Automate Your Monitoring

CHECKMK CONFERENCE #5 – MUNICH, APRIL 09, 2019
Automate your monitoring!

CHECKMK CONFERENCE #5 - MUNICH, APRIL 30, 2019
Agenda

1. INTRODUCTION TO AUTOMATION
2. AUTOMATION WITH ANSIBLE
3. AUTOMATION WITH SALT
4. DEMO
5. OPEN QUESTIONS AND OUTLOOK
Some fundamentals of Check_MK

- Attribute inheritance
- Rule based
- (Auxiliary) Tags
The APIs of checkmk

- Main API for automation
  - WebAPI
- Further APIs
  - Livestatus
  - HW/SW-Inventory
  - Simple HTTP

... and more...
Automation possibilities in checkmk

- Agent + Plugins
- Hosts + Services
- (Aux)Tags
- Agent Bakery
- ...

Site

Hosts

Agents

Rules

Users

Groups
Some fundamentals of automation

- Installation
- Configuration
- State audit

Rules
- What, when, with whom

Host list
- Who

Automation tool
- Make everything comply to target state
  - \( \text{State} = \text{target state} \)
- \( \text{State} \neq \text{target state} \)
INTRODUCTION TO AUTOMATION

Does automation reduce my workload?

Automation will help, if:

- Automation software is already available
- Knowledge about the software is available
- Compliance of states must be ensured
- Naming convention is established
Does automation reduce my workload?

**Automation will not help, if:**

- No automation software available
- No permission management like in checkmk
- Conflicts with checkmk features
  - Hard to recreate agent update monitoring in automation software
  - Signed agents only in checkmk
  - Potentially giving up other features
- Risk of producing more work caused by mixing technologies
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AUTOMATION WITH ANSIBLE

Specifics with Ansible

- Python based with configuration in YAML
- Agentless orchestration
  - ssh, winrm, ReST, etc.
- No database needed
- A host file (host.ini) assigns hosts to groups
- Organized in playbooks and roles and tasks
  - A playbook contains role(s) for a group of hosts
  - A role contains task(s)
  - A task contains concrete instruction(s)
AUTOMATION WITH ANSIBLE

Find out more

- Project is being developed on Github: https://github.com/tribe29/ansible-checkmk

- Some roles already available

- More roles and features coming soon

- You are very welcome to contribute!
hosts.ini

1 [g_cmk_hosts:children]
2 g_cmk_windows
3 g_cmk_linux
4
5
6 [g_cmk_windows]
7 win-local ansible_host=192.168.56.30
8
9 [g_cmk_linux]
10 docker-debian ansible_host=192.168.56.10
11 docker-centos ansible_host=192.168.56.11
12 docker-ubuntu ansible_host=192.168.56.12

- Major group: g_cmk_hosts
- Subgroups:
  - g_cmk_windows
  - g_cmk_linux
  - ...
- Split hosts & groupvars on big domains
AUTOMATION WITH ANSIBLE

Playbooks

```yaml
---
- hosts: g_cmk_hosts
  # fetch information about the
  # remote host (-> ansible_os_family)
  gather_facts: yes
  roles:
    - cmk_host_agent
    - cmk_host_plugins
    - cmk_site_host_registration
```

- Hierarchy
  - Based on OS
  - Based on tasks (recommended)
- Split into specific roles
Roles

```
1 cmk_host_agent/defaults:
2 main.yml
3
4 cmk_host_agent/meta:
5 main.yml
6
7 cmk_host_agent/tasks:
8 Debian-tasks.yml
9 main.yml
10 RedHat-tasks.yml
11 Windows-tasks.yml
12
13 cmk_host_agent/vars:
14 cmk_agent_generic.yml
15
```

- Manually: default variables
- Optional: Add tasks to extend OS support
Tasks

```python
---
# Install Check_MK Agent on Debian/Ubuntu
- name: Download agent
get_url:
  url: "{{ cmk_agent.url.deb }}"
dest: "{{ cmk_host_linux_tmp }}"
- name: Install agent
  become: yes
  apt:
    deb: "{{ cmk_agent.file.deb }}"
    state: present
```

- Agent already installed?
- Install agent
- Optional: Configure Firewall & SELinux
Some considerations

- Avoid traffic
- Use variables
- Restrict manual interaction
- Use your site
Example Playbook with three roles

1. Agent Installation
   - Based on OS type

2. Plugin Installation
   - Based on processes
   - Based on files
   - Based on packages

3. Host Registration
   - Add Host
   - Discover Services
   - Activate Changes
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