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# ... modules you need to know

See examples and learn the most important modules for automating everyday tasks with Ansible.

11 Sep 2019 | [Shashank Hegde \(Red Hat\) \(/users/directedsoul\)](#) | 330 | [6 comments](#)



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program repetitive tasks to happen automatically without having to learn an advanced programming language.

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X Ansible's nodes it manages do not require any software, which eliminates potential security vulnerabilities and makes

...

[ansible.com/ansible/latest/user\\_guide/modules.html](https://www.ansible.com/ansible/latest/user_guide/modules.html)) are used inside an Ansible playbook. A playbook consists of tasks. These concepts may seem confusing if you're just starting out with playbooks, they will

- [How Ansible works \(https://www.ansible.com/how-ansible-works?intcmp=701f2000000h4RcAAI\)](https://www.ansible.com/how-ansible-works?intcmp=701f2000000h4RcAAI)
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- [Download and install Ansible \(https://docs.ansible.com/ansible/latest/intro\\_installation.html?intcmp=701f2000000h4RcAAI\)](https://docs.ansible.com/ansible/latest/intro_installation.html?intcmp=701f2000000h4RcAAI)
- [Ansible Essentials: Simplicity in automation technical overview \(https://www.redhat.com/en/services/training/do007-ansible-essentials-simplicity-automation-technical-overview?intcmp=701f2000000h4RcAAI\)](https://www.redhat.com/en/services/training/do007-ansible-essentials-simplicity-automation-technical-overview?intcmp=701f2000000h4RcAAI)
- [A quickstart guide to Ansible \(https://opensource.com/downloads/ansible-quickstart?intcmp=701f2000000h4RcAAI\)](https://opensource.com/downloads/ansible-quickstart?intcmp=701f2000000h4RcAAI)
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There are some modules that are frequently used in automating everyday tasks; those

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- **Host/inventory file:** Contains the entry of the nodes that need to be managed

- **Ansible.cfg file:** Located by default at `/etc/ansible/ansible.cfg`, it has the necessary privilege escalation options and the location of the inventory file

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X as modules that perform various tasks on a host listed

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## management

ular package managers, such as DNF and APT, to manage on a system. Functionality depends entirely on the these modules can install, upgrade, downgrade, e names of relevant modules are easy to guess. For [nf\\_module](#)

([https://docs.ansible.com/ansible/latest/modules/dnf\\_module.html](https://docs.ansible.com/ansible/latest/modules/dnf_module.html)), the old YUM

([https://docs.ansible.com/ansible/latest/modules/yum\\_module.html](https://docs.ansible.com/ansible/latest/modules/yum_module.html)), compatibility) is [yum\\_module](#)

([https://docs.ansible.com/ansible/latest/modules/yum\\_module.html](https://docs.ansible.com/ansible/latest/modules/yum_module.html)), while the APT

module is [apt\\_module](#)

([https://docs.ansible.com/ansible/latest/modules/apt\\_module.html](https://docs.ansible.com/ansible/latest/modules/apt_module.html)), the Slackpkg

module is [slackpkg\\_module](#)

([https://docs.ansible.com/ansible/latest/modules/slackpkg\\_module.html](https://docs.ansible.com/ansible/latest/modules/slackpkg_module.html)), and so on.

### Example 1:

```
- name: install the latest version of Apache and MariaDB
  dnf:
    name:
      - httpd
      - mariadb-server
  state: latest
```

This installs the Apache web server and the MariaDB SQL database.

### Example 2:

```
- name: Install a list of packages
```

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```
- postgresql
- postgresql-server
state: present
```

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X **Ansible** is and helps download multiple packages.

need a module to start it. The [service module](#) ([https://docs.ansible.com/ansible/latest/modules/service\\_module.html](https://docs.ansible.com/ansible/latest/modules/service_module.html)) enables you to start multiple packages; this comes in pretty handy.

```
ed on running process /usr/bin/foo
```

```
-----  
name: foo  
pattern: /usr/bin/foo  
state: started
```

This starts the service **foo**.

## Example 2:

```
- name: Restart network service for interface eth0  
service:  
  name: network  
  state: restarted  
  args: eth0
```

This restarts the network service of the interface **eth0**.

## Module 3: Copy

The [copy module](#) ([https://docs.ansible.com/ansible/latest/modules/copy\\_module.html](https://docs.ansible.com/ansible/latest/modules/copy_module.html)) copies a file from the local or remote machine to a location on the remote machine.

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```
- name: Copy a new "ntp.conf file into place, backing up the original if it differs from the current file
  copy:
    src: /mine/ntp.conf
    dest: /etc/ntp.conf
```

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A horizontal progress bar consisting of a dark grey bar followed by a light grey bar, with a small black triangle pointing to the right at the end.

nd permission, using symbolic representation

`mode: u=rw,g=r,o=r`

## Module 4: Debug

The [debug module](#)

([https://docs.ansible.com/ansible/latest/modules/debug\\_module.html](https://docs.ansible.com/ansible/latest/modules/debug_module.html)) prints statements during execution and can be useful for debugging variables or expressions without having to halt the playbook.

### Example 1:

```
- name: Display all variables/facts known for a host
  debug:
    var: hostvars[inventory_hostname]
    verbosity: 4
```

This displays all the variable information for a host that is defined in the inventory file.

### Example 2:

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```
content: |
  Good Morning!
  Awesome sunshine today.
register: display_file_content
Subscribe now          X tent
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```

The `copy` module output and displays it only when you example:

,

The [file module](https://docs.ansible.com/ansible/latest/modules/file_module.html) ([https://docs.ansible.com/ansible/latest/modules/file\\_module.html](https://docs.ansible.com/ansible/latest/modules/file_module.html)) manages the file and its properties.

- It sets attributes of files, symlinks, or directories.
- It also removes files, symlinks, or directories.

## Example 1:

```
- name: Change file ownership, group and permissions
  file:
    path: /etc/foo.conf
    owner: foo
    group: foo
    mode: '0644'
```

This creates a file named **foo.conf** and sets the permission to **0644**.

## Example 2:

```
- name: Create a directory if it does not exist
  file:
```

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This creates a directory named **some\_directory** and sets the permission to **0755**.

## Module 6: lineinfile

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[bole/latest/modules/lineinfile\\_module.html](#)) manages lines

; in a file or replaces an existing line using a backslash.

u want to change just a single line in a file.

to enforcing mode

```
lineinfile:
  path: /etc/selinux/config
  regexp: '^SELINUX='
  line: SELINUX=enforcing
```

This sets the value of **SELINUX=enforcing**.

### Example 2:

- **name:** Add a line to a file if the file does not exist, without passing **regexp**

```
lineinfile:
  path: /etc/resolv.conf
  Line: 192.168.1.99 foo.lab.net foo
  create: yes
```

This adds an entry for the IP and hostname in the **resolv.conf** file.

## Module 7: Git

The [git module](https://docs.ansible.com/ansible/latest/modules/git_module.html#git-module) ([https://docs.ansible.com/ansible/latest/modules/git\\_module.html#git-module](https://docs.ansible.com/ansible/latest/modules/git_module.html#git-module)) manages git checkouts of repositories to deploy files or software.

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```
# Example Create git archive from repo
- git:
  repo: https://github.com/ansible/ansible-examples.git
  dest: /tmp/ansible-examples.zip
```

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X ples.zip

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```
nsible/ansible-examples.git
s
ible-examples.git
```

rate Git directory.

## land

### The [cli\\_command module](#)

([https://docs.ansible.com/ansible/latest/modules/cli\\_command\\_module.html](https://docs.ansible.com/ansible/latest/modules/cli_command_module.html)), first available in Ansible 2.7, provides a platform-agnostic way of pushing text-based configurations to network devices over the **network\_cli connection** plugin.

### Example 1:

```
- name: commit with comment
  cli_config:
    config: set system host-name foo
    commit_comment: this is a test
```

This sets the hostname for a switch and exits with a commit message.

### Example 2:

```
- name: configurable backup path
  cli_config:
    config: "{{ lookup('template', 'basic/config.j2') }}"
    backup: yes
```

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This backs up a config to a different destination file.

## Module 9: Archive

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[Role/latest/modules/archive\\_module.html](#)) creates a more files. By default, it assumes the compression

`th/to/foo/ into /path/to/foo.tgz`

## Example 2:

```
- name: Create a bz2 archive of multiple files, rooted at /path
archive:
  path:
    - /path/to/foo
    - /path/wong/foo
  dest: /path/file.tar.bz2
  format: bz2
```

## Module 10: Command

One of the most basic but useful modules, the [command module](#) ([https://docs.ansible.com/ansible/latest/modules/command\\_module.html](https://docs.ansible.com/ansible/latest/modules/command_module.html)) takes the command name followed by a list of space-delimited arguments.

## Example 1:

```
- name: return motd to registered var
  command: cat /etc/motd
```

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```
- name: Change the working directory to somedir/ and run the command as db_owner if /path/to/db exists
  command: /usr/bin/make_database.sh db_user db_name
  become: yes
```

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available in Ansible, but these ten are the most basic and common for an automation job. As your requirements change, you can always search for more modules by entering **ansible-doc <module-name>** on the command line or explore the [official documentation](https://docs.ansible.com/) (<https://docs.ansible.com/>).



[\(/article/19/8/ops-tasks-ansible\)](/article/19/8/ops-tasks-ansible)

## **5 ops tasks to do with Ansible** [\(/article/19/8/ops-tasks-ansible\)](/article/19/8/ops-tasks-ansible)

Less DevOps, more OpsDev.

[Mark Phillips \(Red Hat\)](#) [\(/users/markp\)](#)



[\(/article/19/8/project-managers-guide-ansible\)](/article/19/8/project-managers-guide-ansible)

## **A project manager's guide to Ansible** [\(/article/19/8/project-managers-guide-ansible\)](/article/19/8/project-managers-guide-ansible)

Ansible is best known for IT automation, but it can streamline operations across the entire organization.

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[\(/article/19/3/developing-ansible-modules\)](/article/19/3/developing-ansible-modules)

## / about Ansible modules

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[s/jairojunior](#))

le)



## About the author

**Shashank Hegde** - I work as a solutions engineer at Red Hat and my day-to-day work involves working with OpenShift and Ansible. I'm highly passionate about open source, cloud, security and networking technologies.

[\(/users/directedsoul\)](#) More about me [\(/users/directedsoul\)](#)

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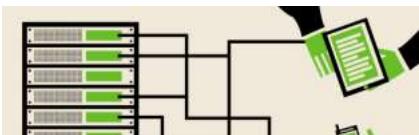
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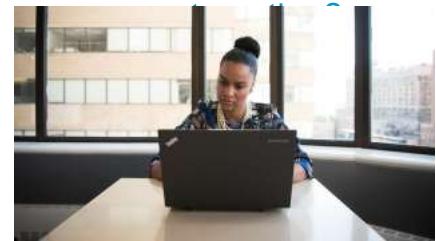
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[Marco Bravo \(/users/marcobravo\)](#) on 11 Sep 2019

Thank you for the recap of those Ansible modules. It's a good list.



Adam Miller on 11 Sep 2019

Hi! Ansible upstream contributor here, I am one of the maintainers for the yum and dnf modules.

First off, great write up!

Second, as of Ansible 2.8 you can now use the yum module for either yum or dnf (there's an action plugin associated with it to handle the magic). Just wanted to mention that, happy automating!



Ricky Latupeirissa on 11 Sep 2019

Why would you use the specific package management modules in stead of the package module? package is good for 95% of all use cases. I also would say that I use template more than file. I would also use command only as a last resort.

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.John Call ([/users/iohnsimcall](#)) on 11 Sep 2019

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X I think, however, that Module 6's Example 2 should replace

s

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[ers/jflory](#)) on 24 Sep 2019

sets SELinux to enforcing, but I also wanted to point out the SELinux way to set and manage SELinux:

[ble/latest/modules/selinux\\_module.html](#)

[m/ansible/latest/modules/selinux\\_module.html](#))



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