

Keeping track of CentOS infrastructure deployments

(with Ansible and ARA)

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Agenda

ARA Records Ansible:

- What it is (and isn't)
- What it does
- How it works
- Getting started

Agenda

CentOS infrastructure

- Why ARA
- How we consume it
- ConfigManagement SIG work



What it is

- 5 year old 🎂
- Another recursive acronym
- A free and open source Ansible community project (GPLv3)
- Packaged on PyPi, for Fedora, CentOS, Debian and OpenSUSE
- Available on [DockerHub](#) and [Quay.io](#)

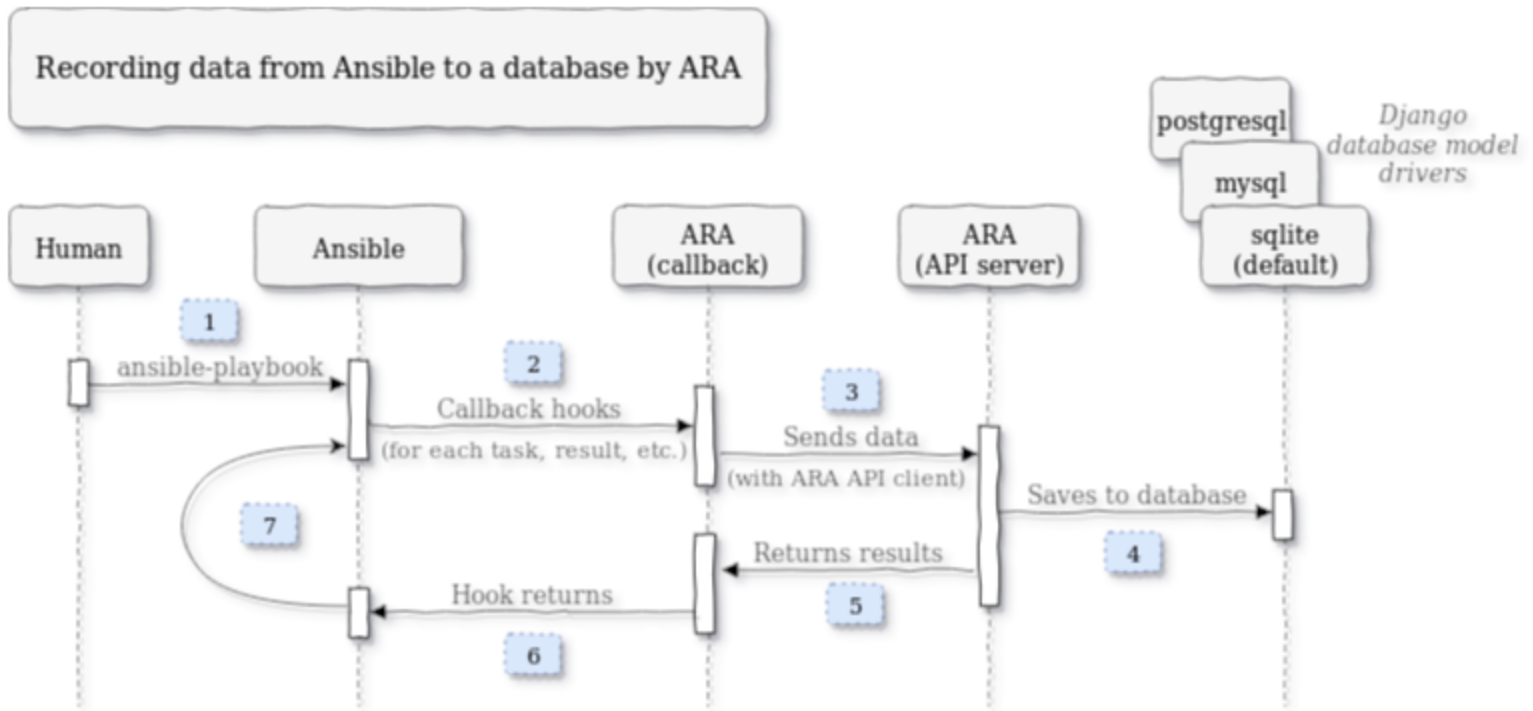
What it isn't

- A tool for running playbooks
- A replacement for AWX (or Tower)
- A parser for your Ansible console output

What it does

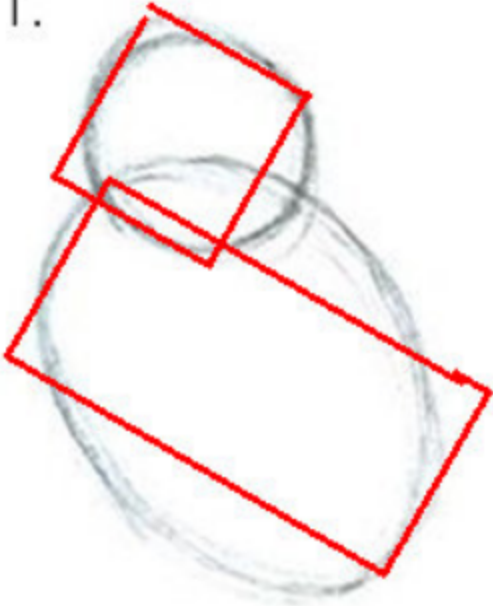
- Makes Ansible easier to understand and troubleshoot
- Records playbook results to a sqlite, mysql or postgresql database
- Provides an API for playbook, task and host results
- Provides a web reporting interface and a CLI to browse results

How it works



How to draw an ~~owl~~ **ARA**

1.



2.



POLYGONS

1. Draw some ~~circles~~

2. Draw the rest of the ~~owl~~ **ARA**

How it works

About Ansible callback plugins...

```
# https://github.com/ansible/ansible/blob/devel/lib/ansible/plugins/callback/__in
# [...]
def v2_on_any(self, *args, **kwargs):
def v2_runner_on_failed(self, result, ignore_errors=False):
def v2_runner_on_ok(self, result):
def v2_runner_on_skipped(self, result):
def v2_runner_on_unreachable(self, result):
def v2_playbook_on_start(self, playbook):
def v2_playbook_on_task_start(self, task, is_conditional):
def v2_playbook_on_play_start(self, play):
def v2_playbook_on_stats(self, stats):
def v2_runner_item_on_ok(self, result):
def v2_runner_item_on_failed(self, result):
def v2_runner_item_on_skipped(self, result):
# [...]
```

Getting started

With PyPi:

```
python3 -m pip install --user ansible ara[server]
export ANSIBLE_CALLBACK_PLUGINS=$(python3 -m ara.setup.callback_plugins)
ansible-playbook playbook.yml
ara playbook list
ara-manage runserver # -> http://127.0.0.1:8000
```

Getting started

With CentOS 8 repositories:

```
dnf install -y centos-release-ansible-29
dnf install -y ansible ara-server
export ANSIBLE_CALLBACK_PLUGINS=$(python3 -m ara.setup.callback_plugins)
ansible-playbook playbook.yml
ara playbook list
ara-manage runserver # -> http://127.0.0.1:8000
```



Links and community

Live demo: <https://demo.recordsansible.org>

More reading:

- **Website & Blog:** <https://ara.recordsansible.org>
- **Code:** <https://github.com/ansible-community/ara>
- **Documentation:** <https://ara.readthedocs.io/>

Stay up to date or come chat:

- **Twitter:** <https://twitter.com/RecordsAnsible>
- **IRC:** #ara on freenode
- **Slack:** Invite in the README (*bridged to IRC!*)

CentOS Infra

How it started

Background/context

- Coming from puppet
- Using Foreman as ENC and dashboard
-

CentOS Infra

Ansible migration, the beginning

- inventories are git repos (different environments/teams/projects)
 - git-crypt
 - ansible-vault
- playbooks and requirements.yml files for all inventories is a git repo
- one requirement.yml per inventory/project => "cherry-picking"
- each role is a git repo

More info on <https://github.com/centos/ansible-infra-playbooks>

CentOS Infra

What about reporting ?

- CentOS infra *was* migrated to Ansible from puppet
- Need to have central ansible station (regular desired state check)
- Good to have reports (// foreman dashboard for puppet execution)

CentOS Infra

KiSS !

Non "invasive" add-ons (like mitogen as an example):

```
{% if item.use_mitogen %}
strategy_plugins = {{ item.base_path }}/mitogen/ansible_mitogen/plugins/strategy
strategy = mitogen_linear
{% else %}
strategy = linear
{% endif %}
```

CentOS Infra

ARA *is non invasive*

```
{% if ansible_use_ara %}
callback_plugins=/usr/lib/python3.6/site-packages/ara/plugins/callback
action_plugins=/usr/lib/python3.6/site-packages/ara/plugins/action
lookup_plugins=/usr/lib/python3.6/site-packages/ara/plugins/lookup
{% endif %}

{% if ansible_use_ara %}
[ara]
api_client = http
api_server = http://127.0.0.1:8000
default_labels = {{ item.name }}
{% endif %}
```

CentOS ConfigManagement SIG work

- rebuild ara (client part)

CentOS ConfigManagement SIG work

- rebuild ara (client part)
- rebuild needed pkgs non in EPEL8

CentOS ConfigManagement SIG work

- rebuild ara (client part)
- rebuild needed pkgs non in EPEL8
- rebuild ara with server support

CentOS Infra

We started with container

<https://github.com/ansible-community/ara/blob/master/contrib/container-images/centos8-pypi.sh>

```
podman pull quay.io/recordsansible/ara-api:centos8-pypi-latest
```

More info: <https://github.com/CentOS/ansible-role-ansible-host/blob/master/defaults/main.yml#L62>

```
ara
python3-ara-server
python3-django : python-django-2.2.9-1.el8 : tag-build DONE
python3-django-cors-headers : built in common : DONE
python3-django-health-check DONE
python3-django-rest-framework : built in common : DONE
python3-dynaconf' (dynaconf) : DONE
  python3-box DONE
  python3-dotenv DONE
  python-sh DONE (fixed with carl's patch)
  python-ipython temporary DONE
  python3-backcall DONE
  python3-ipykernel' IP
  python3-jedi DONE
  python3-jupyter-client' DONE but needs to be done again after
    python-ipython-doc (bypassed for now)
    python-ipykernel old 4.5.2, so then bump
  python3-matplotlib' tag-build DONE
  python3-nbformat' DONE
  python-jupyter-core DONE
  python-sphinxcontrib-github-alt DONE
  python-flit-1.3-4.el8 tag-build DONE
python3-pickleshare DONE
python3-prompt-toolkit DONE
  python3-wcwidth tag build DONE
python3-simplegeneric' tag-build DONE
python3-testpath' tag-build DONE
python3-tornado tag build DONE
python3-traitlets DONE
  python3-ipython_genutils DONE
  python3-zmq python3-zmq-tests : tag build DONE
python3-toml DONE
python3-factory-boy : built in common : DONE
python3-faker DONE
  pytest-runner : python-pytest-runner-4.0-8.el8 : tag-build DONE
python3-pbr python-pbr-5.4.3-2.el8 tag-build DONE
python3-sphinxcontrib-programoutput python-sphinxcontrib-programoutput-0.14-4.el8 tag-build DONE
python3-tzlocal : python-tzlocal-1.5.1-9.el8 tag-build DONE
python3-whitenoise DONE
  python-brotli brotli-1.0.6-1.el8 : tag-build DONE
```

RPM build in progress



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rpm variant (now that we have it)

```
sudo dnf install -y centos-release-ansible-29  
sudo dnf install -y ansible ara python3-ara-server python3-gunicorn
```

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systemd unit file (not provided by ara pkg)

```
[Unit]
Description=ARA api service
DefaultDependencies=no
After=network.target

[Install]
WantedBy=multi-user.target

[Service]
Type=simple
User=ara
Group=ara
WorkingDirectory=/home/ara/.ara
ExecStart=/usr/bin/gunicorn --workers={{ ansible_ara_workers }} ara.server.wsgi
ExecStop=/bin/kill -s TERM $MAINPID
```

CentOS infra






















KISS (sqlite)

```
-rw-r--r--. 1 ara ara 5.2G May 10 12:55 ara.sqlite
```

CentOS Infra

Search and filter

First 1-100 of 3474 Last

Status	Report	Date	Duration	Hosts	Tasks	Results	Ansible	Controller	Name (or path)	CLI	Labels
		10 May 2021 12:55:31 +0000	None	4	46	184	2.9.21	tobisna.rdu2.centos.org	role-mirror-cloud		centos-infra subset:ima
		10 May 2021 12:53:56 +0000	00:01:32.01	4	50	200	2.9.21	tobisna.rdu2.centos.org	role-mirror-buildlogs		centos-infra subset:ima
		10 May 2021 12:53:03 +0000	00:00:50.24	1	108	108	2.9.21	tobisna.rdu2.centos.org	role-mirmon		centos-infra subset:ima
		10 May 2021 12:53:02 +0000	00:00:00.15	0	0	0	2.9.21	tobisna.rdu2.centos.org	role-mas		centos-infra subset:ima
		10 May 2021 12:52:20 +0000	00:00:38.99	1	72	72	2.9.21	tobisna.rdu2.centos.org	role-mantisbt		centos-infra subset:ima
		10 May 2021 12:51:26 +0000	00:00:52.18	1	71	71	2.9.21	tobisna.rdu2.centos.org	role-mailman		centos-infra subset:ima
		10 May 2021 12:51:17 +0000	00:00:06.77	1	10	10	2.9.21	tobisna.rdu2.centos.org	role-isynd		centos-infra subset:ima

CentOS Infra

cli output

```
ara playbook list --status failed --limit 5 --format value -c id -c path -c start  
180208 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T07:15:02.02  
180194 ...var/lib/tobisna-centos/playbooks/role-kvm-host.yml 2021-05-14T06:14:02.  
180142 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T05:15:02.04  
180120 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T04:15:02.10  
180119 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T03:15:02.52
```

CentOS Infra

cli output

```
ara playbook list --status failed --limit 5 --format value -c id -c path -c start  
180208 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T07:15:02.02  
180194 ...var/lib/tobisna-centos/playbooks/role-kvm-host.yml 2021-05-14T06:14:02.  
180142 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T05:15:02.04  
180120 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T04:15:02.10  
180119 ...tobisna-centos/playbooks/adhoc-refresh-facts.yml 2021-05-14T03:15:02.52
```

```
echo tobisna|rev  
ansibot
```

Thank you !

Any questions ?