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ESD WORKSHOP

ANSIBLE

Jonas Klotzbach, Jan Polfers and Jannik Schwerdtner

CONTENT

Introduction into Ansible

What is Ansible?

Tasks

Functionality of Ansible

Key terms

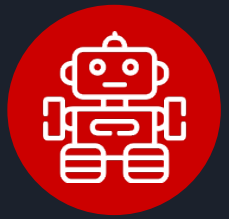
Comparison

Advantages and Disadvantages

Practical Example

Workshop

WHAT IS ANSIBLE?



Open-source automation

YAML-based syntax

Utilizes Playbooks to define tasks and configurations

Playbooks configure systems and deploy applications

TASKS

Configuration management

Cloud provisioning

Creating and managing DBs

Application orchestration

OS level updates

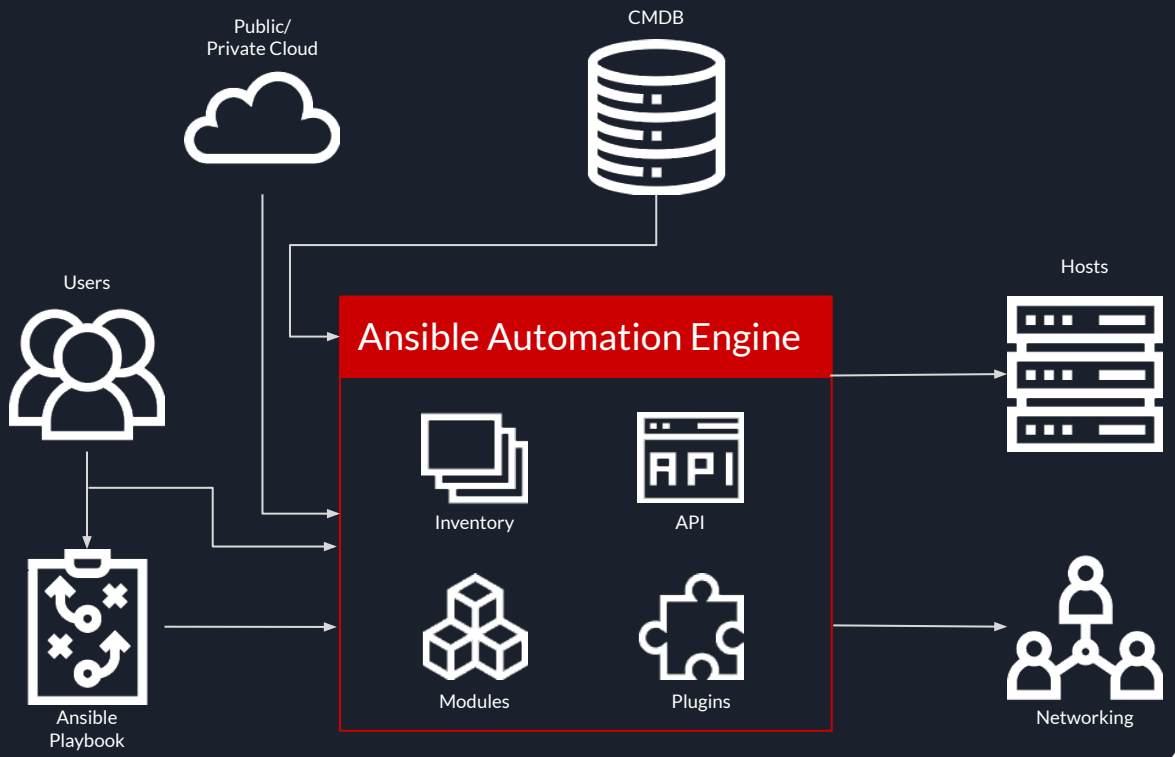
Application deployment

CONTENT

1. Introduction into Ansible
2. **Functionality of Ansible**
   - Ansible Architecture
3. Key terms
4. Comparison
5. Advantages and Disadvantages
6. Practical Example
7. Workshop

ANSIBLE ARCHITECTURE

- Playbooks define tasks and configurations
- Tasks are individual actions within Playbooks
- Inventory lists all managed systems
- Modules are reusable automation actions
- Communication via SSH or WinRM



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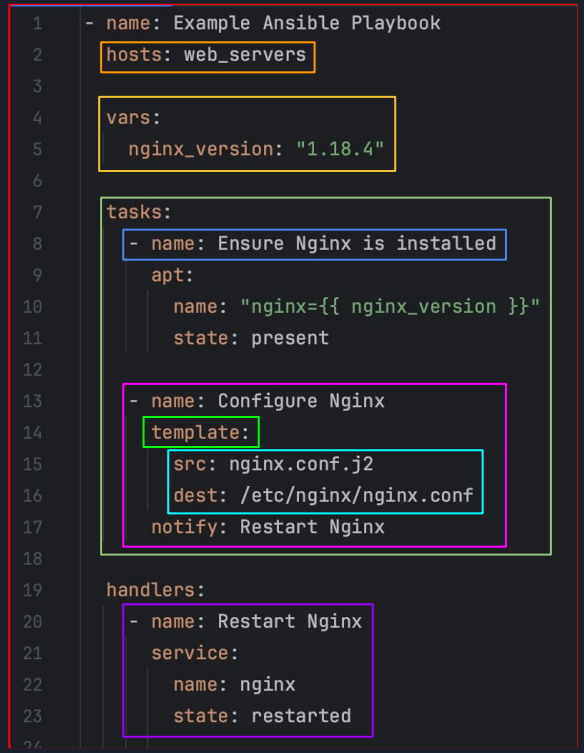
TERMS



Playbook

Host definition

Variable definition

Play

Task name

Task

Module name

Arguments

Handler

CONTENT

1. Introduction into Ansible
2. Functionality of Ansible
3. Key terms
4. **Comparison**
   - Ansible
   - Puppet
   - Chef
5. Advantages and Disadvantages
6. Practical Example
7. Workshop

COMPARISON

	Puppet *(2005)*	**Chef** *(2009)*	**Ansible** *(2012)*
Configuration	Puppet DSL	Ruby-based Recipes	YAML-based Playbooks
Scalability	High	Scales well with larger systems	High
Availability	Puppet Agent	Chef Client	Agentless
Programming Language	Ruby	Ruby/ Erlang	Python
Implementation	Puppet Agent on managed nodes	Chef Client on managed nodes	SSH and Python on managed nodes
Ease of use	Moderate	Requires more initial setup	Easy
Orchestration	Limited	Limited	Strong support

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4. Comparison
5. **Advantages and Disadvantages**
   - Why Ansible?
6. Practical Example
7. Workshop

ADVANTAGES AND DISADVANTAGES

ADVANTAGES

- Simplicity
- Scalability
- Extensibility
- Idempotency
- Agentlessness
- Large and Active Community
- Wide Platform Support
- Orchestration Capabilities
- Integration with Cloud Services

DISADVANTAGES

- Learning curve
- SSH-based communication
- Limited Built-in Error Handling
- Lack of Formal Windows Support for Controller
- Performance for Large Scale Deployments
- Limited Graphical Interface
- Security Concerns

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6. **Practical Example**
   - Deployment
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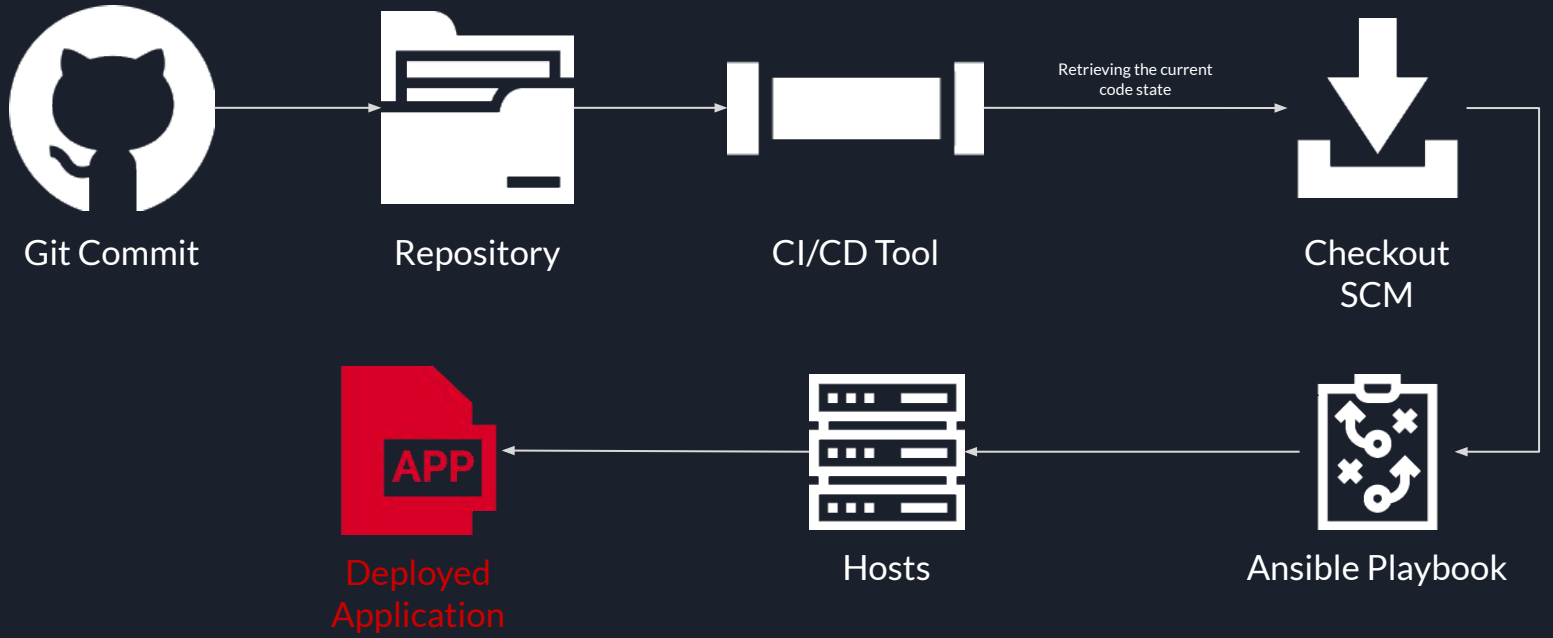
EXAMPLE


Git Commit
Repository
CI/CD Tool
Retrieving the current code state
Checkout SCM
Ansible Playbook
Hosts
APP
Deployed Application

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Workshop