Red Hat Ansible Automation Platform 2.4

Automation content navigator creator guide

Develop content that is compatible with Ansible Automation Platform

Last Updated: 2024-07-02

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Develop content that is compatible with Ansible Automation Platform

Legal Notice

Abstract

This guide shows how use automation content navigator to develop Ansible playbooks, collections, and roles that are compatible with Ansible Automation Platform.

Table of Contents

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

If you have a suggestion to improve this documentation, or find an error, please contact technical support at https://access.redhat.com to create an issue on the Ansible Automation Platform Jira project using the **docs-product** component.

CHAPTER 1. INTRODUCTION TO AUTOMATION CONTENT NAVIGATOR

As a content creator, you can use automation content navigator to develop Ansible playbooks, collections, and roles that are compatible with the Red Hat Ansible Automation Platform. You can use automation content navigator in the following environments, with seamless and predictable results across them all:

- Local development machines
- Automation execution environments

Automation content navigator also produces an artifact file you can use to help you develop your playbooks and troubleshoot problem areas.

1.1. USES FOR AUTOMATION CONTENT NAVIGATOR

Automation content navigator is a command line, content-creator-focused tool with a text-based user interface. You can use automation content navigator to:

- Launch and watch jobs and playbooks.
- Share stored, completed playbook and job run artifacts in JSON format.
- Browse and introspect automation execution environments.
- Browse your file-based inventory.
- Render Ansible module documentation and extract examples you can use in your playbooks.
- View a detailed command output on the user interface.

1.2. AUTOMATION CONTENT NAVIGATOR MODES

Automation content navigator operates in two modes:

stdout mode

Accepts most of the existing Ansible commands and extensions at the command line.

text-based user interface mode

Provides an interactive, text-based interface to the Ansible commands. Use this mode to evaluate content, run playbooks, and troubleshoot playbooks after they run using artifact files.

1.2.1. stdout mode

Use the **-m stdout** subcommand with automation content navigator to use the familiar Ansible commands, such as **ansible-playbook** within automation execution environments or on your local development environment. You can use commands you are familiar with for quick tasks.

Automation content navigator also provides extensive help in this mode:

--help

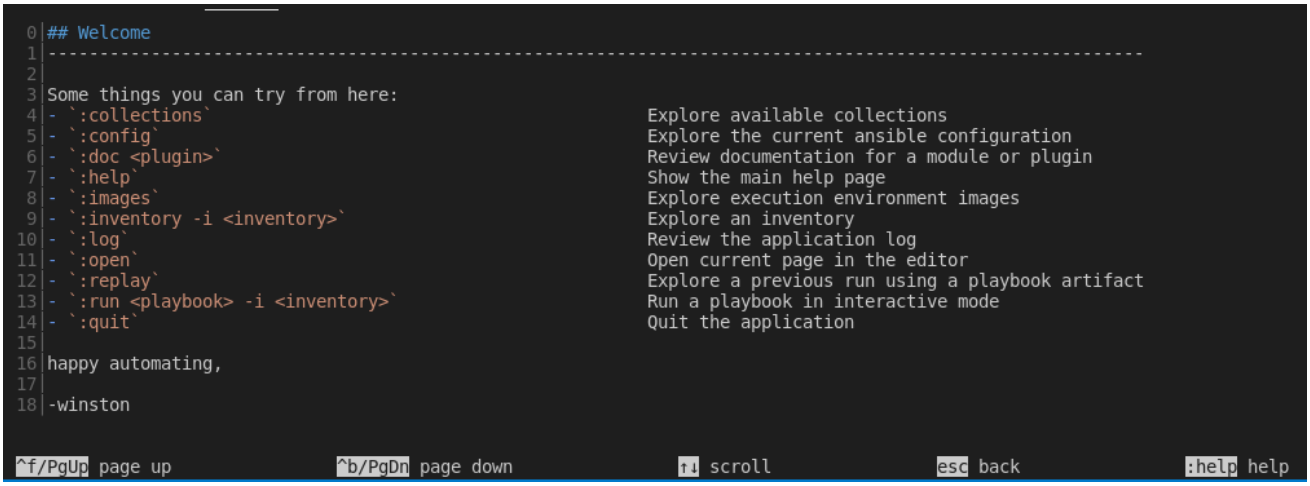
Accessible from **ansible-navigator** command or from any subcommand, such as **ansible-navigator config --help**.

subcommand help

Accessible from the subcommand, for example **ansible-navigator config --help-config**. This help displays the details of all the parameters supported from the related Ansible command.

1.2.2. Text-based user interface mode

The text-based user interface mode provides enhanced interaction with automation execution environments, collections, playbooks, and inventory. This mode is compatible with integrated development environments (IDE), such as Visual Studio Code.



This mode includes a number of helpful user interface options:

colon commands

You can access all the automation content navigator commands with a colon, such as **:run** or **:collections**

navigating the text-based interface

The screen shows how to page up or down, scroll, escape to a prior screen or access **:help**.

output by line number

You can access any line number in the displayed output by preceding it with a colon, for example **:12**.

color-coded output

With colors enabled, automation content navigator displays items, such as deprecated modules, in red.

pagination and scrolling

You can page up or down, scroll, or escape by using the options displayed at the bottom of each automation content navigator screen.

You cannot switch between modes after automation content navigator is running.

This document uses the text-based user interface mode for most procedures.

1.3. AUTOMATION CONTENT NAVIGATOR COMMANDS

The automation content navigator commands run familiar Ansible CLI commands in **-m stdout** mode. You can use all the subcommands and options from the related Ansible CLI command. Use **ansible-navigator --help** for details.

Table 1.1. Automation content navigator commands

Command	Description	CLI example
collections	Explore available collections	**ansible-navigator collections --help**
config	Explore the current Ansible configuration	**ansible-navigator config --help**
doc	Review documentation for a module or plugin	**ansible-navigator doc --help**
images	Explore execution environment images	**ansible-navigator images --help**
inventory	Explore an inventory	**ansible-navigator inventory --help**
replay	Explore a previous run using a playbook artifact	**ansible-navigator replay --help**
run	Run a playbook	**ansible-navigator run --help**
welcome	Start at the welcome page	**ansible-navigator welcome --help**

1.4. RELATIONSHIP BETWEEN ANSIBLE AND AUTOMATION CONTENT NAVIGATOR COMMANDS

The automation content navigator commands run familiar Ansible CLI commands in **-m stdout** mode. You can use all the subcommands and options available in the related Ansible CLI command. Use **ansible-navigator --help** for details.

Table 1.2. Comparison of automation content navigator and Ansible CLI commands

automation content navigator command	Ansible CLI command
ansible-navigator collections	**ansible-galaxy collection**
ansible-navigator config	**ansible-config**
ansible-navigator doc	**ansible-doc**
ansible-navigator inventory	**ansible-inventory**
ansible-navigator run	**ansible-playbook**

CHAPTER 2. INSTALLING AUTOMATION CONTENT NAVIGATOR ON RHEL

As a content creator, you can install automation content navigator on Red Hat Enterprise Linux (RHEL) 8.6 or later.

2.1. INSTALLING AUTOMATION CONTENT NAVIGATOR ON RHEL FROM AN RPM

You can install automation content navigator on Red Hat Enterprise Linux (RHEL) from an RPM.

Prerequisites

- You have installed RHEL 8.6 or later.
- You registered your system with Red Hat Subscription Manager.

NOTE

Ensure that you only install the navigator matching your current Red Hat Ansible Automation Platform environment.

Procedure

1. Attach the Red Hat Ansible Automation Platform SKU:

```
$ subscription-manager attach --pool=<sku-pool-id>
```

2. Install automation content navigator with the following command:
v.2.4 for RHEL 8 for x86_64

```
$ sudo dnf install --enablerepo=ansible-automation-platform-2.4-for-rhel-8-x86_64-rpms
ansible-navigator
```

v.2.4 for RHEL 9 for x86-64

```
$ sudo dnf install --enablerepo=ansible-automation-platform-2.4-for-rhel-9-x86_64-rpms
ansible-navigator
```

Verification

- Verify your automation content navigator installation:

```
$ ansible-navigator --help
```

The following example demonstrates a successful installation:

```
$ ansible-navigator --help
usage: ansible-navigator [-h] [--version] [--cdcp COLLECTION_DOC_CACHE_PATH] [--ce CONTAINER_ENGINE] [--dc DISPLAY_COLOR] [--ecmd EDITOR_COMMAND]
                         [--econ EDITOR_CONSOLE] [--ee EXECUTION_ENVIRONMENT] [--eei EXECUTION_ENVIRONMENT_IMAGE]
                         [--eev EXECUTION_ENVIRONMENT_VOLUME_MOUNTS [EXECUTION_ENVIRONMENT_VOLUME_MOUNTS ...]] [--la LOG_APPEND] [--lf LOG_FILE]
                         [--ll LOG_LEVEL] [-m MODE] [--osc4 OSC4] [--penv PASS_ENVIRONMENT_VARIABLE [PASS_ENVIRONMENT_VARIABLE ...]]
                         [--pp PULL_POLICY] [--senv SET_ENVIRONMENT_VARIABLE [SET_ENVIRONMENT_VARIABLE ...]]
                         {subcommand} --help ...

optional arguments:
  -h, --help            show this help message and exit
  --version             show program's version number and exit

  <... output truncated ...>

Subcommands:
  {subcommand} --help
    collections         Explore available collections
    config              Explore the current ansible configuration
    doc                 Review documentation for a module or plugin
    images              Explore execution environment images
    inventory           Explore an inventory
    replay              Explore a previous run using a playbook artifact
    run                 Run a playbook
    welcome             Start at the welcome page
```

CHAPTER 3. REVIEWING AUTOMATION EXECUTION ENVIRONMENTS WITH AUTOMATION CONTENT NAVIGATOR

As a content developer, you can review your automation execution environment with automation content navigator and display the packages and collections included in the automation execution environments. Automation content navigator runs a playbook to extract and display the results.

3.1. REVIEWING AUTOMATION EXECUTION ENVIRONMENTS FROM AUTOMATION CONTENT NAVIGATOR

You can review your automation execution environments with the automation content navigator text-based user interface.

Prerequisites

- Automation execution environments

Procedure

1. Review the automation execution environments included in your automation content navigator configuration.

```
$ ansible-navigator images
```

```
  NAME                                                 TAG      EXECUTION ENVIRONMENT   CREATED          SIZE
0 ansible-automation-platform-20-ee-minimal-rhel8      latest                    True   4 weeks ago      411 MB
1 ansible-automation-platform-20-ee-supported-rhel8 (primary)  latest                    True   45 hours ago     923 MB
2 ansible-runner                                       devel                     True   4 weeks ago      652 MB
3 ccutil                                               amazing                  False   16 months ago    1.67 GB
```

2. Type the number of the automation execution environment you want to delve into for more details.

```
  ANSIBLE-AUTOMATION-PLATFORM-20-EE-SUPPORTED-RHEL8:LATEST (PRIMARY)    DESCRIPTION
0 Image information                                                     Information collected from image inspection
1 General information                                                   OS and python version information
2 Ansible version and collections                                       Information about ansible and ansible collections
3 Python packages                                                       Information about python and python packages
4 Operating system packages                                             Information about operating system packages
5 Everything                                                            All image information
```

   You can review the packages and versions of each installed automation execution environment and the Ansible version any included collections.

3. Optional: pass in the automation execution environment that you want to use. This becomes the primary and is the automation execution environment that automation content navigator uses.

```
$ ansible-navigator images --eei registry.example.com/example-enterprise-ee:latest
```

Verification

- Review the automation execution environment output.

```
  ANSIBLE-AUTOMATION-PLATFORM-20-EE-SUPPORTED-RHEL8:LATEST (PRIMARY)    DESCRIPTION
0 Image information                                                     Information collected from image inspection
1 General information                                                   OS and python version information
2 Ansible version and collections                                       Information about ansible and ansible collections
3 Python packages                                                       Information about python and python packages
4 Operating system packages                                             Information about operating system packages
5 Everything                                                            All image information
```

CHAPTER 4. REVIEWING INVENTORIES WITH AUTOMATION CONTENT NAVIGATOR

As a content creator, you can review your Ansible inventory with automation content navigator and interactively delve into the groups and hosts.

4.1. REVIEWING INVENTORY FROM AUTOMATION CONTENT NAVIGATOR

You can review Ansible inventories with the automation content navigator text-based user interface in interactive mode and delve into groups and hosts for more details.

Prerequisites

- A valid inventory file or an inventory plugin.

Procedure

1. Start automation content navigator.

```
$ ansible-navigator
```

   Optional: type **ansible-navigator inventory -i simple_inventory.yml** from the command line to view the inventory.

2. Review the inventory.

```
 :inventory -i simple_inventory.yml

   TITLE           DESCRIPTION
0| Browse groups    Explore each inventory group and group members members
1| Browse hosts     Explore the inventory with a list of all hosts
```

3. Type **0** to brows the groups.

```
  NAME            TAXONOMY                TYPE
0| general         all                   group
1| nodes           all                   group
2| ungrouped        all                    group
```

   The **TAXONOMY** field details the hierarchy of groups the selected group or node belongs to.

4. Type the number corresponding to the group you want to delve into.

```
  NAME           TAXONOMY                 TYPE
0| node-0         all▸nodes               host
1| node-1         all▸nodes               host
2| node-2         all▸nodes               host
```

5. Type the number corresponding to the host you want to delve into, or type **:<number>** for numbers greater than 9.

```
[node-1]
0│ ---
1│ ansible_host: node-1.example.com
2│ inventory_hostname: node-1
```

Verification

- Review the inventory output.

```
  TITLE           DESCRIPTION
0│ Browse groups   Explore each inventory group and group members members
1│ Browse hosts    Explore the inventory with a list of all hosts
```

Additional resources

- ansible-inventory.
- How to build your inventory .

CHAPTER 5. BROWSING COLLECTIONS WITH AUTOMATION CONTENT NAVIGATOR

As a content creator, you can browse your Ansible collections with automation content navigator and interactively delve into each collection developed locally or within Automation execution environments.

5.1. AUTOMATION CONTENT NAVIGATOR COLLECTIONS DISPLAY

Automation content navigator displays information about your collections with the following details for each collection:

SHADOWED

Indicates that an additional copy of the collection is higher in the search order, and playbooks prefer that collection.

TYPE

Shows if the collection is contained within an automation execution environment or volume mounted on onto the automation execution environment as a **bind_mount**.

PATH

Reflects the collections location within the automation execution environment or local file system based on the collection TYPE field.

	NAME	VERSION	SHADOWED	TYPE	PATH
0	amazon.aws	1.5.0	False	contained	/usr/share/ansible/collections/ansible_collections/amazon/aws/
1	ansible.posix	1.2.0	False	contained	/usr/share/ansible/collections/ansible_collections/ansible/posix/
2	ansible.utils	2.2.0	False	bind_mount	/home/samccann/aap/collections/ansible_collections/ansible/utils/
3	ansible.windows	1.6.0	False	contained	/usr/share/ansible/collections/ansible_collections/ansible/windows/
4	awx.awx	19.2.2	False	bind_mount	/home/samccann/aap/collections/ansible_collections/awx/awx/
5	awx.awx	19.2.0	True	contained	/usr/share/ansible/collections/ansible_collections/awx/awx/
6	azure.azcollection	1.7.0	False	contained	/usr/share/ansible/collections/ansible_collections/azure/azcollection/

5.2. BROWSING COLLECTIONS FROM AUTOMATION CONTENT NAVIGATOR

You can browse Ansible collections with the automation content navigator text-based user interface in interactive mode and delve into each collection. automation content navigator shows collections within the current project directory and those available in the automation execution environments

Prerequisites

- A locally accessible collection or installed automation execution environments.

Procedure

1. Start automation content navigator

```
$ ansible-navigator
```

2. Browse the collection. Alternately, you can type **ansible-navigator collections** to directly browse the collections.

```
$ :collections
```

```
  NAME              VERSION SHADOWED TYPE      PATH
0 amazon.aws        1.4.1       False contained /usr/share/ansible/collections/ansible_collections/amazon/aws/
1 ansible.netcommon 2.1.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/netcom
2 ansible.posix     1.2.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/posix/
3 ansible.tower     3.8.3       False contained /usr/share/ansible/collections/ansible_collections/ansible/tower/
4 ansible.utils     2.2.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/utils/
5 ansible.windows   1.5.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/windows
6 arista.eos        2.1.2       False contained /usr/share/ansible/collections/ansible_collections/arista/eos/
```

3. Type the number of the collection you want to explore.

```
:4
```

```
  ANSIBLE.UTILS    TYPE    ADDED  DEPRECATED   DESCRIPTION
0 cli_parse        module  1.0.0       False   Parse cli output or text using a variety of parsers
1 fact_diff        module  1.0.0       False   Find the difference between currently set facts
2 from_xml         filter  2.0.2       False   Convert given XML string to native python dictionary.
3 get_path         lookup  1.0.0       False   Retrieve the value in a variable using a path
4 get_path         filter  1.0.0       False   Retrieve the value in a variable using a path
5 in_any_network   test    2.2.0       False   Test if Test if an IP or network falls in any network
6 in_network       test    2.2.0       False   Test if IP address falls in the network
```

4. Type the number corresponding to the module you want to delve into.

```
ANSIBLE.UTILS.IP_ADDRESS: Test if something in an IP address
 0 ---
 1 additional_information: {}
 2 collection_info:
 3   authors:
 4   - Ansible Community
 5   dependencies: {}
 6   description: Ansible Collection with utilities to ease the management, manipulation,
 7     and validation of data within a playbook
 8   documentation: null
 9   homepage: null
10   issues: null
11   license: []
12   license_file: LICENSE
13   name: ansible.utils
14   namespace: ansible
15   path:/usr/share/ansible/collections/ansible_collections/ansible/utils/
16   readme: README.md
<... output truncated...>
```

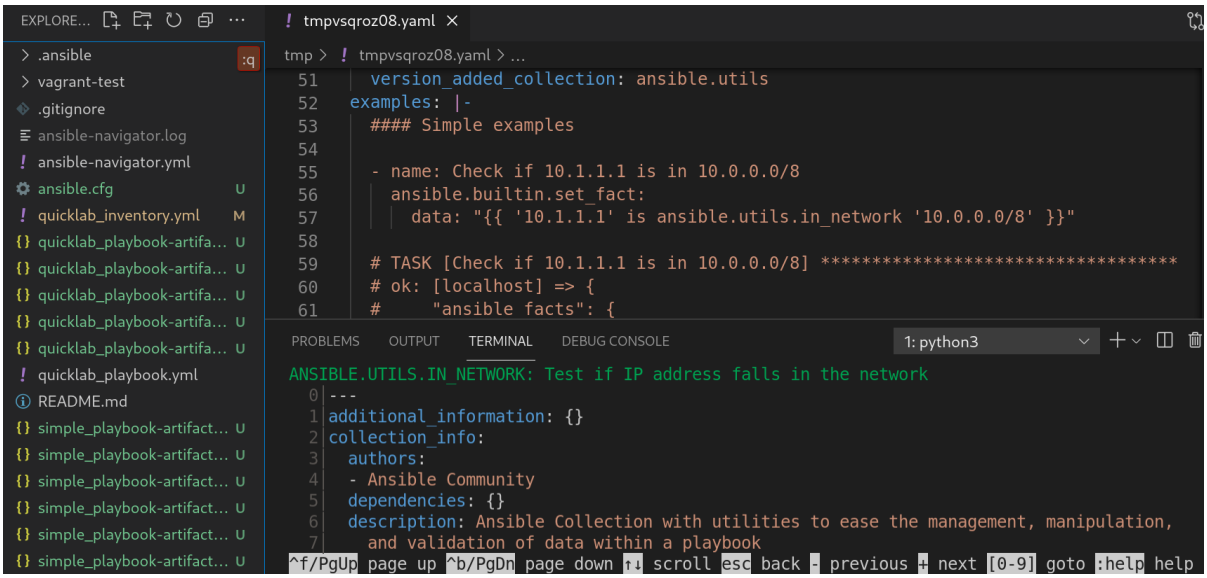
5. Optional: jump to the documentation examples for this module.

```
:{{ examples }}

0
1
2 #### Simple examples
3
4 - name: Check if 10.1.1.1 is a valid IP address
5   ansible.builtin.set_fact:
6     data: "{{ '10.1.1.1' is ansible.utils.ip_address }}"
7
8 # TASK [Check if 10.1.1.1 is a valid IP address] **********************
9 # ok: [localhost] => {
10 #     "ansible_facts": {
11 #         "data": true
12 #     },
```

```
#     "changed": false
# }

```

6. Optional: open the example in your editor to copy it into a playbook.

```
:open
```



Verification

- Browse the collection list.

```
  NAME              VERSION SHADOWED TYPE      PATH
0 amazon.aws        1.4.1       False contained /usr/share/ansible/collections/ansible_collections/amazon/aws/
1 ansible.netcommon 2.1.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/netcomm
2 ansible.posix     1.2.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/posix/
3 ansible.tower     3.8.3       False contained /usr/share/ansible/collections/ansible_collections/ansible/tower/
4 ansible.utils     2.2.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/utils/
5 ansible.windows   1.5.0       False contained /usr/share/ansible/collections/ansible_collections/ansible/windows
6 arista.eos        2.1.2       False contained /usr/share/ansible/collections/ansible_collections/arista/eos/
```

Additional resources

- ansible-collection.
- Introduction to Ansible inventories.

5.3. REVIEW DOCUMENTATION FROM AUTOMATION CONTENT NAVIGATOR

You can review Ansible documentation for collections and plugins with the automation content navigator text-based user interface in interactive mode. automation content navigator shows collections within the current project directory and those available in the automation execution environments

Prerequisites

- A locally accessible collection or installed automation execution environments.

Procedure

1. Start automation content navigator

```
$ ansible-navigator
```

2. Review the module you are interested in. Alternately, you can type **ansible-navigator doc** to access the documentation.

```
:doc ansible.utils.ip_address
```

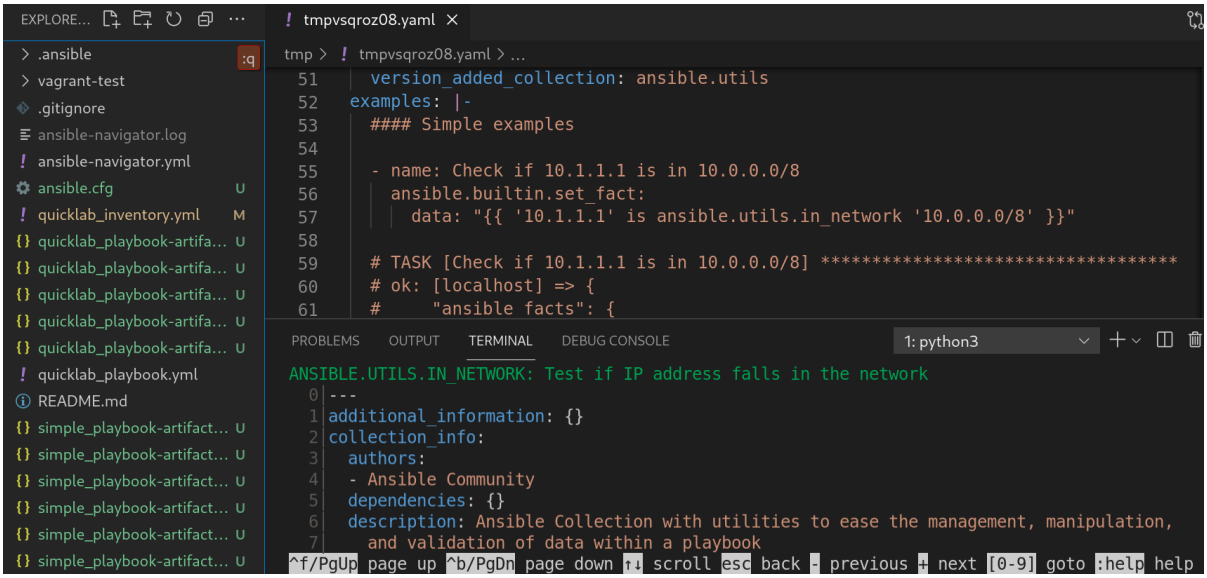
```
ANSIBLE.UTILS.IP_ADDRESS: Test if something in an IP address
 0│---
 1│additional_information: {}
 2│collection_info:
 3│  authors:
 4│  - Ansible Community
 5│  dependencies: {}
 6│  description: Ansible Collection with utilities to ease the management, manipulation,
 7│    and validation of data within a playbook
 8│  documentation: null
 9│  homepage: null
10│  issues: null
11│  license: []
12│  license_file: LICENSE
13│  name: ansible.utils
14│  namespace: ansible
15│  path:/usr/share/ansible/collections/ansible_collections/ansible/utils/
16│  readme: README.md
<... output truncated...>
```

3. Jump to the documentation examples for this module.

```
:{{ examples }}

0│
1│
2│#### Simple examples
3│
4│- name: Check if 10.1.1.1 is a valid IP address
5│  ansible.builtin.set_fact:
6│    data: "{{ '10.1.1.1' is ansible.utils.ip_address }}"
7│
8│# TASK [Check if 10.1.1.1 is a valid IP address] **********************
9│# ok: [localhost] => {
10│#     "ansible_facts": {
11│#         "data": true
12│#     },
13│#     "changed": false
14│# }
15│
```

4. Optional: open the example in your editor to copy it into a playbook.

```
:open
```



See Automation content navigator general settings for details on how to set up your editor.

Additional resources

- Collection index
- Using Ansible collections
- Building Ansible inventories

CHAPTER 6. RUNNING ANSIBLE PLAYBOOKS WITH AUTOMATION CONTENT NAVIGATOR

As a content creator, you can execute your Ansible playbooks with automation content navigator and interactively delve into the results of each play and task to verify or troubleshoot the playbook. You can also execute your Ansible playbooks inside an execution environment and without an execution environment to compare and troubleshoot any problems.

6.1. EXECUTING A PLAYBOOK FROM AUTOMATION CONTENT NAVIGATOR

You can run Ansible playbooks with the automation content navigator text-based user interface to follow the execution of the tasks and delve into the results of each task.

Prerequisites

- A playbook.
- A valid inventory file if not using **localhost** or an inventory plugin.

Procedure

1. Start automation content navigator

```
$ ansible-navigator
```

2. Run the playbook.

```
$ :run
```

3. Optional: type **ansible-navigator run simple-playbook.yml -i inventory.yml** to run the playbook.

4. Verify or add the inventory and any other command line parameters.

```
INVENTORY OR PLAYBOOK NOT FOUND, PLEASE CONFIRM THE FOLLOWING
──────────────────────────────────────────────────────────────────────────────
──────────────────────

  Path to playbook: /home/ansible-navigator_demo/simple_playbook.yml
  Inventory source: /home/ansible-navigator-demo/inventory.yml
 Additional command line parameters: Please provide a value (optional)
──────────────────────────────────────────────────────────────────────────────
──────────────────────

                                  Submit Cancel
```

5. Tab to **Submit** and hit Enter. You should see the tasks executing.

```
  PLAY NAME     OK  CHANGED    UNREACHABLE      FAILED    SKIPPED    IGNORED    IN PROGRESS      TASK COUNT          PROGRESS
0|all            6        0              0           6          0          0              0              12          COMPLETE
```

6. Type the number next to a play to step into the play results, or type **:<number>** for numbers above 9.

```
   RESULT   HOST      NUMBER   CHANGED   TASK                          TASK ACTION                          DURATION
 3 OK       node-0         3     False   Gathering Facts               gather_facts                               1s
 4 OK       node-1         4     False   Gathering Facts               gather_facts                               1s
 5 OK       node-2         5     False   Gathering Facts               gather_facts                               1s
 6 FAILED   main-0         6     False   Gather the package facts      ansible.builtin.package_facts              1s
 7 FAILED   infra-0        7     False   Gather the package facts      ansible.builtin.package_facts              1s
 8 FAILED   lb-0           8     False   Gather the package facts      ansible.builtin.package_facts              1s
 9 FAILED   node-0         9     False   Gather the package facts      ansible.builtin.package_facts              1s
10 FAILED   node-1        10     False   Gather the package facts      ansible.builtin.package_facts              1s
11 FAILED   node-2        11     False   Gather the package facts      ansible.builtin.package_facts              0s
```

Notice failed tasks show up in red if you have colors enabled for automation content navigator.

7. Type the number next to a task to review the task results, or type **:<number>** for numbers above 9.

```
PLAY [all:6] *******************************************************************************************************
TASK [Gather the package facts] ************************************************************************************
FAILED: [main-0] Could not detect a supported package manager from the following list: ['apt', 'apk', 'rpm', 'portage', 'pkg'
 0 ---
 1 duration: 1.339719
 2 end: '2021-06-10T18:52:32.968770'
 3 event_loop: null
 4 host: main-0
 5 ignore_errors: null
 6 play: all
```

8. Optional: type **:doc** bring up the documentation for the module or plugin used in the task to aid in troubleshooting.

```
ANSIBLE.BUILTIN.PACKAGE_FACTS (MODULE)
 0 ---
 1 doc:
 2   author:
 3   - Matthew Jones (@matburt)
 4   - Brian Coca (@bcoca)
 5   - Adam Miller (@maxamillion)
 6   collection: ansible.builtin
 7   description:
 8   - Return information about installed packages as facts.
<... output omitted ...>
11   module: package_facts
12   notes:
13   - Supports C(check_mode).
14   options:
15     manager:
16       choices:
17       - auto
18       - rpm
19       - apt
20       - portage
21       - pkg
22       - pacman

<... output truncated ...>
```

Additional resources

- ansible-playbook
- Ansible playbooks

6.2. REVIEWING PLAYBOOK RESULTS WITH AN AUTOMATION CONTENT NAVIGATOR ARTIFACT FILE

Automation content navigator saves the results of the playbook run in a JSON artifact file. You can use this file to share the playbook results with someone else, save it for security or compliance reasons, or review and troubleshoot later. You only need the artifact file to review the playbook run. You do not need access to the playbook itself or inventory access.

Prerequisites

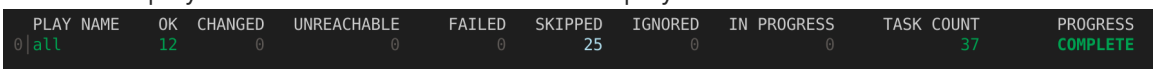
- A automation content navigator artifact JSON file from a playbook run.

Procedure

- Start automation content navigator with the artifact file.

```
$ ansible-navigator replay simple_playbook_artifact.json
```

1. Review the playbook results that match when the playbook ran.



You can now type the number next to the plays and tasks to step into each to review the results, as you would after executing the playbook.

Additional resources

- ansible-playbook
- Ansible playbooks

CHAPTER 7. REVIEWING YOUR ANSIBLE CONFIGURATION WITH AUTOMATION CONTENT NAVIGATOR

As a content creator, you can review your Ansible configuration with automation content navigator and interactively delve into settings.

7.1. REVIEWING YOUR ANSIBLE CONFIGURATION FROM AUTOMATION CONTENT NAVIGATOR

You can review your Ansible configuration with the automation content navigator text-based user interface in interactive mode and delve into the settings. Automation content navigator pulls in the results from an accessible Ansible configuration file, or returns the defaults if no configuration file is present.

Prerequisites

- You have authenticated to the Red Hat registry if you need to access additional automation execution environments. See Red Hat Container Registry Authentication for details.

Procedure

1. Start automation content navigator

```
$ ansible-navigator
```

   Optional: type **ansible-navigator config** from the command line to access the Ansible configuration settings.

2. Review the Ansible configuration.

```
:config
```

   Some values reflect settings from within the automation execution environments needed for the automation execution environments to function. These display as non-default settings you cannot set in your Ansible configuration file.

3. Type the number corresponding to the setting you want to delve into, or type **:<number>** for numbers greater than 9.

```
ANSIBLE COW ACCEPTLIST (current: ['bud-frogs', 'bunny', 'cheese']) (default:
0 ---
1 current:
2 - bud-frogs
3 - bunny
4 - cheese
5 default:
```

```
6 - bud-frogs
7 - bunny
8 - cheese
9 - daemon
```

The output shows the current **setting** as well as the **default**. Note the **source** in this example is **env** since the setting comes from the automation execution environments.

Verification

- Review the configuration output.

```
  OPTION                    DEFAULT SOURCE                  VIA                     CURRENT VALUE
0 ACTION_WARNINGS              True default                 default                 True
1 AGNOSTIC_BECOME_PROMPT       True default                 default                 True
2 ALLOW_WORLD_READABLE_TMPFI   True default                 default                 False
3 ANSIBLE_CONNECTION_PATH      True default                 default                 None
4 ANSIBLE_COW_ACCEPTLIST      False /home/samccann/ansible-nav/home/samccann/ansible-nav['bud-frogs', 'bunny',
5 ANSIBLE_COW_PATH             True default                 default                 None
6 ANSIBLE_COW_SELECTION        True default                 default                 default
7 ANSIBLE_FORCE_COLOR          True default                 default                 False
```

Additional resources

- ansible-config.
- Introduction to Ansible configuration .

CHAPTER 8. AUTOMATION CONTENT NAVIGATOR CONFIGURATION SETTINGS

As a content creator, you can configure automation content navigator to suit your development environment.

8.1. CREATING AN AUTOMATION CONTENT NAVIGATOR SETTINGS FILE

You can alter the default automation content navigator settings through:

- The command line
- Within a settings file
- As an environment variable

Automation content navigator checks for a settings file in the following order and uses the first match:

- **ANSIBLE_NAVIGATOR_CONFIG** - The settings file path environment variable if set.
- **./ansible-navigator.<ext>** - The settings file within the current project directory, with no dot in the file name.
- \~/**.ansible-navigator.<ext>** - Your home directory, with a dot in the file name.

Consider the following when you create an automation content navigator settings file:

- The settings file can be in **JSON** or **YAML** format.
- For settings in **JSON** format, the extension must be **.json**.
- For settings in **YAML** format, the extension must be **.yml** or **.yaml**.
- The project and home directories can only contain one settings file each.
- If automation content navigator finds more than one settings file in either directory, it results in an error.

You can copy the example settings file below into one of those paths to start your **ansible-navigator** settings file.

```
---
ansible-navigator:
#   ansible:
#     config: /tmp/ansible.cfg
#     cmdline: "--forks 15"
#     inventories:
#     - /tmp/test_inventory.yml
#     playbook: /tmp/test_playbook.yml
#   ansible-runner:
#     artifact-dir: /tmp/test1
#     rotate-artifacts-count: 10
#     timeout: 300
#   app: run
```

```
#   collection-doc-cache-path: /tmp/cache.db
#   color:
#     enable: False
#     osc4: False
#   editor:
#     command: vim_from_setting
#     console: False
#   documentation:
#     plugin:
#       name: shell
#       type: become
#   execution-environment:
#     container-engine: podman
#     enabled: False
#     environment-variables:
#       pass:
#         - ONE
#         - TWO
#         - THREE
#       set:
#         KEY1: VALUE1
#         KEY2: VALUE2
#         KEY3: VALUE3
#     image: test_image:latest
#     pull-policy: never
#     volume-mounts:
#     - src: "/test1"
#       dest: "/test1"
#       label: "Z"
#   help-config: True
#   help-doc: True
#   help-inventory: True
#   help-playbook: False
#   inventory-columns:
#     - ansible_network_os
#     - ansible_network_cli_ssh_type
#     - ansible_connection
  logging:
#     append: False
    level: critical
#     file: /tmp/log.txt
#   mode: stdout
#   playbook-artifact:
#     enable: True
#     replay: /tmp/test_artifact.json
#     save-as: /tmp/test_artifact.json
```

8.2. AUTOMATION CONTENT NAVIGATOR GENERAL SETTINGS

The following table describes each general parameter and setting options for automation content navigator.

Table 8.1. Automation content navigator general parameters settings

Parameter	Description	Setting options
ansible-runner-artifact-dir	The directory path to store artifacts generated by ansible-runner.	**Default:** No default value set CLI: **--rad** or **--ansible-runner-artifact-dir** ENV: **ANSIBLE_NAVIGATOR_ANSIBLE_RUNNER_ARTIFACT_DIR** **Settings file:** ansible-navigator: ansible-runner: artifact-dir:
ansible-runner-rotate-artifacts-count	Keep ansible-runner artifact directories, for last n runs. If set to 0, artifact directories are not deleted.	**Default:** No default value set CLI: **--rac** or **--ansible-runner-rotate-artifacts-count** ENV: **ANSIBLE_NAVIGATOR_ANSIBLE_RUNNER_ROTATE_ARTIFACTS_COUNT** **Settings file:** ansible-navigator: ansible-runner: rotate-artifacts-count:
ansible-runner-timeout	The timeout value after which **ansible-runner** force stops the execution.	**Default:** No default value set CLI: **--rt** or **--ansible-runner-timeout** ENV: **ANSIBLE_NAVIGATOR_ANSIBLE_RUNNER_TIMEOUT** **Settings file:** ansible-navigator: ansible-runner: timeout:

Parameter	Description	Setting options

app	Entry point for automation content navigator.	Choices: **collections**, **config**, **doc**, **images**, **inventory**, **replay**, **run** or **welcome**
		
		Default: **welcome**
		
		CLI example: **ansible-navigator collections**
		
		ENV: **ANSIBLE_NAVIGATOR_APP**
		
		Settings file:
		
		`ansible-navigator:`
		`  app:`

cmdline	Extra parameters passed to the corresponding command.	**Default**: No default value
		
		CLI: positional
		
		ENV: **ANSIBLE_NAVIGATOR_CMDLINE**
		
		Settings file:
		
		`ansible-navigator:`
		`  ansible:`
		`  cmdline:`

collection-doc-cache-path	The path to the collection doc cache.	**Default**: **$HOME/.cache/ansible-navigator/collection_doc_cache.db**
		
		CLI: **--cdcp** or **--collection-doc-cache-path**
		
		ENV: **ANSIBLE_NAVIGATOR_COLLECTION_DOC_CACHE_PATH**
		
		Settings file:
		
		`ansible-navigator:`
		`  collection-doc-cache-path:`

Parameter	Description	Setting options
container-engine	Specify the container engine (**auto**=**podman** then **docker**).	**Choices: auto**, **podman** or **docker** **Default: auto** **CLI: --ce** or **--container-engine** **ENV: ANSIBLE_NAVIGATOR_CONTAINER_ENGINE** **Settings file:** ansible-navigator: execution-environment: container-engine:
display-color	Enable the use of color in the display.	**Choices: True** or **False** **Default: True** **CLI: --dc** or **--display-color** **ENV: NO_COLOR** **Settings file:** ansible-navigator: color: enable:
editor-command	Specify the editor used by automation content navigator	Default:* vi +{line_number} {filename} **CLI: --ecmd** or **--editor-command** **ENV: ANSIBLE_NAVIGATOR_EDITOR_COMMAND** **Settings file:** ansible-navigator: editor: command:

Parameter	Description	Setting options
editor-console	Specify if the editor is console based.	**Choices: True** or **False** **Default: True** CLI: **--econ** or **--editor-console** ENV: **ANSIBLE_NAVIGATOR_EDITOR_CONSOLE** **Settings file:** ansible-navigator: editor: console:
execution-environment	Enable or disable the use of an automation execution environment.	**Choices: True** or **False** **Default: True** CLI: **--ee** or **--execution-environment** ENV:* **ANSIBLE_NAVIGATOR_EXECUTION_ENVIRONMENT** **Settings file:** ansible-navigator: execution-environment: enabled:

Parameter	Description	Setting options
execution-environment-image	Specify the name of the automation execution environment image.	**Default:** **quay.io/ansible/ansible-runner:devel** CLI: **--eei** or **--execution-environment-image** ENV: **ANSIBLE_NAVIGATOR_EXECUTION_ENVIRONMENT_IMAGE** **Settings file:** ansible-navigator: execution-environment: image:
execution-environment-volume-mounts	Specify volume to be bind mounted within an automation execution environment (**--eev /home/user/test:/home/user/test:Z**)	**Default:** No default value set CLI: **--eev** or **--execution-environment-volume-mounts** ENV: **ANSIBLE_NAVIGATOR_EXECUTION_ENVIRONMENT_VOLUME_MOUNTS** **Settings file:** ansible-navigator: execution-environment: volume-mounts:
log-append	Specify if log messages should be appended to an existing log file, otherwise a new log file is created per session.	**Choices:** **True** or **False** **Default:** True CLI: **--la** or **--log-append** ENV: **ANSIBLE_NAVIGATOR_LOG_APPEND** **Settings file:** ansible-navigator: logging: append:

Parameter	Description	Setting options
log-file	Specify the full path for the automation content navigator log file.	**Default: $PWD/ansible-navigator.log** **CLI: --lf** or **--log-file** **ENV: ANSIBLE_NAVIGATOR_LOG_FILE** **Settings file:** ansible-navigator: logging: file:
log-level	Specify the automation content navigator log level.	**Choices: debug**, **info**, **warning**, **error** or **critical** **Default: warning** **CLI: --ll** or **--log-level** **ENV: ANSIBLE_NAVIGATOR_LOG_LEVEL** **Settings file:** ansible-navigator: logging: level:
mode	Specify the user-interface mode.	**Choices: stdout** or **interactive** **Default: interactive** **CLI: -m** or **--mode** **ENV: ANSIBLE_NAVIGATOR_MODE** **Settings file:** ansible-navigator: mode:

Parameter	Description	Setting options

osc4	Enable or disable terminal color changing support with OSC 4.	**Choices:** **True** or **False**
		
		Default: **True**
		
		CLI: **--osc4** or **--osc4**
		
		ENV: **ANSIBLE_NAVIGATOR_OSC4**
		
		Settings file:
		
		`ansible-navigator:`
		`  color:`
		`  osc4:`

pass-environment-variable	Specify an exiting environment variable to be passed through to and set within the automation execution environment (**--penv MY_VAR**)	**Default:** No default value set
		
		CLI: **--penv** or **--pass-environment-variable**
		
		ENV: **ANSIBLE_NAVIGATOR_PASS_ENVIRONMENT_VARIABLES**
		
		Settings file:
		
		`ansible-navigator:`
		`  execution-environment:`
		`  environment-variables:`
		`  pass:`

pull-policy	Specify the image pull policy.
	
	always - Always pull the image
	
	missing - Pull if not locally available
	
	never - Never pull the image
	
	tag - If the image tag is **latest** always pull the image, otherwise pull if not locally available
		Choices: **always**, **missing**, **never**, or **tag**
		
		Default: **tag**
		
		CLI: **--pp** or **--pull-policy**
		
		ENV: **ANSIBLE_NAVIGATOR_PULL_POLICY**
		
		Settings file:
		
		`ansible-navigator:`
		`  execution-environment:`
		`  pull-policy:`

Parameter	Description	Setting options
set-environment-variable	Specify an environment variable and a value to be set within the automation execution environment **(--senv MY_VAR=42**)	**Default:** No default value set CLI: **--senv** or **--set-environment-variable** ENV: **ANSIBLE_NAVIGATOR_SET_ENVIRONMENT_VARIABLES** **Settings file:** ansible-navigator: execution-environment: environment-variables: set:

8.3. AUTOMATION CONTENT NAVIGATOR CONFIG SUBCOMMAND SETTINGS

The following table describes each parameter and setting options for the automation content navigator **config** subcommand.

Table 8.2. Automation content navigator config subcommand parameters settings

Parameter	Description	Setting options
config	Specify the path to the Ansible configuration file.	**Default:** No default value set CLI: **-c** or **--config** ENV: **ANSIBLE_CONFIG** **Settings file:** ansible-navigator: ansible: config: path:

Parameter	Description	Setting options
help-config	Help options for the **ansible-config** command in **stdout** mode.	Choices:* **True** or **False** Default: **False** CLI: **--hc** or **--help-config** ENV: **ANSIBLE_NAVIGATOR_HELP_CONFIG** Settings file: ansible-navigator: help-config:

8.4. AUTOMATION CONTENT NAVIGATOR DOC SUBCOMMAND SETTINGS

The following table describes each parameter and setting options for the automation content navigator **doc** subcommand.

Table 8.3. automation content navigator doc subcommand parameters settings

Parameter	Description	Setting options
help-doc	Help options for the **ansible-doc** command in **stdout** mode.	Choices: **True** or **False** Default: **False** CLI: **--hd** or **--help-doc** ENV: **ANSIBLE_NAVIGATOR_HELP_DOC** Settings file: ansible-navigator: help-doc:

Parameter	Description	Setting options
plugin-name	Specify the plugin name.	**Default:** No default value set **CLI:** positional **ENV:** **ANSIBLE_NAVIGATOR_PLUGIN_NAME** **Settings file:** ansible-navigator: documentation: plugin: name:
plugin-type	Specify the plugin type.	**Choices:** **become**, **cache**, **callback**, **cliconf**, **connection**, **httpapi**, **inventory**, **lookup**, **module**, **netconf**, **shell**, **strategy**, or **vars** **Default:** **module** **CLI:** **-t** or **----type** **ENV:** **ANSIBLE_NAVIGATOR_PLUGIN_TYPE** **Settings file:** ansible-navigator: documentation: plugin: type:

8.5. AUTOMATION CONTENT NAVIGATOR INVENTORY SUBCOMMAND SETTINGS

The following table describes each parameter and setting options for the automation content navigator **inventory** subcommand.

Table 8.4. Automation content navigator inventory subcommand parameters settings

Parameter	Description	Setting options

Parameter	Description	Setting options

help-inventory	Help options for the **ansible-inventory** command in **stdout** mode.	**Choices:** **True** or **False**
		
		Default: **False**
		
		CLI: **--hi** or **--help-inventory**
		
		ENV: **ANSIBLE_NAVIGATOR_INVENTORY_DOC**
		
		Settings file:
		
		`ansible-navigator:`
		`  help-inventory:`

inventory	Specify an inventory file path or comma separated host list.	**Default:** no default value set
		
		CLI: **--i** or **--inventory**
		
		ENV: **ANSIBLE_NAVIGATOR_INVENTORIES**
		
		Settings file:
		
		`ansible-navigator:`
		`  inventories:`

inventory-column	Specify a host attribute to show in the inventory view.	**Default:** No default value set
		
		CLI: **--ic** or **--inventory-column**
		
		ENV:* **ANSIBLE_NAVIGATOR_INVENTORY_COLUMNS****Settings file:**
		
		`ansible-navigator:`
		`  inventory-columns:`

8.6. AUTOMATION CONTENT NAVIGATOR REPLAY SUBCOMMAND SETTINGS

The following table describes each parameter and setting options for the automation content navigator **replay** subcommand.

Table 8.5. Automation content navigator replay subcommand parameters settings

Parameter	Description	Setting options
playbook-artifact-replay	Specify the path for the playbook artifact to replay.	**Default:** No default value set **CLI:** positional **ENV:** **ANSIBLE_NAVIGATOR_PLAYBOOK_ARTIFACT_REPLAY** **Settings file:** ansible-navigator: playbook-artifact: replay:

8.7. AUTOMATION CONTENT NAVIGATOR RUN SUBCOMMAND SETTINGS

The following table describes each parameter and setting options for the automation content navigator **run** subcommand.

Table 8.6. Automation content navigator run subcommand parameters settings

Parameter	Description	Setting options
playbook-artifact-replay	Specify the path for the playbook artifact to replay.	**Default:** No default value set **CLI:** positional **ENV:** **ANSIBLE_NAVIGATOR_PLAYBOOK_ARTIFACT_REPLAY** **Settings file:** ansible-navigator: playbook-artifact: replay:

Parameter	Description	Setting options
help-playbook	Help options for the **ansible-playbook** command in **stdout** mode.	**Choices: True** or **False** **Default: False** CLI: **--hp** or **--help-playbook** ENV: **ANSIBLE_NAVIGATOR_HELP_PLAYBOOK** **Settings file:** ansible-navigator: help-playbook:
inventory	Specify an inventory file path or comma separated host list.	**Default:** no default value set CLI: **--i** or **--inventory** ENV: **ANSIBLE_NAVIGATOR_INVENTORIES** **Settings file:** ansible-navigator: inventories:
inventory-column	Specify a host attribute to show in the inventory view.	**Default:** No default value set CLI: **--ic** or **--inventory-column** ENV:* **ANSIBLE_NAVIGATOR_INVENTORY_COLUMNS****Settings file:** ansible-navigator: inventory-columns:

Parameter	Description	Setting options
playbook	Specify the playbook name.	**Default:** No default value set **CLI:** positional **ENV:** **ANSIBLE_NAVIGATOR_PLAYBOOK** **Settings file:*** ansible-navigator: ansible: playbook:
playbook-artifact-enable	Enable or disable the creation of artifacts for completed playbooks. Note: not compatible with **--mode stdout** when playbooks require user input.	**Choices:** **True** or **False** **Default:** **True** CLI: **--pae** or **--playbook-artifact-enable**ENV: **ANSIBLE_NAVIGATOR_PLAYBOOK_ARTIFACT_ENABLE**Settings file: ansible-navigator: playbook-artifact: enable:
playbook-artifact-save-as	Specify the name for artifacts created from completed playbooks.	**Default:** **{playbook_dir}/{playbook_name}-artifact-{ts_utc}.json** CLI: **--pas** or **--playbook-artifact-save-as** ENV: **ANSIBLE_NAVIGATOR_PLAYBOOK_ARTIFACT_SAVE_AS** **Settings file:** ansible-navigator: playbook-artifact: save-as:

CHAPTER 9. TROUBLESHOOTING ANSIBLE CONTENT WITH AUTOMATION CONTENT NAVIGATOR

As a content creator, you can troubleshoot your Ansible content (collections, automation execution environments, and playbooks) with automation content navigator and interactively troubleshoot the playbook. You can also compare results inside or outside an automation execution environment and troubleshoot any problems.

9.1. REVIEWING PLAYBOOK RESULTS WITH AN AUTOMATION CONTENT NAVIGATOR ARTIFACT FILE

Automation content navigator saves the results of the playbook run in a JSON artifact file. You can use this file to share the playbook results with someone else, save it for security or compliance reasons, or review and troubleshoot later. You only need the artifact file to review the playbook run. You do not need access to the playbook itself or inventory access.

Prerequisites

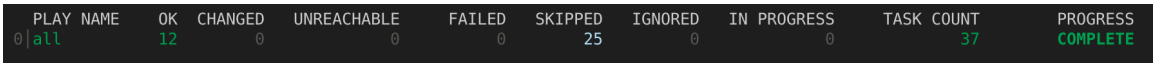
- A automation content navigator artifact JSON file from a playbook run.

Procedure

- Start automation content navigator with the artifact file.

```
$ ansible-navigator replay simple_playbook_artifact.json
```

1. Review the playbook results that match when the playbook ran.



You can now type the number next to the plays and tasks to step into each to review the results, as you would after executing the playbook.

Additional resources

- ansible-playbook
- Ansible playbooks

9.2. FREQUENTLY ASKED QUESTIONS ABOUT AUTOMATION CONTENT NAVIGATOR

Use the following automation content navigator FAQ to help you troubleshoot problems in your environment.

Where should the ansible.cfg file go when using an automation execution environment?

The easiest place to have the **ansible.cfg** file is in the project directory next to the playbook. The playbook directory is automatically mounted in the automation execution environment and automation content navigator finds the **ansible.cfg** file there. If the **ansible.cfg** file is in another directory, set the **ANSIBLE_CONFIG** variable, and specify the directory as a custom volume mount. (See automation content navigator settings for **execution-environment-volume-mounts**)

Where should the ansible.cfg file go when not using an automation execution environment?

Ansible looks for the **ansible.cfg** in the typical locations when not using an automation execution environment. See Ansible configuration settings for details.

Where should Ansible collections be placed when using an automation execution environment?

The easiest place to have Ansible collections is in the project directory, in a playbook adjacent collections directory (for example, **ansible-galaxy collections install ansible.utils -p ./collections**). The playbook directory is automatically mounted in the automation execution environment and automation content navigator finds the collections there. Another option is to build the collections into an automation execution environment using Ansible Builder. This helps content creators author playbooks that are production ready, since automation controller supports playbook adjacent collection directories. If the collections are in another directory, set the **ANSIBLE_COLLECTIONS_PATHS** variable and configure a custom volume mount for the directory. (See Automation content navigator general settings for **execution-environment-volume-mounts**).

Where should Ansible collections be placed when not using an automation execution environment?

When not using an automation execution environment, Ansible looks in the default locations for collections. See the Using Ansible collections guide.

Why does the playbook hang when vars_prompt or pause/prompt is used?

By default, automation content navigator runs the playbook in the same manner that automation controller runs the playbook. This helps content creators author playbooks that are production ready. If you cannot avoid the use of **vars_prompt** or **pause\prompt**, disabling **playbook-artifact** creation causes automation content navigator to run the playbook in a manner that is compatible with **ansible-playbook** and allows for user interaction.

Why does automation content navigator change the terminal colors or look terrible?

Automation content navigator queries the terminal for its OSC4 compatibility. OSC4, 10, 11, 104, 110, 111 indicate the terminal supports color changing and reverting. It is possible that the terminal is misrepresenting its ability. You can disable OSC4 detection by setting **--osc4 false**. (See Automation content navigator general settings for how to handle this with an environment variable or in the settings file).

How can I change the colors used by automation content navigator?

Use **--osc4 false** to force automation content navigator to use the terminal defined colors. (See Automation content navigator general settings for how to handle this with an environment variable or in the settings file).

What is with all these site-artifact-2021-06-02T16:02:33.911259+00:00.json files in the playbook directory?

Automation content navigator creates a playbook artifact for every playbook run. These can be helpful for reviewing the outcome of automation after it is complete, sharing and troubleshooting with a colleague, or keeping for compliance or change-control purposes. The playbook artifact file has the detailed information about every play and task, and the **stdout** from the playbook run. You can review playbook artifacts with **ansible-navigator replay <filename>** or **:replay <filename>** while in an automation content navigator session. You can review all playbook artifacts with both **--mode stdout** and **--mode interactive**, depending on the required view. You can disable playbook artifacts writing and the default file naming convention. (See Automation content navigator general settings for how to handle this with an environment variable or in the settings file).

Why does vi open when I use :open?

Automation content navigator opens anything showing in the terminal in the default editor. The default is set to either **vi +{line_number} {filename}** or the current value of the **EDITOR** environment variable. Related to this is the **editor-console** setting which indicates if the editor is console or terminal based. Here are examples of alternate settings that might be useful:

```
# emacs
ansible-navigator:
  editor:
```

```
    command: emacs -nw +{line_number} {filename}
    console: true
```

```
# vscode
ansible-navigator:
  editor:
    command: code -g {filename}:{line_number}
    console: false
```

```
#pycharm
ansible-navigator:
  editor:
    command: charm --line {line_number} {filename}
    console: false
```

What is the order in which configuration settings are applied?

The automation content navigator configuration system pulls in settings from various sources and applies them hierarchically in the following order (where the last applied changes are the most prevalent):

1. Default internal values
2. Values from a settings file
3. Values from environment variables
4. Flags and arguments specified on the command line
5. While issuing **:** commands within the text-based user interface

Something did not work, how can I troubleshoot it?

Automation content navigator has reasonable logging messages. You can enable **debug** logging with **--log-level debug**. If you think you might have found a bug, log an issue and include the details from the log file.