

# User Guide

## Note

### Making Open Source More Inclusive

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. We ask that you open an issue or pull request if you come upon a term that we have missed. For more details, see [our CTO Chris Wright's message](#).

Welcome to the Ansible User Guide! This guide covers how to work with Ansible, including using the command line, working with inventory, interacting with data, writing tasks, plays, and playbooks; executing playbooks, and reference materials. This page outlines the most common situations and questions that bring readers to this section. If you prefer a traditional table of contents, you can find one at the bottom of the page.

## Getting started

- I'd like an overview of how Ansible works. Where can I find:
  - a [ref`quick video overview <quickstart\\_guide>](#)`

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- a [ref`text introduction <intro\\_getting\\_started>](#)`

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- I'm ready to learn about Ansible. What [ref`basic\\_concepts`](#) do I need to learn?

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- I want to use Ansible without writing a playbook. How do I use [ref`ad hoc commands <intro\\_adhoc>](#)`?

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- I'm running an Ansible command and forgot which flags to use. Do you have a [ref`cheatsheet`](#)?

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## Writing tasks, plays, and playbooks

- I'm writing my first playbook. What should I [ref`know before I begin <playbooks\\_tips\\_and\\_tricks>](#)`?

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[rst] [user\_guide] index.rst, line 30); [backlink](#)

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- I have a specific use case for a task or play:
  - Executing tasks with elevated privileges or as a different user with `.ref:become <become>`

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- Repeating a task once for each item in a list with `.ref:loops <playbooks_loops>`

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- Executing tasks on a different machine with `.ref:delegation <playbooks_delegation>`

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- Running tasks only when certain conditions apply with `.ref:conditionals <playbooks_conditionals>` and evaluating conditions with `.ref:tests <playbooks_tests>`

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- Grouping a set of tasks together with `.ref:blocks <playbooks_blocks>`

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- Running tasks only when something has changed with `.ref:handlers <handlers>`

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- Changing the way Ansible `.ref:handles failures <playbooks_error_handling>`

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- Setting remote `ref` environment values `<playbooks_environment>`

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- I want to take advantage of the power of re-usable Ansible artifacts. How do I create re-usable `ref` files `<playbooks_reuse>` and `ref` roles `<playbooks_reuse_roles>`?

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- I need to incorporate one file or playbook inside another. What is the difference between `ref` including and importing `<dynamic_vs_static>`?

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- I want to run selected parts of my playbook. How do I add and use `ref` tags `<tags>`?

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## Working with inventory

- I have a list of servers and devices I want to automate. How do I create `ref` inventory `<intro_inventory>` to track them?

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- I use cloud services and constantly have servers and devices starting and stopping. How do I track them using `ref` dynamic inventory `<intro_dynamic_inventory>`?

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- I want to automate specific sub-sets of my inventory. How do I use `ref` patterns `<intro_patterns>`?

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## Interacting with data

- I want to use a single playbook against multiple systems with different attributes. How do I use `ref`variables <playbooks_variables>`` to handle the differences?

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- I want to retrieve data about my systems. How do I access `ref`Ansible facts <vars_and_facts>``?

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- I need to access sensitive data like passwords with Ansible. How can I protect that data with `ref`Ansible vault <vault>``?

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- I want to change the data I have, so I can use it in a task. How do I use `ref`filters <playbooks_filters>`` to transform my data?

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- I need to retrieve data from an external datastore. How do I use `ref`lookups <playbooks_lookups>`` to access databases and APIs?

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- I want to ask playbook users to supply data. How do I get user input with `ref`prompts <playbooks_prompts>``?

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- I use certain modules frequently. How do I streamline my inventory and playbooks by `ref`setting default values for module parameters <module_defaults>``?

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## Executing playbooks

Once your playbook is ready to run, you may need to use these topics:

- Executing "dry run" playbooks with [ref: check mode and diff <check\\_mode\\_dry>](#)

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- Running playbooks while troubleshooting with [ref: start and step <playbooks\\_start\\_and\\_step>](#)

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- Correcting tasks during execution with the [ref: Ansible debugger <playbook\\_debugger>](#)

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- Controlling how my playbook executes with [ref: strategies and more <playbooks\\_strategies>](#)

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- Running tasks, plays, and playbooks [ref: asynchronously <playbooks\\_async>](#)

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## Advanced features and reference

- Using [ref: advanced syntax <playbooks\\_advanced\\_syntax>](#)

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- Manipulating [ref: complex data <complex\\_data\\_manipulation>](#)

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- Using [ref: plugins <plugins\\_lookup>](#)

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- Using `ref:playbook keywords <playbook_keywords>`

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- Using `ref:command-line tools <command_line_tools>`

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- Rejecting `ref:specific modules <plugin_filtering_config>`

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- Module `ref:maintenance <modules_support>`

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## Traditional Table of Contents

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Unknown directive type "toctree".

```
.. toctree::
   :maxdepth: 2

   quickstart
   cheatsheet
   basic_concepts
   intro_getting_started
   intro_adhoc
   playbooks
   playbooks_intro
   playbooks_best_practices
   become
   playbooks_loops
   playbooks_delegation
   playbooks_conditionals
   playbooks_tests
   playbooks_blocks
   playbooks_handlers
   playbooks_error_handling
   playbooks_environment
   playbooks_reuse
   playbooks_reuse_roles
```

playbooks\_reuse\_includes  
playbooks\_tags  
intro\_inventory  
intro\_dynamic\_inventory  
intro\_patterns  
connection\_details  
command\_line\_tools  
playbooks\_variables  
playbooks\_vars\_facts  
vault  
playbooks\_filters  
playbooks\_lookups  
playbooks\_prompts  
playbooks\_module\_defaults  
playbooks\_checkmode  
playbooks\_startnstep  
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../reference\_appendices/playbooks\_keywords  
intro\_bsd  
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collections\_using