
ansible-runner-role Documentation

Release 1.2.1

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TABLE OF CONTENTS:

1	User's guide	3
1.1	Introduction	4
1.2	Installation	4
1.3	Playbook	4
1.4	Debug	5
1.5	Tags	5
1.6	Tasks	6
1.7	Variables	9
1.8	Default variables	9
1.9	Best practice	10
1.10	Ansible Runner Usage Examples	10
1.11	Troubleshooting	18
2	Annotated source code	21
2.1	Tasks	21
3	Copyright	29
4	Legal Notice	31
5	Indices and tables	33

This [role](#) and the documentation is work in progress. Please feel free to [share your feedback and report issues](#). Contributions are welcome.

USER'S GUIDE

Table of Contents

- *User's guide*
 - *Introduction*
 - *Installation*
 - *Playbook*
 - *Debug*
 - *Tags*
 - *Tasks*
 - * *Ansible Runner packages*
 - *Synopsis*
 - *Example 1: Install ansible-runner in Ubuntu by pip for admin*
 - *Example 2: Install ansible-runner in FreeBSD from port*
 - *Variables*
 - *Default variables*
 - *Best practice*
 - *Ansible Runner Usage Examples*
 - * *Cron*
 - *Example 1: Run Ansible playbooks in cron*
 - * *Job events*
 - *Example 1: List artifacts' job events*
 - *Troubleshooting*
 - * *Commented issues*
 - *ANSIBLE_CALLBACK_PLUGINS in envvars is not working. #219*

1.1 Introduction

Run this role to install and configure Ansible Runner. Optionally configure cron to periodically run Ansible playbooks.

- Ansible role: `ansible_runner`
- Supported systems:
 - [FreeBSD Supported Production Releases](#)
 - [Ubuntu Supported Releases](#)
- (Requirements in future releases: `ansible_lib`)

Note:

- The utility *ansible-runner* is not part of standard Ansible installation. See [Installing Ansible Runner](#)
-

See also:

- [Ansible Runner documentation](#)
- [Ansible Runner source code](#)
- [REST API ansible-runner-service](#)

1.2 Installation

The most convenient way how to install an Ansible role is to use Ansible Galaxy CLI `ansible-galaxy`. The utility comes with the standard Ansible package and provides the user with a simple interface to the Ansible Galaxy's services. For example, take a look at the current status of the role

```
shell> ansible-galaxy info vbotka.ansible_runner
```

and install it

```
shell> ansible-galaxy install vbotka.ansible_runner
```

Install the library of tasks (for future releases)

```
shell> ansible-galaxy install vbotka.ansible_lib
```

See also:

- To install specific versions from various sources see [Installing content](#).
- Take a look at other roles `shell> ansible-galaxy search --author=vbotka`

1.3 Playbook

Below is a simple playbook that calls this role at a single host `srv.example.com` (2)


```
1 shell> cat ansible-runner.yml
2 - hosts: srv.example.com
3   gather_facts: true
4   connection: ssh
5   remote_user: admin
6   become: yes
7   become_user: root
8   become_method: sudo
9   roles:
10    - vbotka.ansible_runner
```

Note: `gather_facts: true` (3) must be set to gather facts needed to evaluate OS-specific options of the role. For example to install packages the variable `ansible_os_family` is needed to select the appropriate Ansible module.

See also:

- For details see [Connection Plugins](#) (4-5)
- See also [Understanding Privilege Escalation](#) (6-8)

1.4 Debug

To see additional debug information enable debug output in the configuration

```
ar_debug: true
```

, or set the extra variable in the command

```
shell> ansible-playbook ansible-runner.yml -e 'ar_debug=true'
```

Note: The debug output of this role is optimized for the **yaml** callback plugin. Set this plugin for example in the environment `shell> export ANSIBLE_STDOUT_CALLBACK=yaml`.

See also:

- [Playbook Debugger](#)

1.5 Tags

The tags provide the user with a very useful tool to run selected tasks of the role. To see what tags are available list the tags of the role with the command

```
shell> ansible-playbook ansible-runner.yml --list-tags

playbook: ansible-runner.yml

play #1 (srv.example.com): srv.example.com TAGS: []
TASK TAGS: [always, ar_config, ar_debug, ar_links, ar_packages, ar_vars]
```

For example, display the list of the variables and their values with the tag `ar_debug` (when the debug is enabled `ar_debug: true`)

```
shell> ansible-playbook ansible-runner.yml -t ar_debug
```

See what packages will be installed

```
shell> ansible-playbook ansible-runner.yml -t ar_packages --check
```

Install packages and exit the play

```
shell> ansible-playbook ansible-runner.yml -t ar_packages
```

1.6 Tasks

Test single tasks at single remote host `test_01`. Create a playbook

```
shell> cat ansible.yml
- hosts: test_01
  become: true
  roles:
    - vbotka.ansible_runner
```

Customize configuration in `host_vars/test_01/ar-*.yaml` and check the syntax

```
shell> ansible-playbook ansible-runner.yml --syntax-check
```

Then dry-run the selected task and see what will be changed. Replace `<tag>` with valid tag.

```
shell> ansible-playbook ansible-runner.yml -t <tag> --check --diff
```

When all seems to be ready run the command. Run the command twice and make sure the playbook and the configuration is idempotent

```
shell> ansible-playbook ansible-runner.yml -t <tag>
```

1.6.1 Ansible Runner packages

Synopsis

`ansible-runner` can be installed by `pip` or from distribution's packages, and ports.

See also:

- Annotated Source code [packages.yml](#)

Example 1: Install ansible-runner in Ubuntu by pip for admin

Create a playbook

```
shell> ansible-runner.yml
- hosts: test_01
  become: true
  roles:
    - vbotka.ansible_runner
```

Create *host_vars/test_01/ansible-runner.yml*

```
shell> cat host_vars/test_01/ansible-runner.yml
ar_install: false
ar_pip_install: true
ar_debug: false
ar_owner: admin
```

Install ansible-runner

```
shell> ansible-playbook ansible-runner.yml -e "ar_install=true"
...
TASK [vbotka.ansible_runner : packages: Install Ansible Runner pip packages for_
↪admin]
ok: [test_01] => (item={'name': 'ansible-runner'})
```

Show ansible-runner package installed by pip for admin

```
shell> whoami
admin

shell> pip list | grep ansible-runner
ansible-runner      1.4.6
```

Example 2: Install ansible-runner in FreeBSD from port

Create a playbook

```
shell> ansible-runner.yml
- hosts: test_01
  become: true
  roles:
    - vbotka.ansible_runner
```

Create *host_vars/test_01/ansible-runner.yml*

```
shell> cat host_vars/test_01/ansible-runner.yml
<TBD>
```

Install ansible-runner

```
shell> ansible-playbook ansible-runner.yml -e "ar_install=true"
<TBD>
...
TASK [vbotka.ansible_runner : packages: Install Ansible Runner pip packages for_
↪admin]
ok: [test_01] => (item={'name': 'ansible-runner'})
```

Show ansible-runner package installed by pip for admin

```
shell> whoami
<TBD>

shell> which ansible-runner
ansible-runner          1.4.6
```

Example 1: Install ansible-runner in Ubuntu by pip for admin

Create a playbook

```
shell> ansible-runner.yml
- hosts: test_01
  become: true
  roles:
    - vbotka.ansible_runner
```

Create *host_vars/test_01/ansible-runner.yml*

```
shell> cat host_vars/test_01/ansible-runner.yml
ar_install: false
ar_pip_install: true
ar_debug: false
ar_owner: admin
```

Install ansible-runner

```
shell> ansible-playbook ansible-runner.yml -e "ar_install=true"
...
TASK [vbotka.ansible_runner : packages: Install Ansible Runner pip packages for_
↪admin]
ok: [test_01] => (item={'name': 'ansible-runner'})
```

Show ansible-runner package installed by pip for admin

```
shell> whoami
admin

shell> pip list | grep ansible-runner
ansible-runner          1.4.6
```

Example 2: Install ansible-runner in FreeBSD from port

Create a playbook

```
shell> ansible-runner.yml
- hosts: test_01
  become: true
  roles:
    - vbotka.ansible_runner
```

Create *host_vars/test_01/ansible-runner.yml*

```
shell> cat host_vars/test_01/ansible-runner.yml
<TBD>
```

Install ansible-runner

```
shell> ansible-playbook ansible-runner.yml -e "ar_install=true"
<TBD>
...
TASK [vbotka.ansible_runner : packages: Install Ansible Runner pip packages for_
↪admin]
ok: [test_01] => (item={'name': 'ansible-runner'})
```

Show ansible-runner package installed by pip for admin

```
shell> whoami
<TBD>

shell> which ansible-runner
ansible-runner          1.4.6
```

1.7 Variables

In this chapter we describe role's default variables stored in the directory **defaults**.

See also:

- Ansible variable precedence: Where should I put a variable?

1.8 Default variables

<TBD>

[defaults/main.yml]

```
1  ---
2  # defaults ansible_runner
3
4  ar_install: true
5  ar_debug: false
6  ar_backup_conf: false
7
8  # Install distro packages or pip
9  # false - distro packages, true - pip
10 # ar_pip_install: false           # OS specific variable see vars/defaults
11
12 # FreeBSD
13 freebsd_install_retries: 10
14 freebsd_install_delay: 5
15 freebsd_install_method: "packages"
16 # freebsd_install_method: "ports"
17 freebsd_use_packages: true
18
19 # Linux
20 linux_install_retries: 10
21 linux_install_delay: 5
22
23 # Python
```

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```

24 pip_install_retries: 10
25 pip_install_delay: 5
26 # pip_extraargs: ""                                # Optional
27
28 # pip package dependent
29 # ar_pip_executable: "pip3"                        # OS specific variable see vars/defaults
30 # ar_pip_requirements: []                          # Optional
31
32 # Configuration
33 ar_config: []
34
35 # Links
36 # ar_links: [] # OS specific variable see vars/defaults
37
38 # EOF
39 ...

```

1.9 Best practice

Display the variables for debug if needed. Then disable this task `ar_debug`: `false` to speedup the playbook

```
shell> ansible-playbook ansible-runner.yml -t ar_debug
```

Install packages Then disable this task `ar_install`: `false` to speedup the playbook

```
shell> ansible-playbook ansible-runner.yml -t ar_packages \
-e 'ar_install=true'
```

The role and the configuration data in the examples are idempotent. Once the installation and configuration have passed there should be no changes reported by *ansible-playbook* when running the playbook repeatedly. Disable debug, and install to speedup the playbook

```
shell> ansible-playbook ansible-runner.yml
```

1.10 Ansible Runner Usage Examples

1.10.1 Cron

Example 1: Run Ansible playbooks in cron

- *Run ssh-agent*
- *Wrapper ansible-runner*
- *Command for cron*
- *Crontab*
- *Email sent by cron*

- *Project*
- *Playbook*
- *Artifacts*

Run ssh-agent

ssh-agent is needed to provide the ssh connection plugin with the password to the private key, when used. The script below is executed by the command interpreter for login shells

```

1 cntlr> cat /home/admin/.profile
2 if [ -n "$BASH_VERSION" ]; then
3     if [ -f "$HOME/.bashrc" ]; then
4         . "$HOME/.bashrc"
5     fi
6     if [ -f "$HOME/.bashrc_ssh" ]; then
7         . "$HOME/.bashrc_ssh"
8     fi
9 fi
10 if [ -d "$HOME/bin" ] ; then
11     PATH="$HOME/bin:$PATH"
12 fi

```

and will start ssh-agent on login and prepare `SSH_ENV` (5)

```

1 cntlr> cat /home/admin/.bashrc_ssh
2 SSH_ENV="$HOME/.ssh/environment"
3 function start_agent {
4     echo "Initialising new SSH agent..."
5     /usr/bin/ssh-agent | sed 's/^echo/#echo/' > "${SSH_ENV}"
6     echo succeeded
7     chmod 600 "${SSH_ENV}"
8     . "${SSH_ENV}" > /dev/null
9     /usr/bin/ssh-add;
10 }
11 if [ -f "${SSH_ENV}" ]; then
12     . "${SSH_ENV}" > /dev/null
13     #ps ${SSH_AGENT_PID} doesn't work under cywgin
14     ps -ef | grep ${SSH_AGENT_PID} | grep ssh-agent$ > /dev/null || {
15         start_agent;
16     }
17 else
18     start_agent;
19 fi

```

Example of `.ssh/environment` created by `ssh-agent`

```

cntlr> cat /home/admin/.ssh/environment
SSH_AUTH_SOCK=/tmp/ssh-8fUkZ7qOzVPs/agent.5214; export SSH_AUTH_SOCK;
SSH_AGENT_PID=5216; export SSH_AGENT_PID;
#echo Agent pid 5216;

```

See also:

- Start ssh-agent on login - stackoverflow.com

- SSH Quick-Start Guide - FreeBSD handbook
- Single Sign-On using SSH - ssh.com

Wrapper ansible-runner

Wrapper of *ansible-runner* will source *.ssh/environment* (9) and run the *playbook* from the *project* (10)

```

1  cntrlr> cat /home/admin/bin/arwrapper.bash
2  #!/bin/bash
3  runner=$HOME/bin/ansible-runner
4  project=$HOME/.ansible/runner/$2
5  playbook=${3:-all.yml}
6  case "$1" in
7      run)
8          echo $(date '+%Y-%m-%d %H:%M:%S') $0
9          source $HOME/.ssh/environment
10         $runner run $project -p $playbook
11         ;;
12     clean)
13         rm -rf $project/artifacts
14         ;;
15     *)
16         printf "$0: run|clean project [playbook]\n"
17         exit 1
18         ;;
19 esac
20 exit

```

Command for cron

The script below will use *arwrapper.sh* (9) to run the *playbook pb-01.yml* (7) in the projects *test_01*, *test_02*, and *test_03* (6). If the command (9) succeeds the script will print *[OK]* report (14). If you don't want to receive email on success remove this line and optionally enable the cleaning of the artifacts (13)

```

1  cntrlr> cat /home/admin/bin/ansible-cron-test.bash
2  #!/bin/bash
3  marker=$(printf "%80s" | sed "s/ /.g")
4  rc=0
5  cmd=$HOME/bin/arwrapper.bash
6  projects="test_01 test_02 test_03"
7  playbook=pb-01.yml
8  for project in ${projects[@]}; do
9      out=$( $cmd run $project $playbook 2>&1)
10     if [ $? -eq 0 ]; then
11         printf "[OK] $project $playbook PASSED\n"
12         # $cmd clean $project
13     else
14         printf "[ERR] $out\n$marker\n"
15         rc=1
16     fi
17 done
18 exit $rc

```


Crontab

Schedule the script in *cron*

```
cntrlr> whoami
admin
cntrlr> crontab -l
MAILTO=admin
#Ansible: Ansible runner daily test
50 20 * * * $HOME/bin/ansible-cron-test.bash
```

See also:

- Ansible role’s task [FreeBSD postinstall cron.yml](#)
- Ansible role’s task [Linux postinstall cron.yml](#)

Email sent by cron

In our case the */etc/aliases* redirect the emails for *root* to the user *admin*. Cron will report the result of the script *ansible-cron-test.bash*. If you want to receive email on a failure only remove the *[OK]* report from the script and optionally clean the *artifacts*. The *artifacts* will be available for a review if the script fails

```
Date: Tue,  7 Jul 2020 20:50:06 +0200 (CEST)
From: Cron Daemon <root@cntrlr.example.com>
To: admin@cntrlr.example.com
Subject: Cron <admin@cntrlr> $HOME/bin/ansible-cron-test.bash

[OK] test_01 pb-01.yml PASSED
[OK] test_02 pb-01.yml PASSED
[OK] test_03 pb-01.yml PASSED
```

Project

Example of the project’s directory without the artifacts. The artifacts will be created by *ansible-runner*

```
cntrlr> tree /home/admin/.ansible/runner/test_01
/home/admin/.ansible/runner/test_01
├── env
├── inventory
│   └── hosts
└── project
    ├── ansible.cfg
    ├── group_vars
    ├── host_vars
    └── pb-01.yml
```

Note: It’s necessary to provide *ansible-playbook* with the *vault password* if any data were encrypted. Use *env/cmdline*. For example

```
cntrl> cat /home/admin/.ansible/runner/test_01/env/cmdline
--vault-password-file $HOME/.vault-psswd
```

See also:

- [Runner Input Directory Hierarchy](#)
- Example playbook how to create projects `pb-create-runner-private.yml`

Playbook

Example of a playbook used in the test

```
cntrlr> cat /home/admin/.ansible/runner/test_01/project/pb-01.yml
- hosts: test_01
  remote_user: admin
  gather_facts: no
  tasks:
    - debug:
        msg: TEST
```

Artifacts

Example of the project's artifacts

```
cntrl> tree /home/admin/.ansible/runner/test_01/artifacts/
/home/admin/.ansible/runner/test_01/artifacts
├── aaa5d36e-e8d4-432a-ab52-b69062c85311
│   ├── command
│   ├── fact_cache
│   ├── job_events
│   │   ├── 1-2b5c9412-f0c4-45dc-a425-5c8c29e37ec0.json
│   │   ├── 2-5ce0c5a2-1f02-cdab-8869-00000000001f.json
│   │   ├── 3-5ce0c5a2-1f02-cdab-8869-000000000021.json
│   │   ├── 4-28749e27-409a-46c4-9551-7ce80c02be83.json
│   │   ├── 5-997d90c1-6357-45c6-8df9-437c2940c74e.json
│   │   └── 6-6e41cf27-8c1e-4266-9ffb-8a54375bd4cc.json
│   ├── rc
│   ├── status
│   └── stdout
```

See also:

- [Runner Artifacts Directory Hierarchy](#)
- `ansible_lib: al_runner_events`

1.10.2 Job events

Example 1: List artifacts' job events

- *Test negative result*
- *Cron email on failure*
- *Artifacts*

- *Playbook*
- *Events*
- *Failed event(s)*

Test negative result

Let's modify the playbook so that it'll fail. For example (8)

```

1  cntrlr> cat ~/.ansible/runner/test_02/project/pb-01.yml
2  - hosts: test_02
3    remote_user: admin
4    gather_facts: no
5    tasks:
6      - debug:
7        msg: TEST
8      - command: /usr/bin/false

```

Cron email on failure

Then the cron task in the example *Cron: Example 1* will fail and *admin* will receive an email similar to this one

```

1  Date: Wed,  8 Jul 2020 13:27:07 +0200 (CEST)
2  From: Cron Daemon <root@cntrlr.example.com>
3  To: admin@cntrlr.example.com
4  Subject: Cron <admin@cntrlr> $HOME/bin/ansible-cron-test.bash
5
6  [OK] test_01 pb-01.yml PASSED
7  [ERR] 2020-07-08 13:27:03 /home/admin/bin/arwrapper.sh
8
9  PLAY [test_02] *****
10
11 TASK [debug] *****
12 ok: [test_02] => {
13   "msg": "TEST"
14 }
15
16 TASK [command] *****
17 fatal: [test_02.g2.netng.org]: FAILED! =>
18 {"changed": true,
19  "cmd": ["/usr/bin/false"],
20  "delta": "0:00:00.013809",
21  "end": "2020-07-08 +13:26:32.197207",
22  "msg": "non-zero return code",
23  "rc": 1,
24  "start": "2020-07-08 13:26:32.183398",
25  "stderr": "",
26  "stderr_lines": [],
27  "stdout": "",
28  "stdout_lines": []}
29
30 PLAY RECAP *****
31 test_02: ok=1 changed=0 unreachable=0 failed=1 skipped=0 rescued=0 ignored=0

```

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```

32 .....
33 [OK] test_03 pb-01.yml PASSED

```

Artifacts

Let's take look at the artifacts of the failed project

```

1 cntrlr> tree ~/.ansible/runner/test_02/artifacts/
2 /home/admin/.ansible/runner/test_02/artifacts/
3 └─ 0428ede5-40c2-48f9-b33d-b9d1a64609af
4     ├── command
5     ├── fact_cache
6     └── job_events
7         ├── 1-ff7d4af5-26bc-4d4c-8eac-6c75e547cb22.json
8         ├── 2-5ce0c5a2-1f02-fda4-7a07-00000000001f.json
9         ├── 3-5ce0c5a2-1f02-fda4-7a07-000000000021.json
10        ├── 4-a1e17955-d452-424d-a1c1-bb4b387fd180.json
11        ├── 5-97175f4b-9c82-4160-a17c-32a3e6d0c3ff.json
12        ├── 6-5ce0c5a2-1f02-fda4-7a07-000000000022.json
13        ├── 7-e1a3349e-199f-4ad7-969c-8680bbb1bac0.json
14        ├── 8-bb64ec8e-d1b0-4114-9093-9bbd6807b293.json
15        └── 9-72588652-8937-4eda-9aa7-b6bc443e4aa9.json
16
17     ├── rc
18     ├── status
19     └── stdout
20
21 3 directories, 13 files

```

Playbook

Prepare a playbook to help with the analysis of the artifacts. For example, the playbook below will use [Ansible library task al_runner_events.yml](#) (13) and display selected attributes (18) from the *job events*. Feel free to modify *msg* (18) and display other attributes

```

1 cntrlr> cat ar-events.yml
2 - hosts: localhost
3   gather_facts: false
4
5   vars:
6     my_home: "{{ lookup('env','HOME') }}"
7     al_runner_events_dir: "{{ my_home ~
8     '~/.ansible/runner/test_02/artifacts/0428ede5-40c2-48f9-b33d-b9d1a64609af/job_
9     events' }}"
10
11   tasks:
12     - include_role:
13       name: vbotka.ansible_lib
14       tasks_from: al_runner_events
15       apply:
16         tags: always
17     - debug:
18       msg: "{{ item.counter }} {{ item.event }}"

```

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```

19     loop: "{{ al_runner_events_list|sort(attribute='counter') }}"
20     loop_control:
21       label: "{{ item.counter }}"
22     tags: events
23   - debug:
24     msg: "{{ item.stdout }}"
25     loop: "{{ al_runner_events_list|sort(attribute='counter') }}"
26     loop_control:
27       label: "{{ item.counter }}"
28     when: item.event == 'runner_on_failed'
29     tags: failed

```

See also:

- [Examples of ansible-runner](#)

Events

The play below gives the list of the events

```

cntrlr> ansible-playbook ar-events.yml -t events | grep msg\:
"msg": "1 playbook_on_start"
"msg": "2 playbook_on_play_start"
"msg": "3 playbook_on_task_start"
"msg": "4 runner_on_start"
"msg": "5 runner_on_ok"
"msg": "6 playbook_on_task_start"
"msg": "7 runner_on_start"
"msg": "8 runner_on_failed"
"msg": "9 playbook_on_stats"

```

Failed event(s)

The next play displays the details of the failed event(s)

```

cntrlr> echo -e $(ansible-playbook ar-events.yml -t failed | grep msg\:):
"msg": "fatal: [test_02]: FAILED! =>{
  \"changed\": true,
  \"cmd\": [\"/usr/bin/false\"],
  \"delta\": \"0:00:00.014716\",
  \"end\": \"2020-07-08 17:05:56.104764\",
  \"msg\": \"non-zero return code\",
  \"rc\": 1,
  \"start\": \"2020-07-08 17:05:56.090048\",
  \"stderr\": \"\",
  \"stderr_lines\": [],
  \"stdout\": \"\",
  \"stdout_lines\": []}"

```

1.11 Troubleshooting

1.11.1 Commented issues

There are [reported issues](#) at GitHub. Some of them influence *ansible-runner* in an unexpected and undocumented ways. See the commented issues to avoid unnecessary confusion and investigation looking for the difference between a bug and a feature. Check with the links to see the issues' current status.

- *ANSIBLE_CALLBACK_PLUGINS in envvars is not working. #219*

ANSIBLE_CALLBACK_PLUGINS in envvars is not working. #219

- Updated: July,9 2020
- Status: Closed without fix Aug 2019

It's not possible to change Ansible callback plugin. *ansible-runner* ignores environment variable `ANSIBLE_STDOUT_CALLBACK` and uses hardwired callback plugins (2,4). See [runner_config.py](#)

```

1 if 'AD_HOC_COMMAND_ID' in self.env:
2     self.env['ANSIBLE_STDOUT_CALLBACK'] = 'minimal'
3 else:
4     self.env['ANSIBLE_STDOUT_CALLBACK'] = 'awx_display'
```

To test it, set the environment variables of the project *test_02*

```

shell> cat ~/.ansible/runner/test_02/env/envvars
---
MY_TEST_VAR: my-test-var
ANSIBLE_STDOUT_CALLBACK: actionable
```

Prepare a playbook

```

shell> cat pb-02.yml
- hosts: test_02
  remote_user: admin
  gather_facts: true
  tasks:
    - debug:
        msg: "HOME [{{ lookup('env', 'HOME') }}"
    - debug:
        msg: "MY_TEST_VAR [{{ lookup('env', 'MY_TEST_VAR') }}"
    - debug:
        msg: "ANSIBLE_STDOUT_CALLBACK [{{ lookup('env', 'ANSIBLE_STDOUT_CALLBACK') }}"
```

and test it

```

shell> ansible-runner --version
1.4.6

shell> ansible-runner run ~/.ansible/runner/test_02 -p pb-02.yml

TASK [debug] *****
```

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```
ok: [test_02] => {
  "msg": "HOME [/home/admin]"
}

TASK [debug] *****
ok: [test_02] => {
  "msg": "MY_TEST_VAR [my-test-var]"
}

TASK [debug] *****
ok: [test_02] => {
  "msg": "ANSIBLE_STDOUT_CALLBACK [awx_display]"
}
```


ANNOTATED SOURCE CODE

Table of Contents

- *Annotated source code*
 - *Tasks*
 - * *main.yml*
 - * *config.yml*
 - * *debug.yml*
 - * *links.yml*
 - * *packages.yml*
 - * *vars.yml*

2.1 Tasks

2.1.1 main.yml

Synopsis: Tasks of the playbook.

Description of the task.

[main.yml]

```
1 ---
2 # tasks for ansible_runner
3
4 - import_tasks: vars.yml
5   tags: [ar_vars, always]
6
7 - import_tasks: debug.yml
8   when: ar_debug|bool
9   tags: [ar_debug, always]
10
11 - import_tasks: packages.yml
12   when: ar_install|bool
13   tags: ar_packages
14
```

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```

15 - import_tasks: links.yml
16   tags: ar_links
17
18 - import_tasks: config.yml
19   tags: ar_config
20
21 # EOF
22 ...

```

2.1.2 config.yml

Synopsis: Configure config.

Description of the task.

[config.yml]

```

1 ---
2
3 - name: "config: configure ansible-runner"
4   debug:
5     msg: No config
6     when: ar_debug|bool
7
8 # EOF
9 ...

```

2.1.3 debug.yml

Synopsis: Configure debug.

Description of the task.

[debug.yml]

```

1 ---
2
3 - name: "debug: Ansible Runner"
4   vars:
5     msg: |
6       ansible_os_family [{{ ansible_os_family }}]
7       ansible_distribution [{{ ansible_distribution }}]
8       ansible_distribution_major_version [{{ ansible_distribution_major_version }}]
9       ansible_distribution_version [{{ ansible_distribution_version }}]
10      ansible_distribution_release [{{ ansible_distribution_release }}]
11      ansible_python_version [{{ ansible_python_version }}]
12
13      ar_install [{{ ar_install }}]
14
15      freebsd_install_method [{{ freebsd_install_method }}]
16      freebsd_use_packages [{{ freebsd_use_packages }}]
17      freebsd_install_retries [{{ freebsd_install_retries }}]
18      freebsd_install_delay [{{ freebsd_install_delay }}]
19
20      linux_install_retries [{{ linux_install_retries }}]

```

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```

21     linux_install_delay [{{ linux_install_delay }}]
22
23     pip_install_retries [{{ pip_install_retries }}]
24     pip_install_delay [{{ pip_install_delay }}]
25     pip_extraargs [{{ pip_extraargs|default('UNDEFINED') }}]
26
27     ar_pip_install [{{ ar_pip_install }}]
28     ar_pip_executable [{{ ar_pip_executable }}]
29     ar_pip_requirements [{{ pip_requirements|default('UNDEFINED') }}]
30
31     ansible_user_id [{{ ansible_user_id }}]
32
33     ar_owner [{{ ar_owner }}]
34     ar_backup_conf [{{ ar_backup_conf }}]
35
36     ar_packages
37     {{ ar_packages|to_nice_yaml }}
38     ar_links
39     {{ ar_links|to_nice_yaml }}
40
41     ar_config
42     {{ ar_config|to_nice_yaml }}
43
44     debug:
45         msg: "{{ msg.split('\n') }}"
46
47     # EOF
48     ...

```

2.1.4 links.yml

Synopsis: Configure links.

Description of the task.

[links.yml]

```

1  ---
2
3  - name: "links: Create directories for links"
4    file:
5      state: "directory"
6      dest: "{{ item.dest|dirname }}"
7      loop: "{{ ar_links }}"
8
9  - name: "links: Create links"
10   file:
11     state: "link"
12     src: "{{ item.src }}"
13     dest: "{{ item.dest }}"
14     force: "{{ item.force|default(false) }}"
15     loop: "{{ ar_links }}"
16
17   # EOF
18   ...

```

2.1.5 packages.yml

Synopsis: Configure packages.

Description of the task.

[packages.yml]

```

1  ---
2
3  # packages -----
4
5  # FreeBSD
6  - name: "packages: Install Ansible Runner FreeBSD packages"
7    block:
8      - name: "packages: Install Ansible Runner packages FreeBSD"
9        pkgng:
10          name: "{{ item.name }}"
11          loop: "{{ ar_packages }}"
12          register: result
13          until: result is succeeded
14          retries: "{{ freebsd_install_retries }}"
15          delay: "{{ freebsd_install_delay }}"
16      - name: "packages: Debug FreeBSD packages"
17        when: ar_debug|bool
18        debug:
19          var: result
20    when:
21      - not ar_pip_install
22      - ansible_os_family == "FreeBSD"
23      - freebsd_install_method|lower == "packages"
24
25  - name: "packages: Install FreeBSD ports"
26    block:
27      - name: "packages: Install Ansible Runner ports FreeBSD"
28        portinstall:
29          name: "{{ item.name }}"
30          use_packages: "{{ freebsd_use_packages }}"
31          loop: "{{ ar_packages }}"
32          register: result
33          until: result is succeeded
34          retries: "{{ freebsd_install_retries }}"
35          delay: "{{ freebsd_install_delay }}"
36      - name: "packages: Debug FreeBSD ports"
37        when: ar_debug|bool
38        debug:
39          var: result
40    when:
41      - not ar_pip_install
42      - ansible_os_family == "FreeBSD"
43      - freebsd_install_method|lower == "ports"
44
45  # Linux
46  - name: "packages: Install Ansible Runner packages Linux"
47    block:
48      - name: "packages: Install Ansible Runner packages Linux"
49        package:
50          name: "{{ item.name }}"
51          loop: "{{ ar_packages }}"

```

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```

52     register: result
53     until: result is succeeded
54     retries: "{{ linux_install_retries }}"
55     delay: "{{ linux_install_delay }}"
56 - name: "packages: Debug Linux"
57   when: ar_debug|bool
58   debug:
59     var: result
60 when:
61   - not ar_pip_install
62   - ansible_os_family == "RedHat" or ansible_os_family == "Debian"
63
64 # pip -----
65 - name: "packages: Test {{ ar_pip_executable }} exists"
66   when: ar_pip_install
67   block:
68     - name: "packages: Stat {{ ar_pip_executable }}"
69       stat:
70         path: "{{ ar_pip_executable }}"
71       register: result
72     - name: "packages: Not exists {{ ar_pip_executable }}"
73       fail:
74         msg: "[ERROR] {{ ar_pip_executable }} does not exist."
75       when: not result.stat.exists
76
77 - name: "packages: Install Ansible Runner pip packages for {{ ar_owner }}"
78   when: ar_pip_install
79   become_user: "{{ ar_owner }}"
80   become: true
81   changed_when: false # Note 1.
82   pip:
83     name: "{{ item.name }}"
84     executable: "{{ ar_pip_executable }}"
85     version: "{{ item.version|default(omit) }}"
86     state: "{{ item.state|default(omit) }}"
87     extra_args: "{{ pip_extraargs|default(omit) }}"
88   loop: "{{ ar_packages }}"
89   register: result
90   until: result is succeeded
91   retries: "{{ pip_install_retries }}"
92   delay: "{{ pip_install_delay }}"
93
94 - name: "packages: Debug pip packages"
95   when:
96     - ar_pip_install
97     - ar_debug|bool
98   debug:
99     var: result
100
101 - name: "packages: Install Ansible Runner pip requirements for {{ ar_owner }}"
102   when:
103     - ar_pip_install
104     - ar_pip_requirements is defined
105   become_user: "{{ ar_owner }}"
106   become: true
107   changed_when: false # Note 1.
108   pip:

```

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```

109     requirements: "{{{ ar_pip_requirements }}}}"
110     executable: "{{{ ar_pip_executable }}}}"
111     extra_args: "{{{ pip_extraargs|default(omit) }}}}"
112     register: result
113     until: result is succeeded
114     retries: "{{{ pip_install_retries }}}}"
115     delay: "{{{ pip_install_delay }}}}"
116
117 - name: "packages: Debug pip requirements"
118   when:
119     - ar_pip_install
120     - ar_debug|bool
121   debug:
122     var: result
123
124 # Note 1.
125 # The pip module isn't always idempotent #28952
126 # https://github.com/ansible/ansible/issues/28952
127
128 # EOF
129 ...

```

2.1.6 vars.yml

Synopsis: Configure vars.

Description of the task.

[vars.yml]

```

1 ---
2
3 - name: "Declare ar_owner when undefined"
4   when: ar_owner is undefined
5   set_fact:
6     ar_owner: "{{{ ansible_user_id }}}}"
7
8 - name: "Default vars for {{{ ansible_os_family }}}
9           {{{ ansible_distribution }}}
10          {{{ ansible_distribution_release }}}}"
11   include_vars: "{{{ item }}}}"
12   with_first_found:
13     - files:
14         - "{{{ ansible_distribution }}}-{{{ ansible_distribution_release }}}.yaml"
15         - "{{{ ansible_distribution }}}.yaml"
16         - "{{{ ansible_os_family }}}.yaml"
17         - "defaults.yaml"
18         - "default.yaml"
19     paths: "{{{ role_path }}}/vars/defaults"
20
21 - name: "Custom vars for {{{ ansible_os_family }}}
22           {{{ ansible_distribution }}}
23           {{{ ansible_distribution_release }}}}"
24   include_vars: "{{{ item }}}}"
25   with_first_found:
26     - files:

```

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```
27     - "{{ ansible_distribution }}-{{ ansible_distribution_release }}.yaml"
28     - "{{ ansible_distribution }}.yaml"
29     - "{{ ansible_os_family }}.yaml"
30     - "defaults.yaml"
31     - "default.yaml"
32     paths: "{{ role_path }}/vars"
33
34     # EOF
35     . . .
```


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