
- YAML
- YAML Gotchas
- YAML Dictionary
- YAML list
- YAML list of dictionaries
- YAML Alternate format
- Relationship to JSON

- **Lesson 2 – Ansible for Server Operations**

- Ansible Ad hoc commands
- Ad hoc command syntax
- Parallel Shell commands
- Managing packages
- Managing users and groups
- Gathering facts
- ad hoc cheat sheet
- Writing a Simple Playbook
- Elements of a well written playbook
- A well-written Ansible play
- Using include files for tasks
- A well-written ansible variable file
- A well-written ansible inventory file
- Ansible config file and directory structure
- ansible.cfg
- Best practices concerning directory structures and organization
- Host Inventory and ansible_vars
- Introduction to roles
- Key Server Modules to Know
- Understanding modules documentation
- setup / gather_facts
- copy
- apt / yum / pip

- command / shell
- git
- get_url
- debug
- lineinfile

- **Lesson 3 – Ansible for Network Operations**

- Ansible and Jinja
- What is Jinja2?
- jinja variables
- jinja filters
- jinja tests
- How to use ansible template
- Review of the ansible template documentation
- Conditional and Looping Tasks
- Variables and Loops
- Using Complex Variables in Loops
- Variables and Templates
- Using variables in conditions
- Blocks
- Prompts
- Getting variables from the system
- Setting variables in playbooks
- registered variables
- Getting variables from the command line
- Where is the best source to derive variables values?
- Ansible Network Solutions with Ansible (focus on Juniper and Cisco)
- Writing Cisco and Juniper playbooks
- Modules for Cisco (IOS, NXOS, IOSXR, etc)
- Exploring Juniper solutions
- Built in Juniper modules
- Role based Juniper modules
- Installing a module from Juniper vendor
- Securing credentials / best practices
- New additions within the latest version of Ansible (v2.9)
- Ansible Galaxy and Roles
- Introduction to Ansible Galaxy
- Searching for roles
- Downloading roles

- Creating roles
- Role directory structure
- Using roles in your playbooks
- Best practices for roles
- Creating and sharing your own roles
- Ansible Vault
- What is Ansible Vault?
- Creating encrypted files
- Editing encrypted files
- Encrypting existing files
- Using encrypted files in playbooks
- Best practices for vault passwords
- Multiple vault passwords
- Decrypting files
- Rekeying files
- Labs:
- SSH client and server configs
- RSA key gen
- Methods for Installing Ansible
- Ansible Host Inventory
- Ad-Hoc Modules and Gather Facts
- Elevated Ad-Hoc Commands
- Running your first Playbook
- Ad-Hoc Raw Commands
- Debug, Loops, and YAML Lists
- When Conditionals, YAML Dictionaries, and Jinja
- ansible.cfg setup
- Building Playbooks - Bootstrap with raw, group, and user Modules
- Mapping YAML Vars Files in Playbooks
- Ansible Modules - shell
- Ansible Module - copy
- Ansible Module - apt
- Ansible Module - yum
- Ansible Module - get_url
- Ansible Module - file
- Ansible Module - git
- Ansible Module - template
- Playbook Tags

- Ansible Module - lineinfile and replace
- Manually Launch an OpenStack Instance
- OpenStack, Ansible and Shade
- YAML, JSON, Dynamic, and Cloud Inventories
- Configuring a Web Service with Ansible
- Ansible Handlers
- Ansible Error Handling
- pre_tasks, roles, tasks, post_tasks, and handlers
- Exploring Switches with Ansible
- network_cli Playbook
- Backup and Save Config - Cisco, Juniper, Arista, and many more
- Network Playbooks and Vendor Specific Modules
- Simplifying Network Playbooks with Agnostic Modules
- Reading Variables into Playbooks
- Ansible script module
- Ansible Lookup Plugin
- Ansible Playbook Output Logging
- Ansible Keywords - register and when
- Ansible Galaxy
- Ansible Vault
- Ansible Tower
- (Optional Case Study) Ansible for Palo Alto PanOS and Panorama
- (Optional Case Study) Ansible for Juniper Junos Core and Role Modules
- (Optional Case Study) Ansible for VMWare NSX Networking
- (Optional Case Study) Ansible NAPALM for Network Automation

Intended Audience

System administrators, network engineers, and developers might find this course compelling as well as cloud administrators and network administrators.

Prerequisites

Coding experience in another language serves as an adequate prerequisite.

Follow-on Courses

Network Automation with Python, Ansible and Playbooks

Ready to enroll? Call 800.674.3550 or email Info@AppliedTechAc.com — private team cohorts, GSA MAS purchasing, military credentialing funding, VA GI Bill and VR&E and student financing available.