

Recording Ansible

benchmarking ansible

with Ansible

```
< Why not ? >
-----
      \      ^  ^
      \      (oo) \
      \      (___) \
              | | - - - - w |
              | |           |
```

ANSIBLE CONTRIBUTOR SUMMIT @ CFG MGMT CAMP

&&

ANSIBLE-MONTREAL MEETUP

FEBRUARY 2025



\$ cat dmsimard.yml

```
---
- name: David Moreau-Simard
  hosts:
    - dmsimard:matrix.org
    - fosstodon.org/@rfc2549
  vars:
    job: OpenStack cloud architect at OVHcloud
    profile: ['sysadmin', 'dev/ops', 'CI/CD', 'SRE']
  roles:
    - Ansible user since version ~1.8 (2014?)
    - Created ara in 2016 to make my life easier
    - Was in the Ansible community team at Red Hat
    - Probably use Ansible for too many things
    - Part time contributor (between dev ops and dad ops)
```

What kind of benchmarking ?

Version	Support	End Of Life	Control Node Python	Target Python / PowerShell
2.18	GA: 04 Nov 2024 Critical: 19 May 2025 Security: 03 Nov 2025	May 2026	Python 3.11 - 3.13	Python 3.8 - 3.13 PowerShell 5.1
2.17	GA: 20 May 2024 Critical: 04 Nov 2024 Security: 19 May 2025	Nov 2025	Python 3.10 - 3.12	Python 3.7 - 3.12 PowerShell 5.1
2.16	GA: 06 Nov 2023 Critical: 20 May 2024 Security: Nov 2024	May 2025	Python 3.10 - 3.12	Python 2.7 Python 3.6 - 3.12 Powershell 5.1
2.15	GA: 22 May 2023 Critical: 06 Nov 2023 Security: 20 May 2024	EOL Nov 2024	Python 3.9 - 3.11	Python 2.7 Python 3.5 - 3.11 PowerShell 3 - 5.1
2.14	GA: 07 Nov 2022 Critical: 22 May 2023 Security: 06 Nov 2023	EOL 20 May 2024	Python 3.9 - 3.11	Python 2.7 Python 3.5 - 3.11 PowerShell 3 - 5.1
2.13	GA: 23 May 2022 Critical: 07 Nov 2022 Security: 22 May 2023	EOL 06 Nov 2023	Python 3.8 - 3.10	Python 2.7 Python 3.5 - 3.10 PowerShell 3 - 5.1
2.12	GA: 08 Nov 2021 Critical: 23 May 2022 Security: 07 Nov 2022	EOL 22 May 2023	Python 3.8 - 3.10	Python 2.6 - 2.7 Python 3.5 - 3.10 PowerShell 3 - 5.1

- Are newer versions of Ansible faster ?
- What about Python ?

How do we run the benchmarks ?





dmsimard

misc: Update license headers, use short gplv3 notice inst...



d79a88d · 3 years ago



History

Code

Blame

30 lines (28 loc) · 951 Bytes

Raw



```
1 ---
2 # Copyright (c) 2022 The ARA Records Ansible authors
3 # GNU General Public License v3.0+ (see COPYING or https://www.gnu.org/licenses/gpl-3.0.txt)
4
5 - name: Create many hosts
6   hosts: localhost
7   gather_facts: no
8   vars:
9     benchmark_host_count: 25
10  tasks:
11    - name: Add a host to the inventory
12      add_host:
13        ansible_connection: local
14        hostname: "host-{{ item }}"
15        groups: benchmark
16        with_sequence: start=1 end={{ benchmark_host_count }}
17
18 - name: Run tasks on many hosts
19   hosts: benchmark
20   vars:
21     benchmark_task_file: "{{ playbook_dir }}/benchmark_tasks.yaml"
22     # Run N tasks per host
23     benchmark_task_count: 50
24     # Off by default to prevent accidental load spike on localhost
25     benchmark_gather_facts: no
26   gather_facts: "{{ benchmark_gather_facts }}"
27   tasks:
28     - name: Include a task file
29       include_tasks: "{{ benchmark_task_file }}"
30     with_sequence: start=1 end={{ benchmark_task_count }}
```

ara / tests / integration / benchmark_tasks.yaml

...



dmsimard

misc: Update license headers, use short gplv3 notice inst...



d79a88d · 3 years ago



History

Code

Blame

9 lines (7 loc) · 324 Bytes

Raw



```
1  ---
2  # Copyright (c) 2022 The ARA Records Ansible authors
3  # GNU General Public License v3.0+ (see COPYING or https://www.gnu.org/licenses/gpl-3.0.txt)
4
5  # These are tasks meant to be imported by benchmark.yaml
6
7  - name: Run a task
8    debug:
9      msg: "{{ inventory_hostname }} running task {{ item }}/{{ benchmark_task_count }}"
```

https://github.com/ansible-community/ara/blob/master/tests/integration/benchmark_tasks.yaml



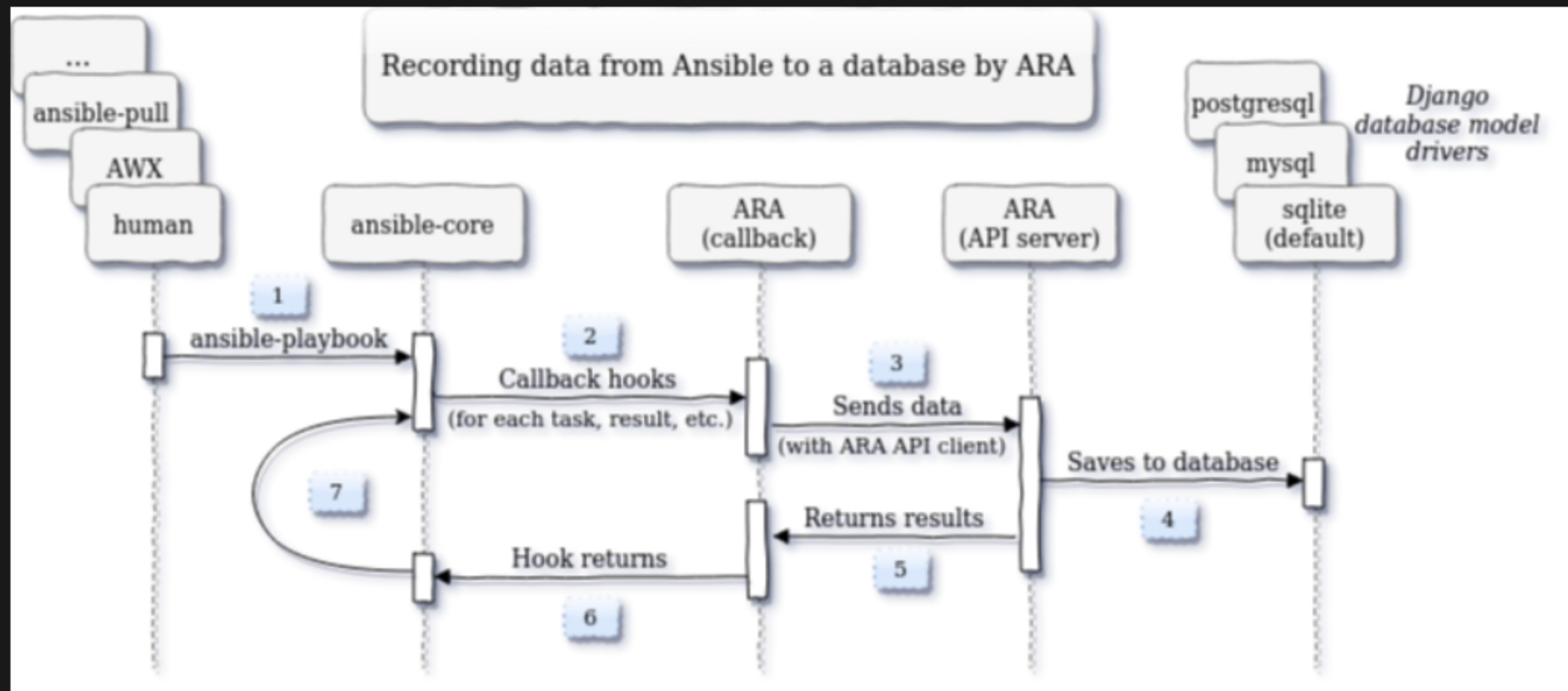
RUNNING THE BENCHMARKS

```
time 3.9/bin/ansible-playbook \
  src/ara/tests/integration/benchmark.yaml \
  -e benchmark_host_count=100 \
  -e benchmark_task_count=100
```

```
    "msg": "host-49 running task 3/100"
  }
ok: [host-50] => {
    "msg": "host-50 running task 3/100"
  }
ok: [host-51] => {
    "msg": "host-51 running task 3/100"
  }
ok: [host-52] => {
    "msg": "host-52 running task 3/100"
  }
ok: [host-53] => {
    "msg": "host-53 running task 3/100"
  }
ok: [host-54] => {
    "msg": "host-54 running task 3/100"
  }
ok: [host-55] => {
    "msg": "host-55 running task 3/100"
  }
}
```

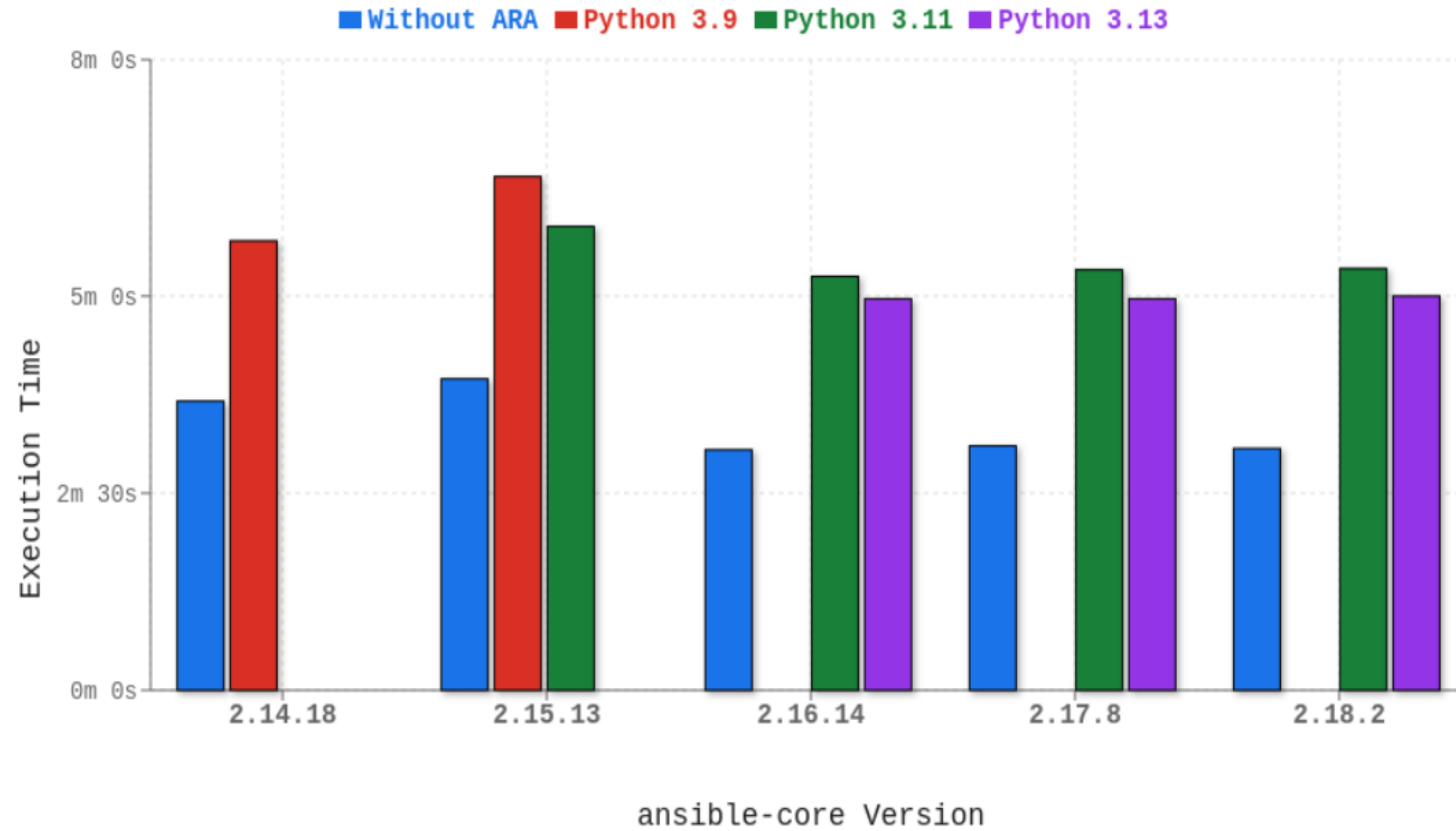
RECORDING THEM WITH ARA

 Playbooks Hosts Tasks API ⚙️ ☐ 🌙 Documentation About													
Search and filter playbooks													
First « 1-8 of 8 » Last													
Report	Status	CLI	Date	Duration	Name (or path)	Ansible	Controller	User	Hosts	Tasks	Results	Labels	
🔗	✅	📄	03 Feb 2025 02:43:07 +0000	00:04:58.40	/root/src/ara/tests/integration/benchmark.yaml	2.16.14	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.13
🔗	✅	📄	03 Feb 2025 02:50:33 +0000	00:04:58.95	/root/src/ara/tests/integration/benchmark.yaml	2.17.8	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.13
🔗	✅	📄	03 Feb 2025 02:55:55 +0000	00:05:00.19	/root/src/ara/tests/integration/benchmark.yaml	2.18.2	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.13
🔗	✅	📄	03 Feb 2025 02:31:46 +0000	00:05:15.89	/root/src/ara/tests/integration/benchmark.yaml	2.16.14	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.11
🔗	✅	📄	03 Feb 2025 03:02:36 +0000	00:05:21.29	/root/src/ara/tests/integration/benchmark.yaml	2.18.2	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.11
🔗	✅	📄	03 Feb 2025 02:16:27 +0000	00:05:42.34	/root/src/ara/tests/integration/benchmark.yaml	2.14.18	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.9
🔗	✅	📄	03 Feb 2025 02:24:01 +0000	00:05:53.54	/root/src/ara/tests/integration/benchmark.yaml	2.15.13	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.11
🔗	✅	📄	03 Feb 2025 02:06:54 +0000	00:06:31.42	/root/src/ara/tests/integration/benchmark.yaml	2.15.13	benchmark.novalocal	root	101	102	10101	check:False	tags:all py3.9



ansible-core & python version benchmark

(Lower is Better)



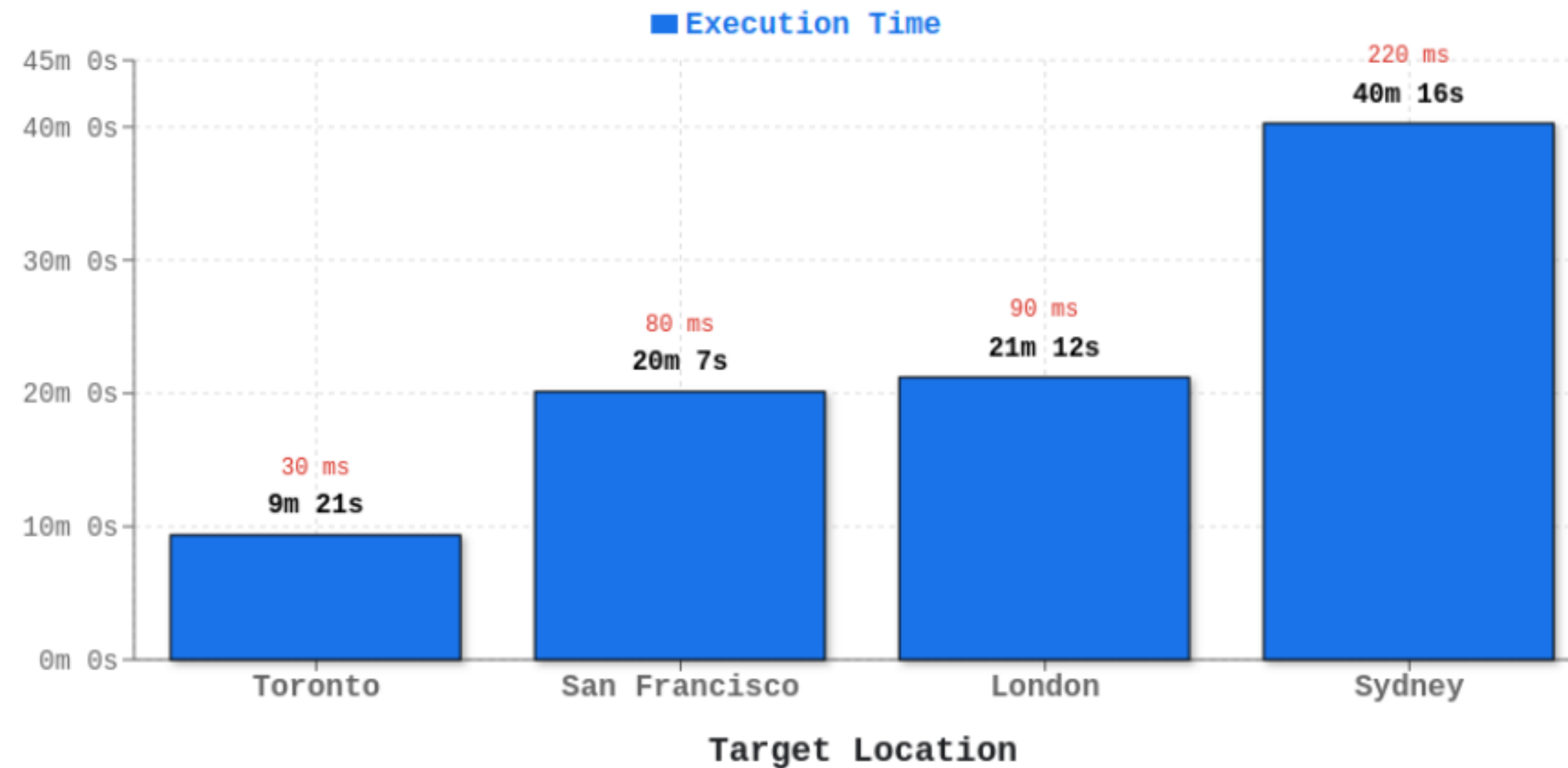
Note: Missing bars indicate no data available for that configuration

How does latency impact performance ?

Ansible Playbook Performance by Location

(Lower is Better)

ansible-core 2.18.3, Python 3.13, ANSIBLE_FORKS=50



Note: All playbooks run from Montreal, Canada. Bar labels show latency (ms).

Toronto
~550 km

San Francisco
~4,200 km

London
~5,300 km

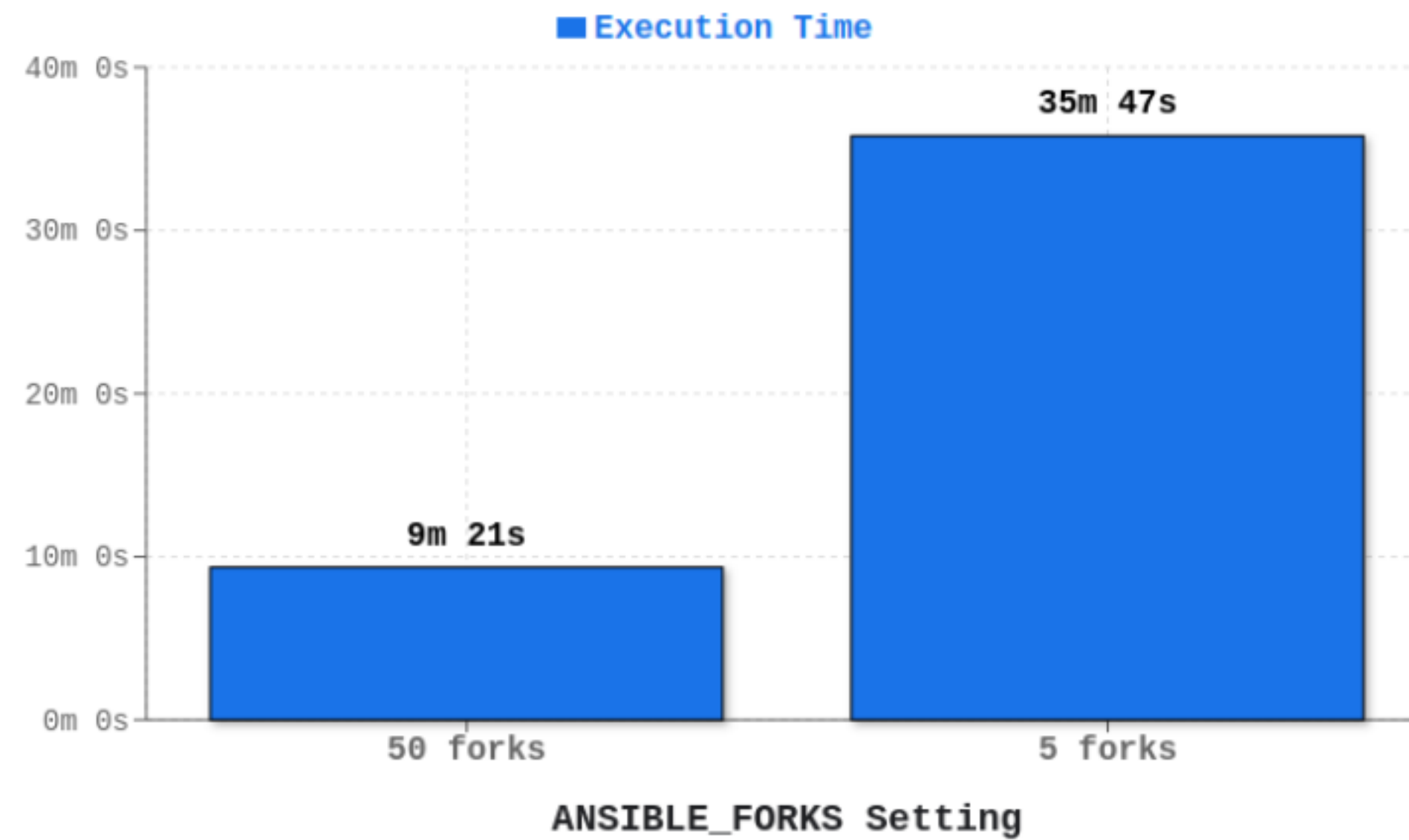
Sydney
~16,000 km

What about forks ?

Impact of ANSIBLE_FORKS on Performance

(Lower is Better)

ansible-core 2.18.3, Python 3.13, Montreal to Toronto (~30 ms latency)



Using 50 forks is 3.8x faster than 5 forks
(74% reduction in execution time)

SSH PERFORMANCE TUNING

```
[ssh_connection]  
pipelining = true  
ssh_args = -o ControlMaster=auto -o ControlPersist=60s
```

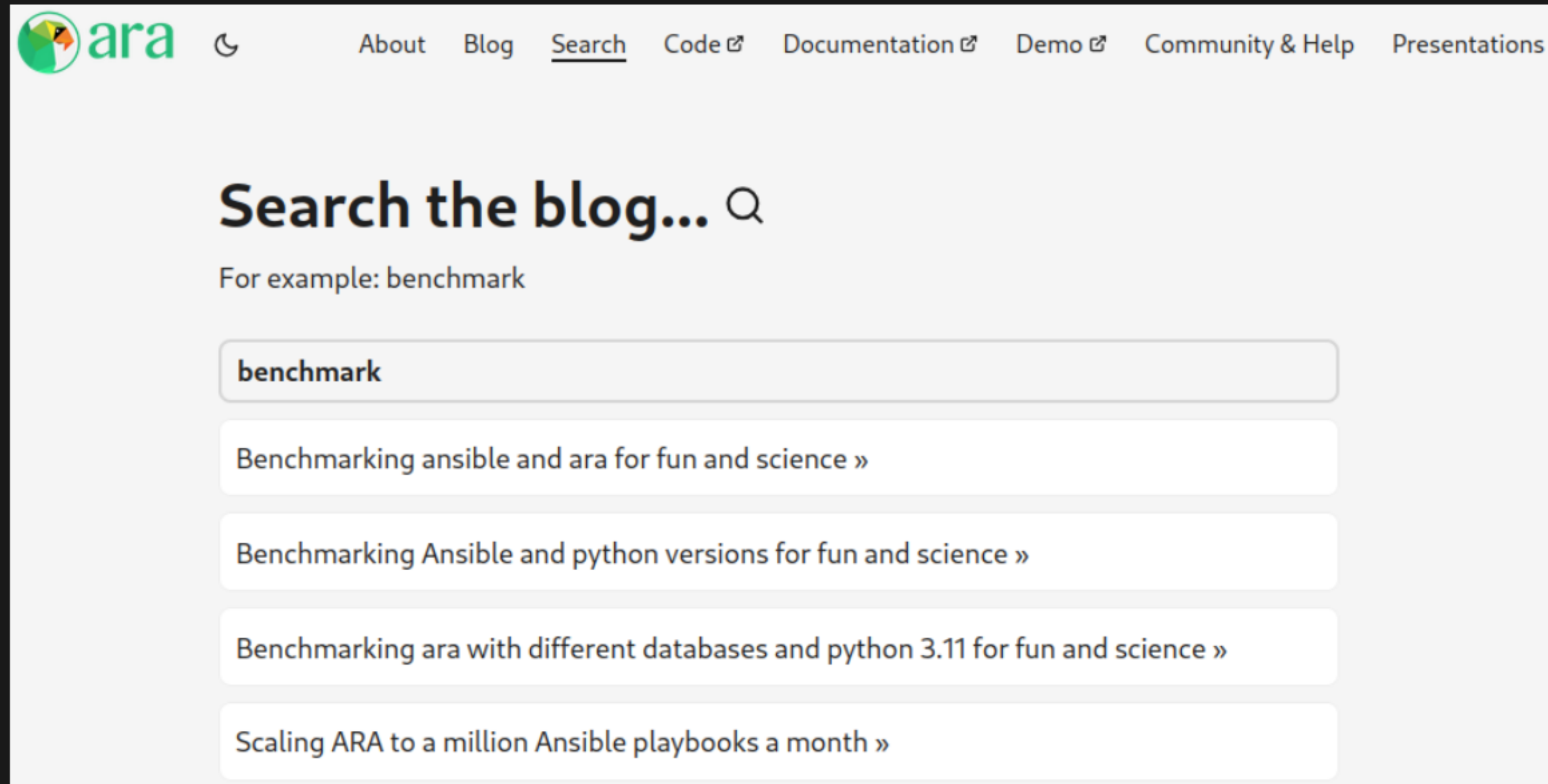


OTHER THINGS TO THINK ABOUT ...

<https://www.redhat.com/en/blog/faster-ansible-playbook-execution>



More benchmarking ?

A screenshot of the ara blog's search interface. At the top left is the 'ara' logo, which consists of a colorful parrot head icon followed by the text 'ara'. To the right of the logo is a small circular icon with a curved arrow. Further right is a horizontal navigation menu with links: 'About', 'Blog', 'Search' (which is underlined), 'Code' with an external link icon, 'Documentation' with an external link icon, 'Demo' with an external link icon, 'Community & Help', and 'Presentations'. Below the navigation menu is a large search input field with the placeholder text 'Search the blog...' and a magnifying glass icon. Underneath this field is a smaller text prompt 'For example: benchmark'. Below the prompt is a search bar containing the text 'benchmark'. Below the search bar are five search results, each in a white box with rounded corners. The results are: 'Benchmarking ansible and ara for fun and science »', 'Benchmarking Ansible and python versions for fun and science »', 'Benchmarking ara with different databases and python 3.11 for fun and science »', and 'Scaling ARA to a million Ansible playbooks a month »'.

  [About](#) [Blog](#) [Search](#) [Code](#)  [Documentation](#)  [Demo](#)  [Community & Help](#) [Presentations](#)

Search the blog... 

For example: benchmark

benchmark

Benchmarking ansible and ara for fun and science »

Benchmarking Ansible and python versions for fun and science »

Benchmarking ara with different databases and python 3.11 for fun and science »

Scaling ARA to a million Ansible playbooks a month »

<https://ara.recordsansible.org/blog/>

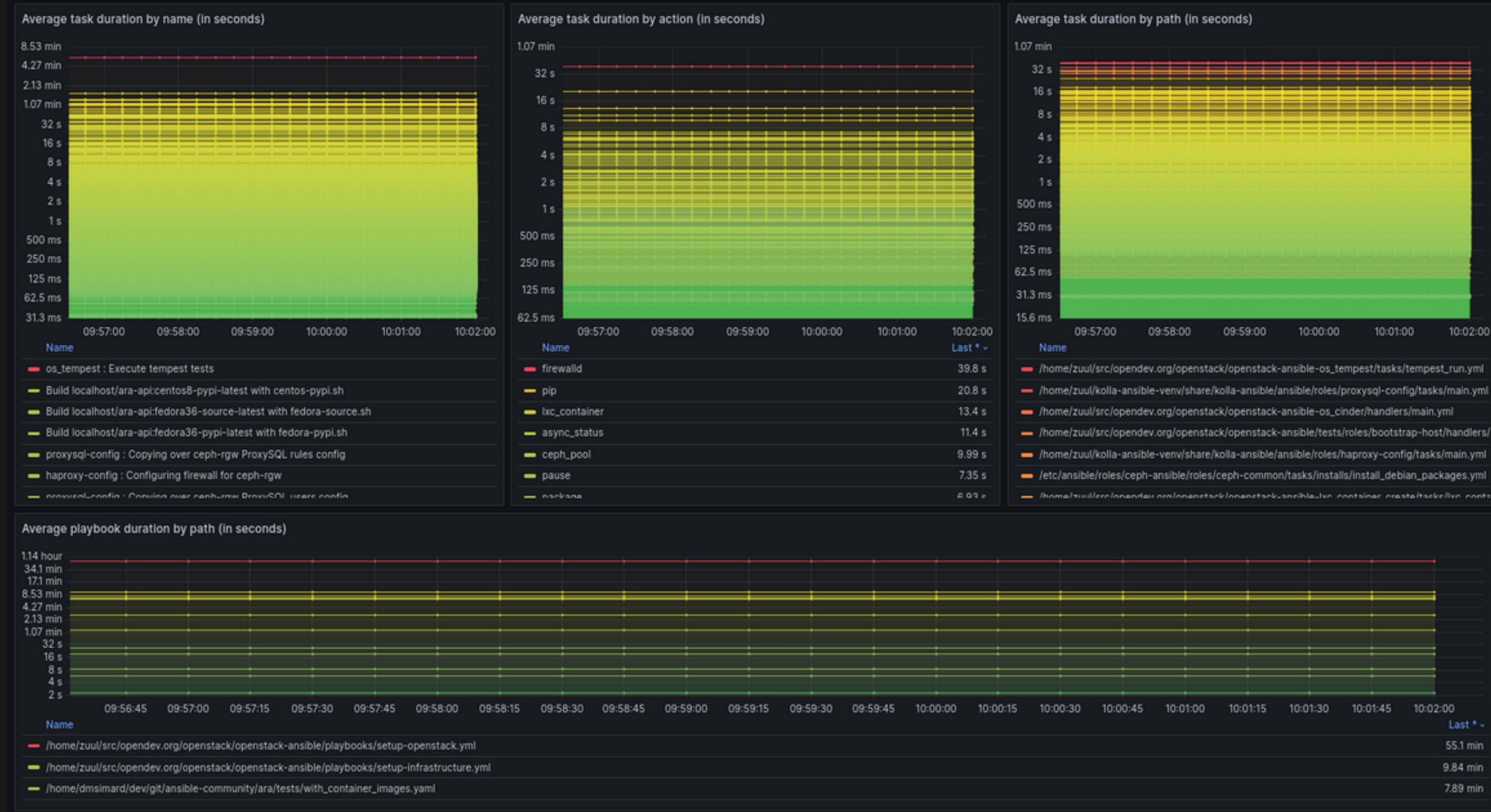


More metrics ?

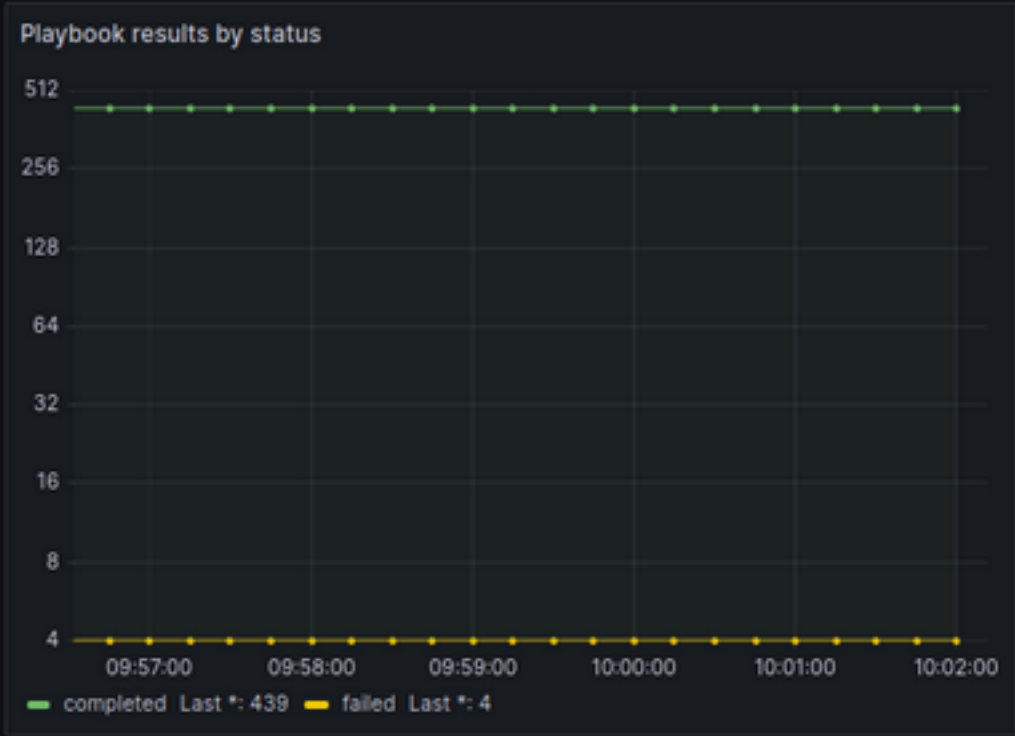
PLAYBOOK METRICS

- How many playbooks have been executed ?
- How long are playbooks & tasks running for ?
- How many changes and failures ?
- Where are those coming from ?
- Who (or what) is running the playbooks ?

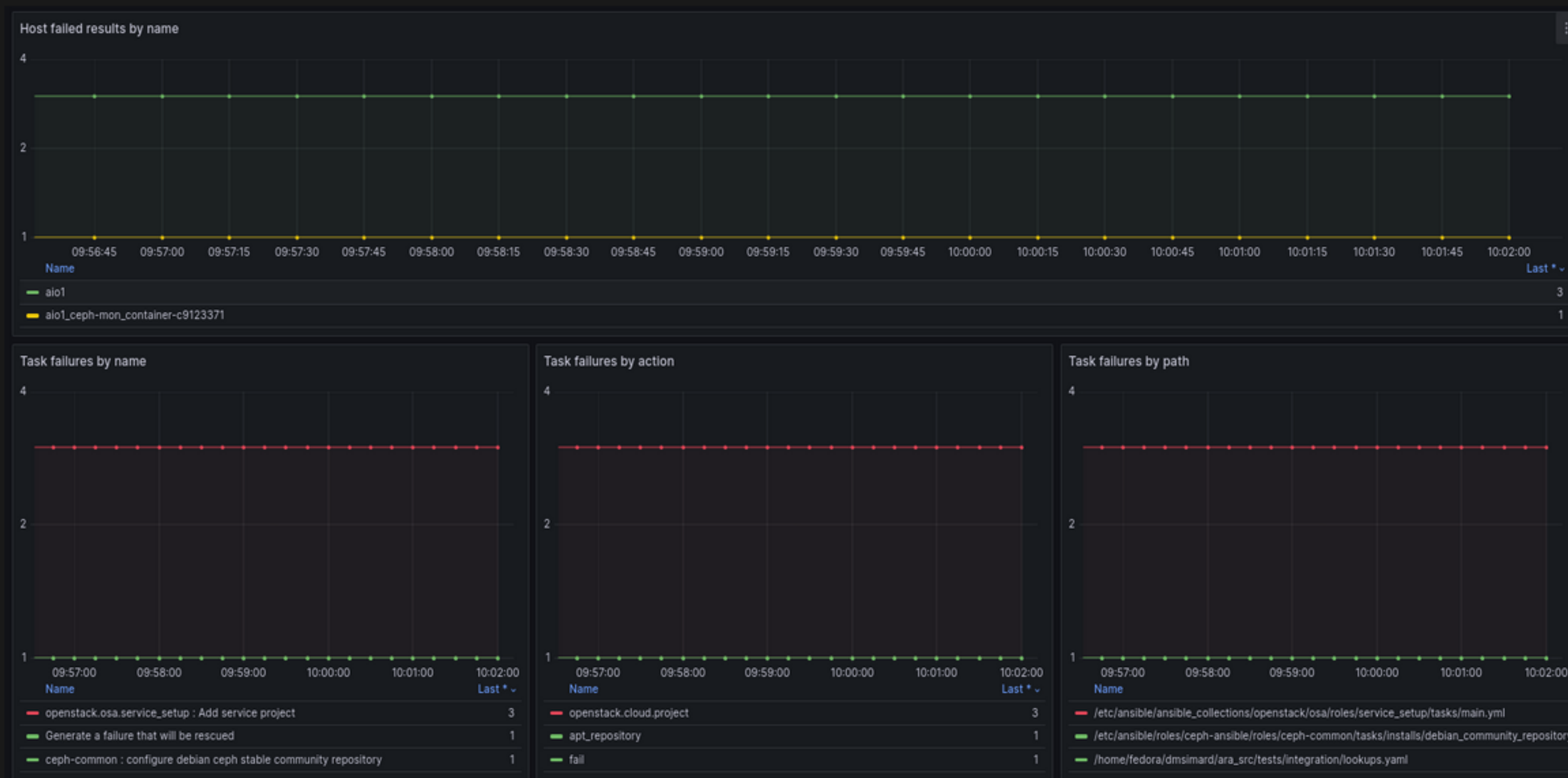
PERFORMANCE METRICS



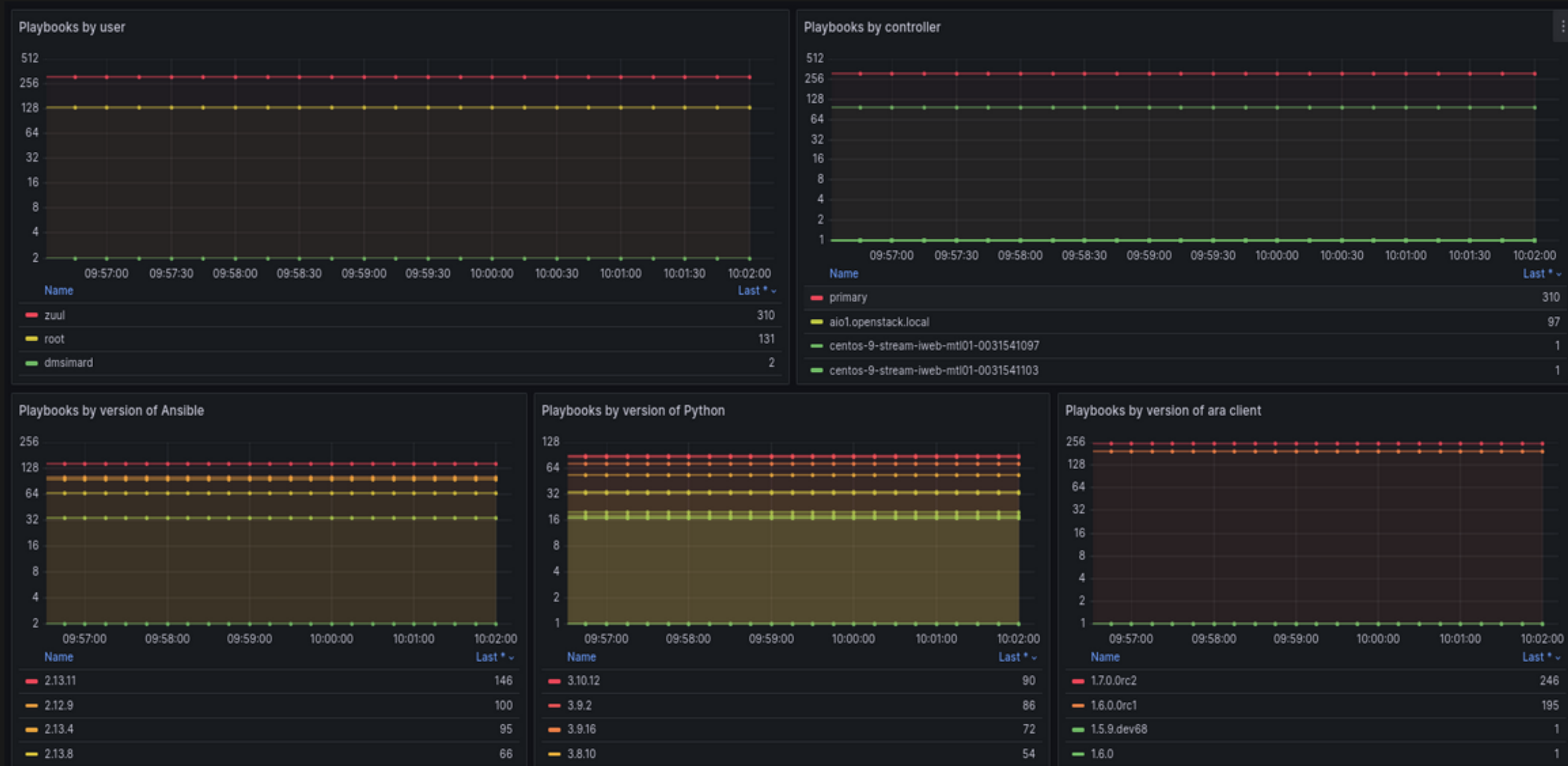
STATUS METRICS



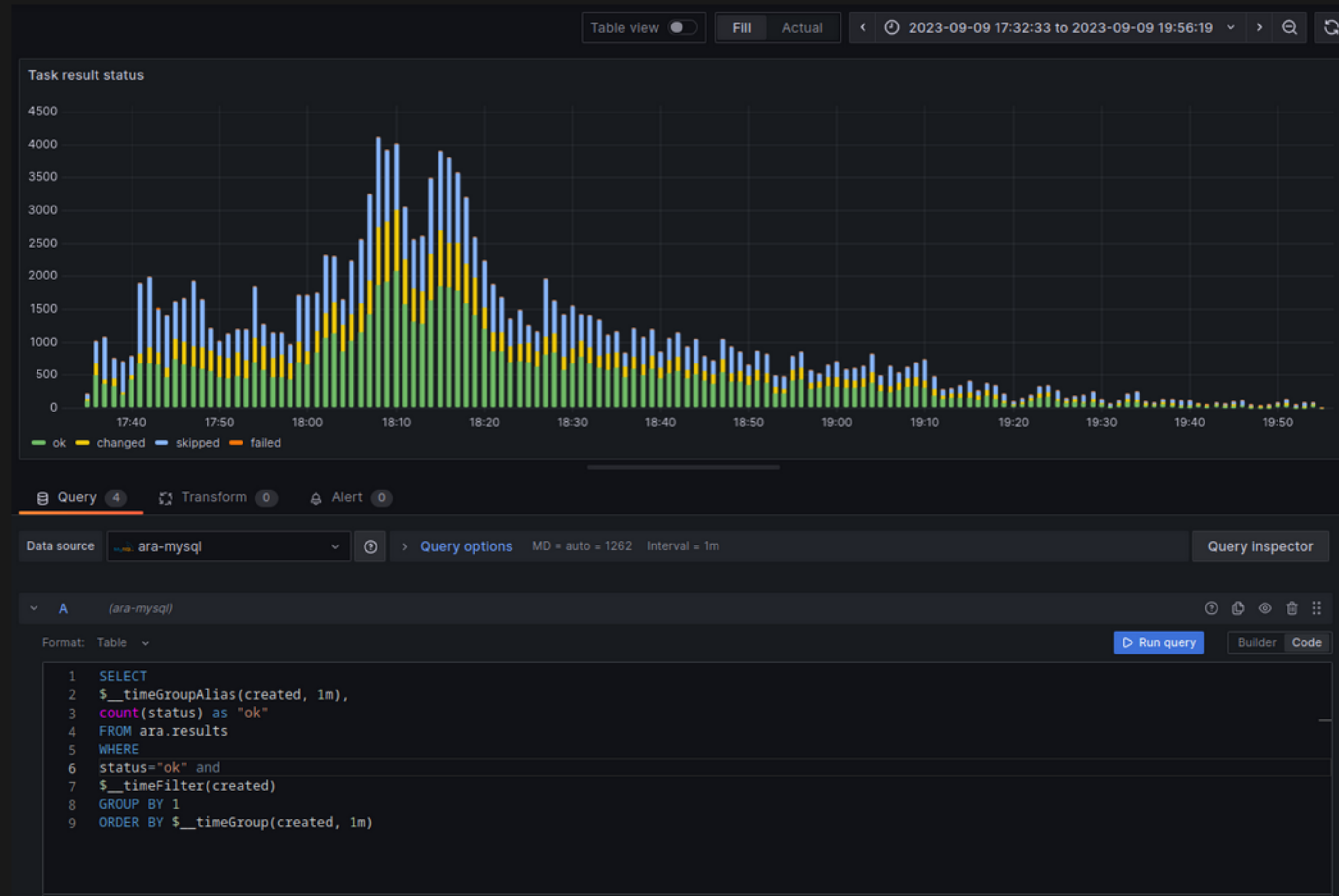
FAILURE METRICS



OTHER METRICS



TIME SERIES ?



ABOUT PROMETHEUS WITH ARA

(STILL A WORK IN PROGRESS)

<https://ara.recordsansible.org/presentations/cfg-mgmt-2024/ansible-metrics-in-prometheus.pdf>



GETTING STARTED

```
# Install ansible (or ansible-core) with ara (including API server dependencies)
python3 -m pip install --user ansible "ara[server]"

# Configure Ansible to enable ara
export ANSIBLE_CALLBACK_PLUGINS="$(python3 -m ara.setup.callback_plugins)"

# Run an Ansible playbook as usual
ansible-playbook playbook.yml

# Check out the CLI
ara playbook list
ara host list

# or the UI at http://127.0.0.1:8000
ara-manage runserver
```

THANK YOU !

QUESTIONS ?



For more information:

- <https://github.com/ansible-community/ara>
- <https://ara.recordsansible.org/blog>
- <https://ara.recordsansible.org/presentations>
- <https://fosstodon.org/@ara>

