Automatisering med Configuration Management-program, DEVOPS22

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Presentation

Mikael Nimell

- Currently working at Polisen with Containers and Kubernetes
- Manages servers in large scale environment where compliance and security is key
- Develops in Python, Bash and Go when needed.
- Have also worked with Puppet, Terraform and Salt
- My primary focus with clients is automation and system management
- Exclusively worked with Linux both professionally and for personal setups.

Example Lecture questions

- What three programming languages are Micke knowledgeable with?

 C#, Java, Python

 Kobol, Lisp, Golang

 Java, Python, Golang

 Python, Golang, Bash

Course objectives

After completing the course, the student must:

- Have an understanding for the processes that makes up Configuration management, and how they are used to automate, structure and optimize IT environments
- Be able to work with Configuration Management tools to automate, structure and optimize flows in a DevOps project

Betygskriterier

Betygsskala

Icke godkänd (IG), Godkänd (G) och Väl godkänd (VG).

- Betyget Godkänd (G): den studerande ska ha genomfört kursen och nått följande läranderesultat på Godkänt (G) nivå:
  - Kunna använda Configuration Management verktyg för att automatisera processflöden som utrullning, driftsättning av applikationer och tjänster samt drift och underhåll i DevOps projekt.
  - Med kunskap av grundidén bakom olika Configuration Management verktyg förstå hur denna påverkar deras uppbyggnad, användningsområden, funktionalitet och arbetssätt.
  - Hantera CMDB (Configuration Management Database) och dokumentation av Configuration Items.
  - Kunna strukturera och optimera processer som utrullning, driftsättning av applikationer och tjänster samt drift och underhåll i DevOps projekt.

- Betyget Väl godkänd (VG): den studerande ska ha genomfört kursen och nått alla kursens läranderesultat på minst Godkänt (G) nivå och följande läranderesultat på Väl godkänt (VG) nivå:
  - Självständigt kunna automatisera ett processflöde på ett optimerat vis med hjälp av lämpligt Configuration Management-verktyg och kan även motivera för sitt val av lösning.

- Betyget Icke godkänd (IG) sätts om studenten inte uppnått samtliga kriterier för Godkänd.

Examinations

- The examination consists of practical tasks and a demonstration of said tasks in front of the teacher.
- This will take place via ongoing practical hand out tasks that must be reported to the teacher.
- Helping each other out is allowed. However, each student must be able to understand and aptly present the work individually!

Grading criteria

- IG: Icke Godkänt: if the student haven’t reached satisfactory level of knowledge for Godkänt
- G: For Godkänt the student is required to pass the following criteria
  - The student can use Configuration Management tools to automate process flows such as rollout, commissioning of applications and services as well as operation and maintenance in DevOps projects
  - With knowledge of the basic idea behind various Configuration Management tools, the student can choose the appropriate tool to automate process flows such as rollout, commissioning of applications and services as well as operation and maintenance in DevOps projects
  - The student can structure and optimize process flows such as rollout, deployment of applications and services as well as operation and maintenance in DevOps projects
- VG: For Väl Godkänt the student is required to pass all the G criteria, as well as the following
  - The student can independently automate a process flow in an optimized way using the appropriate Configuration Management tool and can also justify their choice of solution

Course planning

- Monday 16/10
  - Introduction to the Teacher
  - Course planning (this)
  - Introduction to ansible
  - Review of the practical tasks
  - Setup of the laboratory environment

Course planning

- Tuesday 17/10
  - Ansible basics (09 - 13)
    - Inventory
    - Vault
    - Variables
    - Authentication handling
    - Possibly more depending on where we are in terms of time and content
  - Hand out of first practical tasks (13 – 17)
    - This is time to work on the tasks and as me for help
    - As well as time to present the tasks once you finish
    - I implore you to present tasks as you finish them, it evens out my work load

Course planning

- Thursday 19/10
  - Ansible playbooks (09 - 12)
    - Playbooks
    - Tasks
    - Modules
    - Templates
  - Work time and tutoring (13 – 16)
    - Work on tasks
    - Present tasks
    - Ask for help on tasks

Course planning

- Monday 23/10
  - Ansible playbooks (09 - 12)
    - Facts
    - Parallellism
    - Loops
  - Work time and tutoring (13 – 16)
    - Work on tasks
    - Present tasks
    - Ask for help on tasks

Course planning

- Tuesday 24/10
  - Ansible playbooks (09 – 12)
    - Roles
    - Handlers
    - Tags
  - Work time and tutoring (13 – 16)
    - Work on tasks
    - Present tasks
    - Ask for help on tasks

Course planning

- Thursday 26/10
  - Lecture about Puppet with Victor Andreasson (9 – 12)

Course planning

- Monday 30/10
  - Structure environments with Config. Mgmt. (9 - 12)
    - Scalability in the environment
    - Structuring control nodes against client nodes
    - Automation about Config. Mgmt.
  - Work time and tutoring (13 – 16)
    - Work on tasks
    - Present tasks
    - Ask for help on tasks

Course planning

- Tuesday 31/10
  - Collection and repetition
    - Repetition of the material
    - Review of questions
    - Tutoring of practical tasks
    - Tips and advice in general

Course planning

- Thursday 2/11
  - Last chance to present any practical tasks not yet presented
    - All day set off to work and present your tasks
    - G presentations will have priority over VG presentations