Playtime with configuration

From (shell)script to (ansible) galaxy
Acknowledgment of Country
My journey from shell to galaxy

- shell scripts
- Manual installations
- Running shell script
- Scripts for diff distros
- configuration tools
- cfengine/puppet
- ansible plays
- Running with 'script'
- Running with module
- Running with roles

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My name is Ser Heang TAN, aka “TAN” (some people called me “Sir” too)
- Linux user/enthusiast
- Been playing with PC (games) since 1990
- Been working with Linux since the millennium (Y2K)
- Learning, living and loving Linux
- Love anime/cartoons/movie and Lego sets
What is configuration and why it is important?

- Configuration is what makes IT systems (servers, networks, OS, data centre, etc) work
- Configuration management is an engineering process for maintaining consistency in the IT infrastructure
- Configuration management tool is important because:
  - It establish and maintain consistency in the IT infrastructure
  - It enables the ability to scale infrastructure and software
  - It remove/reduce the repetitive and boring bits of system administration and configuration

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My infancy in configuration orchestration – Shell scripts + SSH

Just to demo how to convert some of the manual steps into shell scripts
My search for configuration management tools

- Simple to start with
  - Can quickly use and adapt my shell scripts
- Just need to use ssh
  - Like how I can run commands over ssh
- Does not require any additional packages on the target node(s)
  - I don’t want to install/manage client/daemon packages
- Easy to understand syntax
  - Something that describe what it is doing or going to change
- The ideal setup need to be “idempotent”
  - Configuration which can be apply multiple times without changing the result beyond the defined scope
Ansible

- **What?**
  - Introduced in 2012 by Michael DeHaan
  - Written in Python, but its configuration playbook uses YAML
  - Simple Architecture design – any of the node (in inventory) can be the control node (management)

- **Why?**
  - Agentless – just require ssh and python (>2.7.3)
  - Descriptive language – It uses descriptive YAML, which is human readable and easy to understand
  - Idempotence – Ensure the same config is maintained no matter how many times it runs
My simple ansible architecture
Ansible Demo 1

Just to demo how to use shell script(s) with ansible module (script) and how to use “role” in the Apache setup.
Ansible Roles & Ansible Galaxy

- Roles – abstraction that allow structuring Ansible configuration in modular and reusable format
- Don’t start from scratch – search roles in Ansible Galaxy
- Search role/content, just go to https://galaxy.ansible.com/search
  - Or run this command in terminal - `ansible-galaxy search <keyword>`
- My favourite author on Ansible Galaxy is Jeff Geerling aka “geerlingguy”
- Create roles using `ansible-galaxy init <rolename>`
  - This give you a standard role structure (directories and files)
### Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
<th>Score</th>
<th>Downloads</th>
<th>Last Updated</th>
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<td>4.9</td>
<td>5479011</td>
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<td><strong>Apache-PHP-FPM</strong></td>
<td>Apache 2.4+ PHP-FPM support for Linux.</td>
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<tr>
<td><strong>Apache_HTTPD-ROLE</strong></td>
<td>Apache HTTP Server role</td>
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<td>id</td>
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</table>
Teach to learn – Ansible AWX

A quick demo on how the Apache setup is done in AWX
Credits and Acknowledgements

- To LCA2022 for providing this opportunity for me to share my story
- To all LCA2022 attendees, volunteers, tech, and everyone who worked hard for the success of LCA2022
- To E. Dunham (the real @qedunham on LinkedIn and Twitter) for her encouragement of “You Should Speak!”
- To Michael DeHaan for creating Ansible
- To Jeff Geerling for sharing his ansible knowledge
  - I bought his book “Ansible for DevOps”
Feedback? Comment? Questions?

- Email: serheang@gmail.com
- Twitter: @serheang
- My public github: https://github.com/serheang
  - This journey @https://github.com/serheang/lca2022-ansible.git
- My in-frequent update Wordpress blog
Thank you
And I hope my journey will kickstart your configuration story
Tools & software that make this talk possible

- Oracle VirtualBox
- HashiCorp Vagrant
- CentOS
- Ubuntu
- Git
- Ansible 2.9
- Ansible AWX 17.1.0
- MobaXterm Home Edition
- Notepad++
- OBS Studio
- Canva Presentation
- Mermaid diagram and visualization
- Microsoft PowerPoint
References

- Configuration Tools Comparison
- Ansible 2.9 Documentation
- Ansible Galaxy
- Ansible AWX
- Jeff Geerling - Ansible for DevOps
- My LCA2022 Ansible Journey notes
My “complex” ansible architecture