

Ansible Handlers – Explained in Detail

Handlers in Ansible are special tasks that run **only when notified** by another task. They're mainly used to **trigger actions after a change**, such as restarting a service after a config file is updated.

Why Use Handlers?

- **Efficiency:** Run only when needed.
 - **Idempotency:** Prevent unnecessary restarts or reloads.
 - **Clean Structure:** Keep logic for “post-change actions” separate.
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Basic Structure of a Handler

Example: Restart Nginx if config changes

```
- name: Configure web server
  hosts: web
  tasks:
    - name: Copy nginx config
      copy:
        src: nginx.conf
        dest: /etc/nginx/nginx.conf
      notify: Restart nginx

  handlers:
    - name: Restart nginx
      service:
        name: nginx
        state: restarted
```

- The handler **Restart nginx** only runs **if the copy task reports a change**.
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What Triggers a Handler?

Any task that has:

notify: <handler-name>

Multiple tasks can notify the same handler, and **the handler runs only once at the end of the play**, regardless of how many times it's notified.

Multiple Handlers

You can define and notify multiple handlers:

notify:

- Restart nginx
 - Reload firewall
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Handlers Run Only If Changed

Handlers **will not run** if the notifying task did **not** change anything.

Example: Full Playbook with Handlers

```
- name: Install and configure Apache
  hosts: web
  tasks:
    - name: Install httpd
      yum:
        name: httpd
        state: present

    - name: Deploy config file
      template:
        src: httpd.conf.j2
        dest: /etc/httpd/conf/httpd.conf
      notify: Restart Apache
```

handlers:

- name: Restart Apache

service:

name: httpd

state: restarted

Important Notes

- Handlers run **after all tasks are complete**, not immediately after being notified.
- Use **unique names** for each handler.
- A handler is **skipped** if no notifying task reports a change.

Advanced Tip: Force a Handler

Use the `meta` module if you ever want to force a handler run mid-playbook:

- meta: flush_handlers

This will cause **all pending handlers to run immediately** at that point in the play.

Use Cases for Handlers

Task	Handler Trigger
Update a config file	Restart or reload service
Add firewall rule	Reload firewall
Install a new cron job	Restart cron daemon
Change SSL cert	Reload web server or load balancer
