

# Troubleshooting Ansible: Common issues and how to resolve them

Ansible is a powerful automation tool, but users may encounter various issues while working with it. Here are some common issues and their resolutions:

## 1. SSH Connectivity Issues

**Description:** Problems connecting to remote hosts over SSH.

**Symptoms:**

- Connection timeouts
- Permission denied errors

**Resolution:**

- Ensure target machines are reachable via SSH.
- Verify SSH key configuration and permissions.
- Check `ansible_user` and `ansible_ssh_private_key_file` in inventory.
- Add SSH key to `ssh-agent` if using agent forwarding.

**Code:**

```
Shell  
ssh-add ~/.ssh/id_rsa
```

## 2. Missing or Incorrect Dependencies

**Description:** Tasks fail because required software is not installed.

**Symptoms:**

- Module or task failures due to missing dependencies.

**Resolution:**

- Install required dependencies on target machines.

- Use `ansible.builtin.package` to enforce dependency installation.

**Code:**

```
None
- name: Install dependencies

  ansible.builtin.package:

    name: "{{ item }}"

    state: present

  loop:

    - python3

    - python3-pip
```

### 3. YAML Syntax Errors

**Description:** Playbooks cannot run due to formatting issues.

**Symptoms:**

- Ansible playbook fails with syntax errors.

**Resolution:**

- Validate YAML syntax with a YAML linter/validator.
- Ensure proper indentation, colons, and dashes.
- Remove trailing spaces or tabs.

### 4. Undefined Variables

**Description:** Playbooks reference variables that don't exist.

**Symptoms:**

- Errors indicating variables are undefined.

**Resolution:**

- Define variables in inventory, playbooks, or `extra_vars`.
- Use `default` filter to provide fallback values.

**Code:**

```
None
- name: Use default value for undefined variable

  debug:

    msg: "{{ my_variable | default('default_value') }}"
```

## 5. Module Not Found

**Description:** Ansible cannot locate a required module.

**Symptoms:**

- Errors indicating a module is not found.

**Resolution:**

- Verify the module name is correct.
- Check compatibility with your Ansible version.
- Install missing collections.

**Code:**

Shell

```
ansible-galaxy collection install community.general
```

## 6. Permission Issues

**Description:** Tasks fail due to insufficient privileges.

**Symptoms:**

- Access denied errors on privileged tasks.

**Resolution:**

- Use `become: yes` to escalate privileges.
- Configure `become_method` if required.

**Code:**

None

```
- name: Task requiring sudo
```

```
  become: yes
```

```
  ansible.builtin.command:
```

```
    cmd: apt-get update
```

## 7. Playbook Logic Errors

**Description:** Playbook executes but does not behave as expected.

**Symptoms:**

- Tasks run incorrectly or skip unexpectedly.

**Resolution:**

- Use `debug` to inspect variable values.
- Check conditionals and loops carefully.

**Code:**

```
None
- name: Debug variable value

  debug:

    var: my_variable
```

## 8. Host Unreachable

**Description:** Target hosts cannot be contacted by Ansible.

**Symptoms:**

- Ansible reports a host is unreachable.

**Resolution:**

- Check network connectivity.
- Verify host/IP in inventory.
- Ensure machine is online and accessible.

## 9. Incorrect File Paths

**Description:** Playbooks reference non-existent or wrong file paths.

**Symptoms:**

- Errors about missing or invalid file paths.

**Resolution:**

- Ensure files exist at specified paths.

- Prefer absolute paths over relative ones.

## 10. Role or Playbook Not Found

**Description:** Ansible cannot find referenced roles or playbooks.

**Symptoms:**

- Errors indicating missing role or playbook.

**Resolution:**

- Verify file paths.
- Use `ansible-galaxy` to install missing roles.

**Code:**

```
Shell
ansible-galaxy install geerlingguy.apache
```

## 11. Misconfigured Inventory

**Description:** Inventory entries are incorrect or malformed.

**Symptoms:**

- Tasks fail or target wrong hosts.

**Resolution:**

- Validate inventory syntax.
- Ensure correct group/host definitions.

## 12. Idempotence Issues

**Description:** Tasks apply changes repeatedly when they should not.

**Symptoms:**

- Playbook changes state every run.

**Resolution:**

- Ensure tasks are idempotent.
- Use conditionals to limit execution.

**Code:**

None

```
- name: Ensure file is present
```

```
  ansible.builtin.file:
```

```
    path: /etc/myfile
```

```
    state: touch
```

```
  when: not (ansible_facts['distribution'] == 'Ubuntu')
```