Ansible Roles

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1 Introduction

This guide provides a detailed walkthrough for configuring an Apple Bluetooth Keyboard on a Linux system using udev and Ansible. It aims to demonstrate the creation and deployment of a custom Ansible role specifically tailored for setting up and managing udev rules for hardware compatibility. Through a series of structured steps, you will learn how to establish a role directory, initialize and populate the role structure, and execute tasks within Ansible to apply necessary configurations. The guide focuses on practical implementations, including editing YAML files for task definitions and applying changes through a playbook run on the target machine.

2 Example Apple Bluetooth Keyboard Udev Configuration

1. Specify the location of the role directory. In case the default location is not suitable, it is possible to define the location via the Ansible configuration `role_path` or via the environment variable `ANSIBLE_ROLE_PATH`. Setting this to `./rls` for example gets expanded to the current path plus ‘rls’ in Ansible.

```
cd /tmp
mkdir rls
export ANSIBLE_ROLE_PATH="./rls"
ansible-config dump|grep ROLE |grep PATH
DEFAULT_ROLES_PATH(env: ANSIBLE_ROLES_PATH) = ['/tmp/rls']
```

2. Create a default structure for your role

```
cd /tmp/rls
ansible-galaxy role init apple-bluetooth-keyboard
- Role apple-bluetooth-keyboard was created successfully
tree
└── apple-bluetooth-keyboard
    ├── defaults
    │   └── main.yml
    ├── files
    ├── handlers
    │   └── main.yml
    ├── meta
    │   └── main.yml
    ├── README.md
    ├── tasks
    │   └── main.yml
    ├── templates
    ├── tests
    │   ├── inventory
    │   └── test.yml
    └── vars
        └── main.yml

10 directories, 8 files
```

3. Now edit the `README.md` and YAML files (even though they have the ending `yml`) to add information, like author and license and specify for which distribution this role is valid.
   - `README.md`
   - `meta/main.yml`
4. The main action happens in `tasks/main.yml`, `defaults/main.yml` and sometimes in `vars/main.yml`.

   Edit `defaults/main.yml` (YAML markers like `---` are omitted)

```
# defaults file for apple-bluetooth-keyboard
ns: apple-bluetooth-keyboard
pfx: /opt
repo_dst: "{{pfx}}/{{ns}}"
repo_user: root
repo_group: root
repo_url: https://github.com/ckuelker/apple-bluetooth-keyboard.git
rules: /etc/udev/rules.d/90-apple-bluetooth-keyboard.rules
```

Edit `tasks/main.yml` (YAML markers like `---` are omitted)

```
# tasks file for apple-bluetooth-keyboard
- name: "Create repository directory: {{repo_dst}}"
  file:
    path: "{{repo_dst}}"
    owner: "{{repo_user}}"
    group: "{{repo_group}}"
    mode: 0755
    state: directory
  # --- [ Apple bluetooth keyboard ]
  ↪ -------------------------------------
- name: "Create repository directory: {{repo_dst}}"
  file:
    path: "{{repo_dst}}"
    owner: "{{repo_user}}"
    group: "{{repo_group}}"
    mode: 0755
    state: directory
- name: "Clone repository {{repo_url}} to {{repo_dst}}"
  git:
    repo: "{{repo_url}}"
    dest: "{{repo_dst}}"
    clone: yes
    update: yes
  become: yes
  become_user: "{{repo_user}}"
- name: Define udev rules for Apple bluetooth keyboard
  ansible.builtin.copy:
    src: "{{repo_dst}}{{rules}}"
    dest: "{{rules}}"
    owner: root
    group: root
    mode: '0644'
```

```
  register: udev_rule_file
  # --- [ udev reload ]
  ----------------------------------------------------
- name: Reload udev rules
  ansible.builtin.command:
    cmd: udevadm control --reload-rules
  when: udev_rule_file.changed
```

5. Add a playbook “apple-bluetooth-keyboard.yaml” to your Ansible deployment and use the role (YAML markers like `---` are omitted)

```
- name: Configure Apple Keyboard and Udev
  hosts: role_client
  gather_facts: no
  become: yes
  tasks:
    - name: Define udev rules for disk names
      import_role:
        name: apple-bluetooth-keyboard
```

6. Run the playbook on `localhost`

```
ansible-playbook  pb/apple-bluetooth-keyboard.yaml
```

Depending on your Ansible setup, other options might be needed.

3 History

Version	Date	Notes
0.1.1	2024-06-27	Change from vars to defaults; typo; formatting
0.1.0	2024-06-25	Initial release

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