Playtime with configuration

From (shell)script to (ansible) galaxy
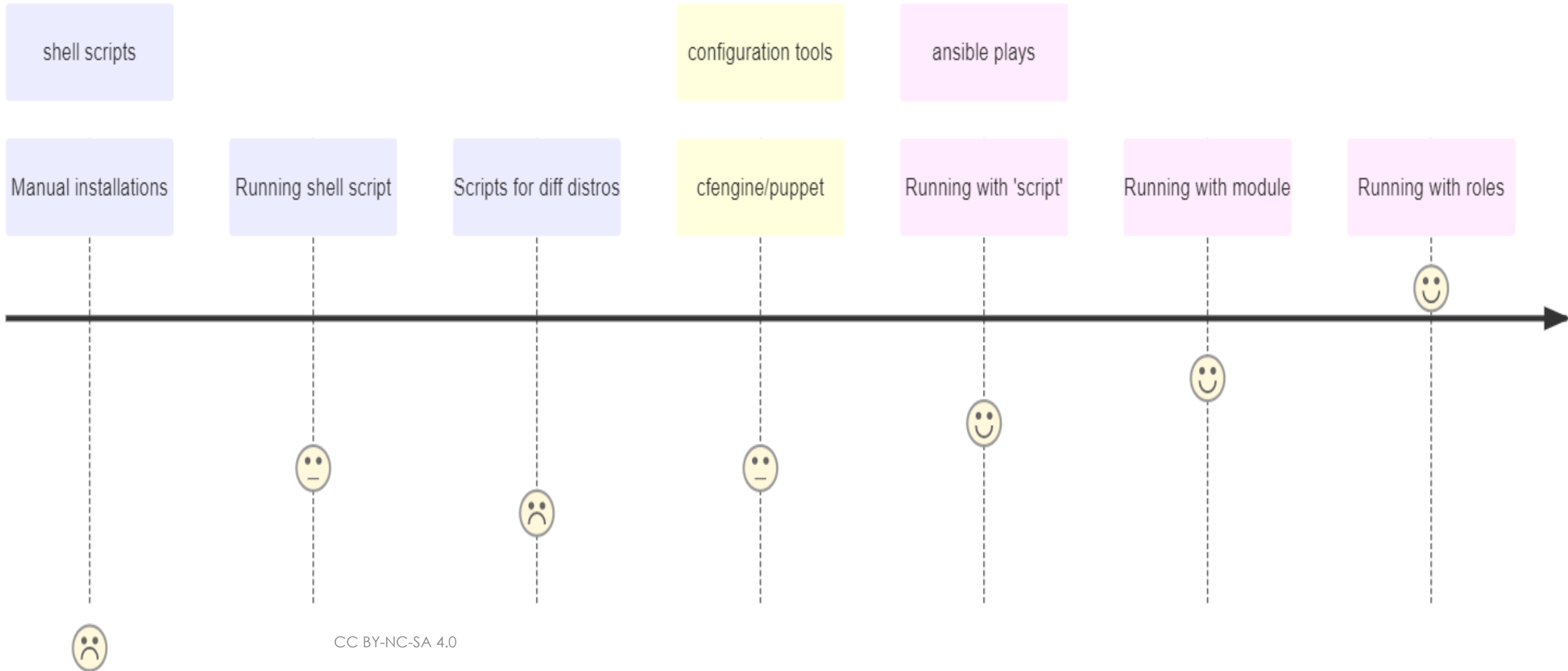
1

Acknowledgment of Country

My journey from shell to galaxy

whoami

Tan Ser Heang

- 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

LINUX CONF AU 2022

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

My infancy in configuration orchestration – Shell scripts + SSH

6

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
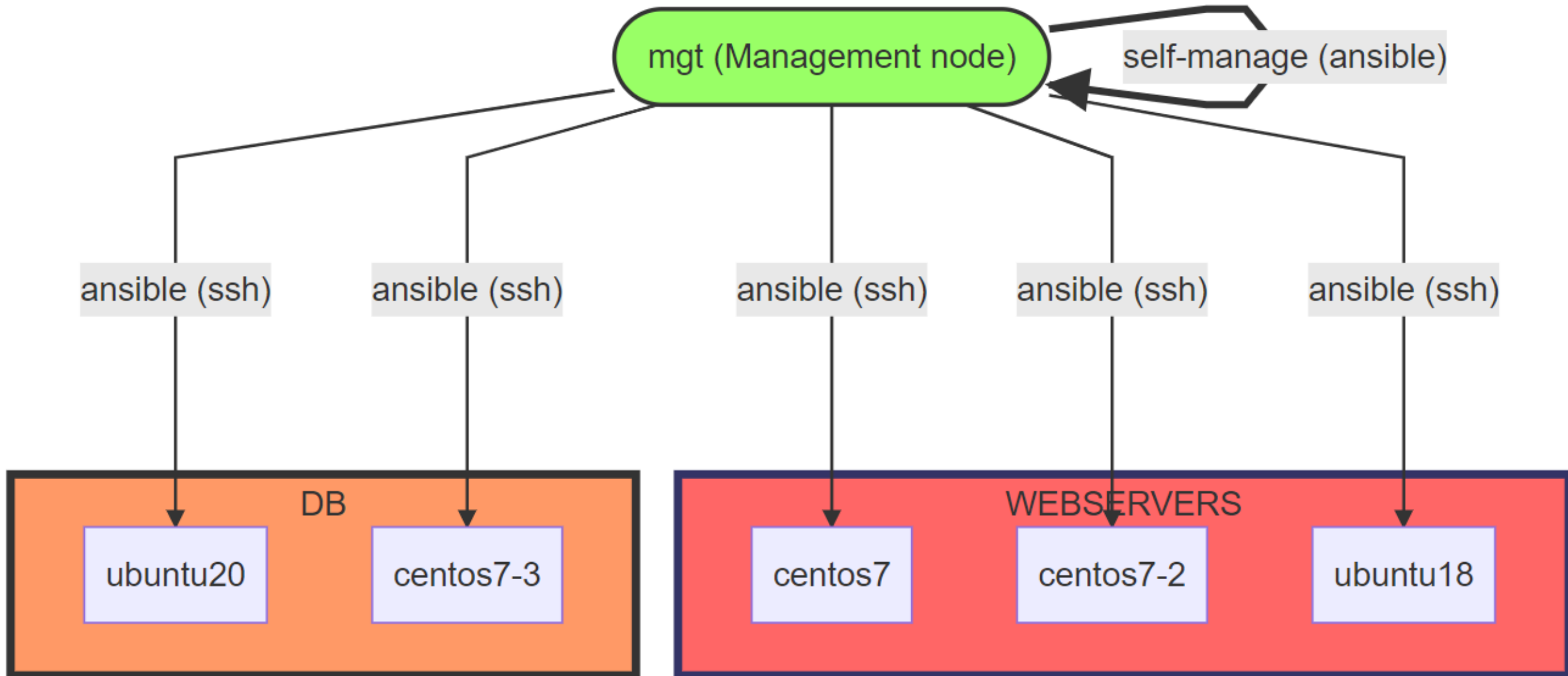
Ansible Demo 1

10

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)

apache   (3314 results)

^ Filters

Popular Tags

Type   Filter by Collection or Role...   Best Match

| system | 7,436 |

3314 Results   Active filters: Deprecated: False ✕   Type: Role ✕   Clear All Filters

| development | 3,391 |

| web | 2,882 |

Roles   3314

| monitoring | 1,700 |

apache

Apache 2.x for Linux.

| networking | 1,354 |

⊘ **4.9** / 5 Score   ⬇ 5479011 Downloads

Last Imported: 4 months ago

| database | 1,245 |

geerlingguy   apache   html   httpd   web   webserver

| docker | 1,167 |

apache-php-fpm

Apache 2.4+ PHP-FPM support for Linux.

| cloud | 1,150 |

⊘ **5** / 5 Score   ⬇ 374014 Downloads

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| ubuntu | 970 |

geerlingguy   apache   cgi   fpm   php   web

| security | 939 |

apache

Apache 2.x for Linux. (fork of geerlingguy.apache)

⊘ **5** / 5 Score   ⬇ 43461 Downloads

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Popular Platforms

wcm_io_devops   apache   html   httpd   web   webserver

| EL | 23,399 |

apache_httpd-role   build unknown

Apache HTTP Server role

| Ubuntu | 120,738 |

Teach to learn – Ansible AWX

13

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

16

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