Red Hat

Troubleshoot

Ansible Automation Platform 2.6

May 12, 2026

Contents

1 Troubleshoot

Access troubleshooting information in the UI

You can use the **Troubleshooting** page to enable or disable certain flags that aid in debugging issues within Ansible Automation Platform.

Procedure

1. From the navigation panel, select **Settings > Automation Execution > Troubleshooting**.
2. The **Troubleshooting** page is displayed.
3. Click **Edit**.
4. You can select the following options:
    - **Enable or Disable tmp dir cleanup**: Select this to enable or disable the cleanup of tmp directories generated during execution of a job after job execution completes.
    - **Debug Web Requests**: Select this to enable or disable web request profiling for debugging slow web requests.
    - **Release Receptor Work**: Select this to turn on or off the deletion of job pods after they complete or fail. This can be helpful in debugging why a job failed.
    - **Keep receptor work on error**: Select this to prevent receptor work from being released when an error is detected.
5. Click **Save** to save your changes.

Collect configuration and diagnostic information

To start troubleshooting Ansible Automation Platform, use the `must-gather` command on OpenShift Container Platform or the `sos` utility on a VM-based installation to collect configuration and diagnostic information. You can attach the output of these utilities to your support case.

Troubleshoot Ansible Automation Platform on OpenShift Container Platform by using the must-gather command

The `oc adm must-gather` command line interface (CLI) command collects information from your Ansible Automation Platform installation deployed on OpenShift Container Platform. It gathers information that is often needed for debugging issues, including resource definitions and service logs.

Before you begin

- The OpenShift CLI (`oc`) is installed.

Running the `oc adm must-gather` CLI command creates a new directory containing the collected data that you can use to troubleshoot or attach to your support case.

If your OpenShift environment does not have access to `registry.redhat.io` and you cannot run the `must-gather` command, then run the `oc adm inspect` command instead.

Procedure

1. Log in to your cluster:

```
oc login <openshift_url>
```

2. Run one of the following commands based on your level of access in the cluster:
   - Run `must-gather` across the entire cluster:

```
oc adm must-gather --image=registry.redhat.io/ansible-automation-platform-26/aap-must-gather-rhel9 --dest-dir <dest_dir>
```

     - `--image` specifies the image that gathers data
     - `--dest-dir` specifies the directory for the output
   - Run `must-gather` for a specific namespace in the cluster:

```
oc adm must-gather --image=registry.redhat.io/ansible-automation-platform-26/aap-must-gather-rhel9 --dest-dir <dest_dir> -- /usr/bin/ns-gather <namespace>
```

     - `-- /usr/bin/ns-gather` limits the `must-gather` data collection to a specified namespace

3. To attach the `must-gather` archive to your support case, create a compressed file from the `must-gather` directory created before and attach it to your support case.

    - For example, on a computer that uses a Linux operating system, run the following command, replacing `<must-gather-local.5421342344627712289/>` with the `must-gather` directory name:

```
$ tar cvaf must-gather.tar.gz <must-gather.local.5421342344627712289/>
```

Related information
Installing the OpenShift CLI
ocm adm inspect

Troubleshoot Ansible Automation Platform on VM-based installations by generating an sos report

The `sos` utility collects configuration, diagnostic, and troubleshooting data from your Ansible Automation Platform on a VM-based installation.

For more information about installing and using the `sos` utility, see Generating an sos report for technical support.

Troubleshoot your containerized deployment

Use this information to troubleshoot your containerized Ansible Automation Platform installation.

Gather logs from your containerized deployment

Use the `sos` utility to collect configuration and diagnostic data for Red Hat Technical Support. An `sos` report is the standard starting point for troubleshooting.

You can collect an `sos` report for each host in your containerized Ansible Automation Platform deployment by running the `log_gathering` playbook with the appropriate parameters.

Procedure

1. Go to the Ansible Automation Platform installation directory.

2. Run the `log_gathering` playbook. This playbook connects to each host in the inventory file, installs the `sos` tool, and generates the `sos` report.

```
$ ansible-playbook -i <path_to_inventory_file>
ansible.containerized_installer.log_gathering
```

3. Optional: To define additional parameters, specify them with the `-e` option. For example:

```
$ ansible-playbook -i <path_to_inventory_file>
ansible.containerized_installer.log_gathering -e
'target_sos_directory=<path_to_files>' -e 'case_number=0000000' -e
'clean=true' -e 'upload=true' -s
```

   a. You can use the `-s` option to step through each task in the playbook and confirm its execution. This is optional but can be helpful for debugging.

   b. The following is a list of the parameters you can use with the `log_gathering` playbook:

Parameter reference

Parameter name	Description	Default
`target_sos_directory`	Used to change the default location for the `sos` report files.	`/tmp` directory of the current server.
`case_number`	Specifies the support case number if relevant to the log gathering.	
`clean`	Obfuscates sensitive data that might be present on the `sos` report.	`false`
`upload`	Automatically uploads the `sos` report data to Red Hat.	`false`

4. Gather the `sos` report files described in the playbook output and share them with the support engineer or directly upload the `sos` report to Red Hat using the `upload=true` additional parameter.

Related information
[What is an sos report and how to create one in Red Hat Enterprise Linux?]

Diagnose the problem

For general container-based troubleshooting, you can inspect the container logs for any running service to help troubleshoot underlying issues.

Identifying the running containers

To get a list of the running container names run the following command:

```
$ podman ps --all --format "{{.Names}}"
```

Container details

Component group	Container name	Purpose
Automation controller	`automation-controller-rsyslog`	Handles centralized logging for automation controller.
Automation controller	`automation-controller-task`	Manages and runs tasks related to automation controller, such as running playbooks and interacting with inventories.
Automation controller	`automation-controller-web`	A web server that provides a REST API for automation controller. This is accessed and routed through platform gateway for user interaction.
Event-Driven Ansible	`automation-eda-api`	Exposes the API for Event-Driven Ansible, allowing external systems to trigger and manage event-driven automations.
Event-Driven Ansible	`automation-eda-daphne`	A web server for Event-Driven Ansible, handling WebSocket connections and serving static files.
Event-Driven Ansible	`automation-eda-web`	A web server that provides a REST API for Event-Driven Ansible. This is accessed and routed through platform gateway for user interaction.
Event-Driven Ansible	`automation-eda-worker-<number>`	These containers run the automation rules and playbooks based on incoming events.
Event-Driven Ansible	`automation-eda-activation-worker-<number>`	These containers manage the activation of automation rules, ensuring they run when specific conditions are met.

Component group	Container name	Purpose
Event-Driven Ansible	`automation-eda-scheduler`	Responsible for scheduling and managing recurring tasks and rule activations.
Platform gateway	`automation-gateway-proxy`	Acts as a reverse proxy, routing incoming requests to the appropriate Ansible Automation Platform services.
Platform gateway	`automation-gateway`	Responsible for authentication, authorization, and overall request handling for the platform, all of which is exposed through a REST API and served by a web server.
Automation hub	`automation-hub-api`	Provides the API for automation hub, enabling interaction with collection content, user management, and other automation hub functionality.
Automation hub	`automation-hub-content`	Manages and serves Ansible Content Collections, roles, and modules stored in automation hub.
Automation hub	`automation-hub-web`	A web server that provides a REST API for automation hub. This is accessed and routed through platform gateway for user interaction.
Automation hub	`automation-hub-worker-<number>`	These containers handle background tasks for automation hub, such as content synchronization, indexing, and validation.
Performance Co-Pilot	`pcp`	If Performance Co-Pilot Monitoring is enabled, this container is used for system performance monitoring and data collection.
PostgreSQL	`postgresql`	Hosts the PostgreSQL database for Ansible Automation Platform.
Receptor	`receptor`	Facilitates secure and reliable communication within Ansible Automation Platform.
Redis	`redis-<suffix>`	Responsible for caching, real-time analytics and fast data retrieval.

Inspecting the logs

Containerized Ansible Automation Platform uses `journald` for Podman logging. To inspect any running container logs, run the `journalctl` command:

```
$ journalctl CONTAINER_NAME=<container_name>
```

Example command with output:

```
$ journalctl CONTAINER_NAME=automation-gateway-proxy


Oct 08 01:40:12 aap.example.org automation-gateway-proxy[1919]: [2024-10-08
00:40:12.885][2][info][upstream] [external/envoy/source/common/upstream/cds_ap>

Oct 08 01:40:12 aap.example.org automation-gateway-proxy[1919]: [2024-10-08
00:40:12.885][2][info][upstream] [external/envoy/source/common/upstream/cds_ap>

Oct 08 01:40:19 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T00:40:16.753Z] "GET /up HTTP/1.1" 200 - 0 1138 10 0 "192.0.2.1" "python-
>
```

To view the logs of a running container in real-time, run the `podman logs -f` command:

```
$ podman logs -f <container_name>
```

Controlling container operations

You can control operations for a container by running the `systemctl` command:

```
$ systemctl --user status <container_name>
```

Example command with output:

```
$ systemctl --user status automation-gateway-proxy

● automation-gateway-proxy.service - Podman automation-gateway-proxy.service

    Loaded: loaded (/home/user/.config/systemd/user/automation-gateway-
proxy.service; enabled; preset: disabled)

    Active: active (running) since Mon 2024-10-07 12:39:23 BST; 23h ago

       Docs: man:podman-generate-systemd(1)

    Process: 780 ExecStart=/usr/bin/podman start automation-gateway-proxy
(code=exited, status=0/SUCCESS)

   Main PID: 1919 (conmon)

      Tasks: 1 (limit: 48430)

     Memory: 852.0K

        CPU: 2.996s

     CGroup: /user.slice/user-1000.slice/user@1000.service/app.slice/automation-
gateway-proxy.service

             └─1919 /usr/bin/conmon --api-version 1 -c
2dc3c7b2cecd73010bad1e0aaa806015065f92556ed3591c9d2084d7ee209c7a -u
2dc3c7b2cecd73010bad1e0aaa80>

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:02.926Z] "GET /api/galaxy/_ui/v1/settings/ HTTP/1.1" 200 - 0 654
58 47 ">

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:03.387Z] "GET /api/controller/v2/config/ HTTP/1.1" 200 - 0 4018 58
44 "1>

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:03.370Z] "GET /api/galaxy/v3/plugin/ansible/search/collection-
versions/?>

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:03.405Z] "GET /api/controller/v2/organizations/?
role_level=notification_>

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:04.366Z] "GET /api/galaxy/_ui/v1/me/ HTTP/1.1" 200 - 0 1368 79 40
"192.1>

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:04.360Z] "GET /api/controller/v2/workflow_approvals/?
page_size=200&statu>

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:04.379Z] "GET /api/controller/v2/job_templates/7/ HTTP/1.1" 200 -
0 1356>

Oct 08 11:44:10 aap.example.org automation-gateway-proxy[1919]:
[2024-10-08T10:44:04.378Z] "GET /api/galaxy/_ui/v1/feature-flags/ HTTP/1.1" 200 - 0
207 81>

Oct 08 11:44:13 aap.example.org automation-gateway-proxy[1919]: [2024-10-08
10:44:13.856][2][info][upstream] [external/envoy/source/common/upstream/cds_ap>

Oct 08 11:44:13 aap.example.org automation-gateway-proxy[1919]: [2024-10-08
10:44:13.856][2][info][upstream] [external/envoy/source/common/upstream/cds_ap
```

Getting container information about the execution plane

To get container information about automation controller, Event-Driven Ansible, and `execution_nodes` nodes, prefix any Podman commands with either:

```
CONTAINER_HOST=unix://run/user/<user_id>/podman/podman.sock
```

or

```
CONTAINERS_STORAGE_CONF=<user_home_directory>/aap/containers/storage.conf
```

Example with output:

```
$ CONTAINER_HOST=unix://run/user/1000/podman/podman.sock podman images


REPOSITORY                                                      TAG
IMAGE ID      CREATED     SIZE

registry.redhat.io/ansible-automation-platform-25/ee-supported-rhel8  latest
 59d1bc680a7c  6 days ago  2.24 GB

registry.redhat.io/ansible-automation-platform-25/ee-minimal-rhel8    latest
 a64b9fc48094  6 days ago  338 MB
```

Troubleshoot your containerized installation

Use this information to troubleshoot your containerized installation of Ansible Automation Platform.

The installation takes a long time, or has errors, what should I check?

1. Ensure your system meets the minimum requirements as outlined in System requirements. Factors such as improper storage choices and high latency when distributing across many hosts will all have an impact on installation time.
2. Review the installation log file which is located by default at `./aap_install.log`. You can change the log file location within the `ansible.cfg` file in the installation directory.
3. Enable task profiling callbacks on an ad hoc basis to give an overview of where the installation program spends the most time. To do this, use the local `ansible.cfg` file. Add a callback line under the `[defaults]` section, for example:

   ```
   $ cat ansible.cfg

   [defaults]

   callbacks_enabled = ansible.posix.profile_tasks
   ```

Automation controller returns an error of 413

This error occurs when `manifest.zip` license files that are larger than the `controller_nginx_client_max_body_size` setting. If this error occurs, update the inventory file to include the following variable:

```
controller_nginx_client_max_body_size=5m
```

The default setting of `5m` should prevent this issue, but you can increase the value as needed.

When attempting to install containerized Ansible Automation Platform in Amazon Web Services you receive output that there is no space left on device

```
TASK [ansible.containerized_installer.automationcontroller : Create the receptor
container] ************************************************

fatal: [ec2-13-48-25-168.eu-north-1.compute.amazonaws.com]: FAILED! => {"changed":
false, "msg": "Can't create container receptor", "stderr": "Error: creating
container storage: creating an ID-mapped copy of layer
\"98955f43cc908bd50ff43585fec2c7dd9445eaf05eecd1e3144f93ffc00ed4ba\": error during
chown: storage-chown-by-maps: lchown usr/local/lib/python3.9/site-packages/azure/
mgmt/network/v2019_11_01/operations/__pycache__/
_available_service_aliases_operations.cpython-39.pyc: no space left on device: exit
status 1\n", "stderr_lines": ["Error: creating container storage: creating an ID-
mapped copy of layer
\"98955f43cc908bd50ff43585fec2c7dd9445eaf05eecd1e3144f93ffc00ed4ba\": error during
chown: storage-chown-by-maps: lchown usr/local/lib/python3.9/site-packages/azure/
mgmt/network/v2019_11_01/operations/__pycache__/
_available_service_aliases_operations.cpython-39.pyc: no space left on device: exit
status 1"], "stdout": "", "stdout_lines": []}
```

If you are installing a `/home` filesystem into a default Amazon Web Services marketplace RHEL instance, it might be too small since `/home` is part of the root `/` filesystem. To resolve this issue you must make more space available. For more information about the system requirements, see System requirements.

"Install container tools" task fails due to unavailable packages

This error can be seen in the installation process output as the following:

```
TASK [ansible.containerized_installer.common : Install container tools]
**********************************************************************************
*********************

fatal: [192.0.2.1]: FAILED! => {"changed": false, "failures": ["No package crun
available.", "No package podman available.", "No package slirp4netns available.",
"No package fuse-overlayfs available."], "msg": "Failed to install some of the
specified packages", "rc": 1, "results": []}

fatal: [192.0.2.2]: FAILED! => {"changed": false, "failures": ["No package crun
available.", "No package podman available.", "No package slirp4netns available.",
"No package fuse-overlayfs available."], "msg": "Failed to install some of the
specified packages", "rc": 1, "results": []}

fatal: [192.0.2.3]: FAILED! => {"changed": false, "failures": ["No package crun
available.", "No package podman available.", "No package slirp4netns available.",
"No package fuse-overlayfs available."], "msg": "Failed to install some of the
specified packages", "rc": 1, "results": []}

fatal: [192.0.2.4]: FAILED! => {"changed": false, "failures": ["No package crun
available.", "No package podman available.", "No package slirp4netns available.",
"No package fuse-overlayfs available."], "msg": "Failed to install some of the
specified packages", "rc": 1, "results": []}

fatal: [192.0.2.5]: FAILED! => {"changed": false, "failures": ["No package crun
available.", "No package podman available.", "No package slirp4netns available.",
"No package fuse-overlayfs available."], "msg": "Failed to install some of the
specified packages", "rc": 1, "results": []}
```

To fix this error, run the following command on the target hosts:

```
sudo subscription-manager register
```

Troubleshoot your containerized configuration

Use this information to troubleshoot your containerized Ansible Automation Platform configuration.

Sometimes the post install for seeding my Ansible Automation Platform content errors out

This could manifest itself as output similar to this:

```
TASK [infra.controller_configuration.projects : Configure Controller Projects | Wait
for finish the projects creation] ************************************

Friday 29 September 2023  11:02:32 +0100 (0:00:00.443)       0:00:53.521 ******

FAILED - RETRYING: [daap1.lan]: Configure Controller Projects | Wait for finish the
projects creation (1 retries left).

failed: [daap1.lan] (item={'failed': 0, 'started': 1, 'finished': 0,
'ansible_job_id': '536962174348.33944', 'results_file': '/home/aap/.ansible_async/
536962174348.33944', 'changed': False, '__controller_project_item': {'name': 'AAP
Config-As-Code Examples', 'organization': 'Default', 'scm_branch': 'main',
'scm_clean': 'no', 'scm_delete_on_update': 'no', 'scm_type': 'git',
'scm_update_on_launch': 'no', 'scm_url': 'https://github.com/user/repo.git'},
'ansible_loop_var': '__controller_project_item'}) =>
{"__projects_job_async_results_item": {"__controller_project_item": {"name": "AAP
Config-As-Code Examples", "organization": "Default", "scm_branch": "main",
"scm_clean": "no", "scm_delete_on_update": "no", "scm_type": "git",
"scm_update_on_launch": "no", "scm_url": "https://github.com/user/repo.git"},
"ansible_job_id": "536962174348.33944", "ansible_loop_var":
"__controller_project_item", "changed": false, "failed": 0, "finished": 0,
"results_file": "/home/aap/.ansible_async/536962174348.33944", "started": 1},
"ansible_job_id": "536962174348.33944", "ansible_loop_var":
"__projects_job_async_results_item", "attempts": 30, "changed": false, "finished":
0, "results_file": "/home/aap/.ansible_async/536962174348.33944", "started": 1,
"stderr": "", "stderr_lines": [], "stdout": "", "stdout_lines": []}
```

The `infra.controller_configuration.dispatch` role uses an asynchronous loop with 30 retries to apply each configuration type, and the default delay between retries is 1 second. If the configuration is large, this might not be enough time to apply everything before the last retry occurs.

Increase the retry delay by setting the `controller_configuration_async_delay` variable to 2 seconds for example. You can set this variable in the `[all:vars]` section of the installation program inventory file.

Re-run the installation program to ensure everything works as expected.

Understand the architecture of your containerized deployment

Use this information to understand the architecture for your containerized Ansible Automation Platform deployment.

Can you give details of the architecture for the Ansible Automation Platform containerized design?

We use as much of the underlying Red Hat Enterprise Linux technology as possible. Podman is used for the container runtime and management of services.

Use `podman ps` to list the running containers on the system.

Use `podman images` to display information about locally stored images.

Containerized Ansible Automation Platform runs as rootless containers for enhanced security by default. This means you can install containerized Ansible Automation Platform by using any local unprivileged user account. Privilege escalation is only needed for certain root level tasks, and by default is not needed to use root directly.

The installation program adds the following files to the filesystem where you run the installation program on the underlying Red Hat Enterprise Linux host:

```
$ tree -L 1
    .
    ├── aap_install.log
    ├── ansible.cfg
    ├── collections
    ├── galaxy.yml
    ├── inventory
    ├── LICENSE
    ├── meta
    ├── playbooks
    ├── plugins
    ├── README.md
    ├── requirements.yml
    ├── roles
```

The installation root directory includes other containerized services that make use of Podman volumes.

Here are some examples for further reference:

The `containers` directory includes some of the Podman specifics used and installed for the execution plane:

```
containers/
├── podman
├── storage
│   ├── defaultNetworkBackend
│   ├── libpod
│   ├── networks
│   ├── overlay
│   ├── overlay-containers
│   ├── overlay-images
│   ├── overlay-layers
│   ├── storage.lock
│   └── userns.lock
└── storage.conf
```

The `controller` directory has some of the installed configuration and runtime data points:

```
controller/
├── data
│   ├── job_execution
│   ├── projects
│   └── rsyslog
├── etc
│   ├── conf.d
│   ├── launch_awx_task.sh
│   ├── settings.py
│   ├── tower.cert
│   └── tower.key
├── nginx
│   └── etc
├── rsyslog
│   └── run
└── supervisor
    └── run
```

The `receptor` directory has the automation mesh configuration:

```
receptor/
├── etc
│   └── receptor.conf
└── run
    ├── receptor.sock
    └── receptor.sock.lock
```

After installation, you will also find other files in the local user's `/home` directory such as the `.cache` directory:

```
.cache/
├── containers
│   └── short-name-aliases.conf.lock
└── rhsm
    └── rhsm.log
```

As services are run using rootless Podman by default, you can use other services such as running `systemd` as non-privileged users. Under `systemd` you can see some of the component service controls available:

The `.config` directory:

```
.config/
├── cni
│   └── net.d
│       └── cni.lock
├── containers
│   ├── auth.json
│   └── containers.conf
└── systemd
    └── user
        ├── automation-controller-rsyslog.service
        ├── automation-controller-task.service
        ├── automation-controller-web.service
        ├── default.target.wants
        ├── podman.service.d
        ├── postgresql.service
        ├── receptor.service
        ├── redis.service
        └── sockets.target.wants
```

This is specific to Podman and conforms to the Open Container Initiative (OCI) specifications. When you run Podman as the root user `/var/lib/containers` is used by default. For standard users the hierarchy under `$HOME/.local` is used.

The `.local` directory:

```
.local/
└── share
    └── containers
        ├── cache
        ├── podman
        └── storage
```

As an example `.local/storage/volumes` contains what the output from `podman volume ls` provides:

```
$ podman volume ls


DRIVER      VOLUME NAME
local       d73d3fe63a957bee04b4853fd38c39bf37c321d14fdab9ee3c9df03645135788
local       postgresql
local       redis_data
local       redis_etc
local       redis_run
```

The execution plane is isolated from the control plane main services to ensure it does not affect the main services.

Control plane services run with the standard Podman configuration and can be found in: `~/.local/share/containers/storage`.

Execution plane services (automation controller, Event-Driven Ansible and execution nodes) use a dedicated configuration found in `~/aap/containers/storage.conf`. This separation prevents execution plane containers from affecting the control plane services.

You can view the execution plane configuration with one of the following commands:

```
CONTAINERS_STORAGE_CONF=~/aap/containers/storage.conf podman <subcommand>
```

```
CONTAINER_HOST=unix://run/user/<user uid>/podman/podman.sock podman <subcommand>
```

How can I see host resource utilization statistics?

Run the following command to display host resource utilization statistics:

```
$ podman container stats -a
```

Example output based on a Dell sold and offered containerized Ansible Automation Platform solution (DAAP) install that utilizes ~1.8 GB RAM:

```
ID           NAME                           CPU %       MEM USAGE / LIMIT  MEM %
    NET IO      BLOCK IO    PIDS        CPU TIME    AVG CPU %

0d5d8eb93c18  automation-controller-web      0.23%       959.1MB / 3.761GB  25.50%
   0B / 0B     0B / 0B     16          20.885142s  1.19%

3429d559836d  automation-controller-rsyslog  0.07%       144.5MB / 3.761GB  3.84%
    0B / 0B     0B / 0B     6           4.099565s   0.23%

448d0bae0942  automation-controller-task     1.51%       633.1MB / 3.761GB  16.83%
   0B / 0B     0B / 0B     33          34.285272s  1.93%

7f140e65b57e  receptor                       0.01%       5.923MB / 3.761GB  0.16%
    0B / 0B     0B / 0B     7           1.010613s   0.06%

c1458367ca9c  redis                          0.48%       10.52MB / 3.761GB  0.28%
    0B / 0B     0B / 0B     5           9.074042s   0.47%

ef712cc2dc89  postgresql                     0.09%       21.88MB / 3.761GB  0.58%
    0B / 0B     0B / 0B     21          15.571059s  0.80%
```

How much storage is used and where?

The container volume storage is under the local user at `$HOME/.local/share/containers/storage/volumes`.

1. To view the details of each volume, run the following command:

   ```
   $ podman volume ls
   ```

2. Run the following command to display detailed information about a specific volume:

   ```
   $ podman volume inspect <volume_name>
   ```

For example:

```
$ podman volume inspect postgresql
```

Example output:

```
[
    {
        "Name": "postgresql",
        "Driver": "local",
        "Mountpoint": "/home/aap/.local/share/containers/storage/volumes/postgresql/
_data",
        "CreatedAt": "2024-01-08T23:39:24.983964686Z",
        "Labels": {},
        "Scope": "local",
        "Options": {},
        "MountCount": 0,
        "NeedsCopyUp": true
    }
]
```


Several files created by the installation program are located in `$HOME/aap/` and bind-mounted into various running containers.

1. To view the mounts associated with a container run the following command:

   ```
   $ podman ps --format "{{.ID}}\t{{.Command}}\t{{.Names}}"
   ```

   Example output:

```
89e779b81b83    run-postgresql    postgresql
4c33cc77ef7d    run-redis    redis
3d8a028d892d    /usr/bin/receptor...    receptor
09821701645c    /usr/bin/launch_a...    automation-controller-rsyslog
a2ddb5cac71b    /usr/bin/launch_a...    automation-controller-task
fa0029a3b003    /usr/bin/launch_a...    automation-controller-web
20f192534691    gunicorn --bind 1...    automation-eda-api
f49804c7e6cb    daphne -b 127.0.0...    automation-eda-daphne
d340b9c1cb74    /bin/sh -c nginx ...    automation-eda-web
111f47de5205    aap-eda-manage rq...    automation-eda-worker-1
171fcb1785af    aap-eda-manage rq...    automation-eda-worker-2
049d10555b51    aap-eda-manage rq...    automation-eda-activation-worker-1
7a78a41a8425    aap-eda-manage rq...    automation-eda-activation-worker-2
da9afa8ef5e2    aap-eda-manage sc...    automation-eda-scheduler
8a2958be9baf    gunicorn --name p...    automation-hub-api
0a8b57581749    gunicorn --name p...    automation-hub-content
68005b987498    nginx -g daemon o...    automation-hub-web
cb07af77f89f    pulpcore-worker    automation-hub-worker-1
a3ba05136446    pulpcore-worker    automation-hub-worker-2
```

2. Run the following command:

```
$ podman inspect <container_name> | jq -r .[].Mounts[].Source
```

Example output:

```
/home/aap/.local/share/containers/storage/volumes/receptor_run/_data
/home/aap/.local/share/containers/storage/volumes/redis_run/_data
/home/aap/aap/controller/data/rsyslog
/home/aap/aap/controller/etc/tower.key
/home/aap/aap/controller/etc/conf.d/callback_receiver_workers.py
/home/aap/aap/controller/data/job_execution
/home/aap/aap/controller/nginx/etc/controller.conf
/home/aap/aap/controller/etc/conf.d/subscription_usage_model.py
/home/aap/aap/controller/etc/conf.d/cluster_host_id.py
/home/aap/aap/controller/etc/conf.d/insights.py
/home/aap/aap/controller/rsyslog/run
/home/aap/aap/controller/data/projects
/home/aap/aap/controller/etc/settings.py
/home/aap/aap/receptor/etc/receptor.conf
/home/aap/aap/controller/etc/conf.d/execution_environments.py
/home/aap/aap/tls/extracted
/home/aap/aap/controller/supervisor/run
/home/aap/aap/controller/etc/uwsgi.ini
/home/aap/aap/controller/etc/conf.d/container_groups.py
/home/aap/aap/controller/etc/launch_awx_task.sh
/home/aap/aap/controller/etc/tower.cert
```

3. If the `jq` RPM is not installed, install it by running the following command:

```
$ sudo dnf -y install jq
```

Troubleshoot your Operator-based deployment of Ansible Automation Platform

Use the commands and procedures in this section to diagnose and resolve common issues with your Ansible Automation Platform deployment on OpenShift Container Platform. Topics include viewing logs, inspecting resources, and collecting diagnostic data for Red Hat Support.

Understand the automation controller operator logs

If an **AutomationController** instance fails to deploy, check the `automation-controller-operator` container logs. These logs contain the installer role output required to debug deployment issues.

View events in the OpenShift Container Platform

You can view events in the OpenShift Container Platform web console to monitor for errors and troubleshoot issues. This helps you quickly diagnose problems by examining the status of custom resources and their related events.

You can debug by first reviewing the status conditions of the Ansible Automation Platform custom resource (CR) and then checking any nested CRs for errors.

Procedure

1. Log in to the OpenShift Container Platform web console.
2. In the navigation menu, select **Home › Events**.
3. Select your project from the project list.
4. To view events for a specific resource, navigate to that resource's page. Many resource pages, such as pods and deployments, have their own **Events** tab.
5. Select a resource to bring you to the **Pod Details** page.

Result

Check the **Conditions** section on the **Pod details** page to confirm no errors are listed in the **Message** column.

View operator logs

The following procedure is an example of how to view the logs for an `automation-controller-operator` pod.

Procedure

1. To find the pod name, run:

```
oc get pods | grep operator
```

2. To view the logs for the pod, run:

```
oc logs <operator-pod-name> -f
```

   a. Alternatively, to view the logs without first getting the pod name, run:

```
 oc logs deployments/automation-controller-operator-controller-manager -c
automation-controller-manager -f
```

Configure log verbosity

You can enable task output for debugging on any custom resources (CRs) by setting `no_log` to `false` in the component section of the `AnsibleAutomationPlatform` CR.

The logs then show output for any failed tasks that originally had `no_log` set to `true`. All Ansible Automation Platform components (automation controller, automation hub, and Event-Driven Ansible) support the `no_log` setting.

Procedure

1. Edit the Ansible Automation Platform CR and set the `no_log` field to `false` for the component you want to debug.

   For automation controller:

```
 apiVersion: aap.ansible.com/v1alpha1
kind: AnsibleAutomationPlatform
metadata:
  name: myaap
spec:
  controller:
    no_log: false
```

   For automation hub:

```
apiVersion: aap.ansible.com/v1alpha1
kind: AnsibleAutomationPlatform
metadata:
  name: myaap
spec:
  hub:
    no_log: false
```

For Event-Driven Ansible

```
apiVersion: aap.ansible.com/v1alpha1
kind: AnsibleAutomationPlatform
metadata:
  name: myaap
spec:
  eda:
    no_log: false
```

NOTE:
This might expose sensitive data in the logs. On production clusters, this value must generally be set to `true` unless you are actively debugging an issue.

2. To increase the Ansible Playbook verbosity from the operator, set the verbosity level using an annotation on the Ansible Automation Platform CR:

```
apiVersion: aap.ansible.com/v1alpha1
kind: AnsibleAutomationPlatform
metadata:
  name: myaap
  annotations:
    ansible.sdk.operatorframework.io/verbosity: "4"
spec:
  # ... component configuration ...
```

Inspect a OpenShift Container Platform resource

To inspect a OpenShift Container Platform resource, you must use the `oc` command to get a summary or the full YAML definition of the resource.

Procedure

1. To view a human-readable summary of a resource, run:

```
oc describe -n <namespace> <resource> <resource-name>
```

2. To view the complete YAML definition of a resource, use the `-o yaml` flag:

```
oc get -n <namespace> <resource> <resource-name> -o yaml
```

   - For example, to get the YAML for the `automationcontroller` custom resource, run:

```
oc get -n aap automationcontroller aap -o yaml
```

Core Ansible Automation Platform resources

The following table lists and describes the core custom resources (CRs) that the Ansible Automation Platform Operator manages. Understanding these resources will help you with advanced troubleshooting and configuration.

Resource name	Description
`ansibleautomationplatform`	CR for deploying the entire Ansible Automation Platform.
`ansibleautomationplatformbackup`	CR for creating backups of the entire Ansible Automation Platform instance.
`ansibleautomationplatformrestore`	CR for restoring the entire Ansible Automation Platform instance from a backup.

Resource name	Description
`automationcontroller`	CR defining the desired state of an automation controller instance.
`automationcontrollerbackup`	CR for creating backups of automation controller data and configuration.
`automationcontrollerrestore`	CR for restoring the automation controller from a backup.
`automationhub`	CR for deploying an automation hub (Galaxy) instance.
`automationhubbackup`	CR for creating backups of automation hub data and configuration.
`automationhubrestore`	CR for restoring automation hub from a backup.
`eda`	CR for deploying an Event-Driven Ansible (EDA) instance.
`edabackup`	CR for creating backups of EDA data and configuration.
`edarestore`	CR for restoring EDA from a backup.
`ansiblelightspeed`	CR for deploying an Red Hat Ansible Lightspeed instance.

Standard Kubernetes resources

Standard Kubernetes resources are a core part of the OpenShift Container Platform. The following table describes the standard resources you can inspect to troubleshoot the state and configuration of an application.

Resource name	Description
`pod`	Smallest deployable unit containing one or more containers running the application workloads.
`deployment`	Manages pod configuration and scaling.

Resource name	Description
`pvc`	A PersistentVolumeClaim (PVC) is a request for storage resources, used for persistent data storage.
`service`	Exposes pods as network services with stable IP addresses and DNS names within the cluster.
`ingress`	Manages external HTTP and HTTPS access to services within the cluster.
`route`	An OpenShift-specific resource for exposing services externally (similar to an ingress).
`secrets`	Stores sensitive data like passwords, tokens, and certificates.
`serviceaccount`	Provides identity for processes running in pods to access permissions to other Kubernetes resources.

Collect diagnostic data

Use the `oc adm must-gather` command to collect comprehensive diagnostic data about your cluster and the Ansible Automation Platform components. This data is essential when contacting Red Hat Support.

Procedure

1. To start the `must-gather` tool, run:

```
oc adm must-gather --image=registry.redhat.io/ansible-automation-platform-25/aap-must-gather-rhel8
```

NOTE:
For version 2.6, the base image name changes to `registry.redhat.io/ansible-automation-platform-26/aap-must-gather-rhel9`.

2. View the collected data, use the `omc` tool to query the `must-gather` tarball as if it were a live cluster.

```
omc use <path-to-must-gather>
omc get pods
```

Related information
How to collect diagnostics data from Ansible Automation Platform running on OpenShift?
How to generate a sos report within nodes without SSH in OpenShift Container Platform 4

Troubleshoot your RPM-based deployment of Ansible Automation Platform

Resolve common installation issues and errors that can occur when installing RPM-based Ansible Automation Platform. Learn how to generate diagnostic logs to identify problems.

Gather Ansible Automation Platform logs

Run the setup script with the `-s` flag to collect diagnostic data from all nodes. This generates an `sos` report used by Red Hat Technical Support to resolve service requests.

Procedure

1. Access the installation program folder with the inventory file and run the installation program setup script the following command:

   `$ ./setup.sh -s`

   With this command, you can connect to each node present in the inventory, install the `sos` tool, and generate new logs.

   NOTE:
   If you are running the setup as a non-root user with sudo privileges, you can use the following command:

   ```
   $ ANSIBLE_BECOME_METHOD='sudo'
   ANSIBLE_BECOME=True ./setup.sh -s
   ```

2. *Optional*: If required, change the location of the `sos` report files.

   The `sos` report files are copied to the `/tmp` folder for the current server. To change the location, specify the new location by using the following command:

```
$ ./setup.sh -e 'target_sos_directory=/path/to/files' -s
```

Where `target_sos_directory=/path/to/files` is used to specify the destination directory where the `sos` report will be saved. In this case, the `sos` report is stored in the directory `/path/to/files`.

3. Gather the files described on the playbook output and share with the support engineer or directly upload the `sos` report to Red Hat.

   To create an `sos` report with additional information or directly upload the data to Red Hat, use the following command:

```
$ ./setup.sh -e 'case_number=0000000' -e 'clean=true' -e 'upload=true' -s
```

Parameter Reference Table

Parameter	Description	Default value
`case_number`	Specifies the support case number that you want.	-
`clean`	Obfuscates sensitive data that might be present on the `sos` report.	`false`
`upload`	Automatically uploads the `sos` report data to Red Hat.	`false`

Related information
KCS article:What is an sos report and how to create one in Red Hat Enterprise Linux?

Troubleshoot automation controller

Useful troubleshooting information for automation controller.

Unable to login to automation controller through HTTP

Access to automation controller is intentionally restricted through a secure protocol (HTTPS).

In cases where your configuration is set up to run an automation controller node behind a load balancer or proxy as "HTTP only", and you only want to access it without SSL/TLS (for troubleshooting, for example), you must add the following settings in the `custom.py` file located at `/etc/tower/conf.d` of your automation controller instance:

```
SESSION_COOKIE_SECURE = False
CSRF_COOKIE_SECURE = False
```

If you change these settings to `false` it enables automation controller to manage cookies and login sessions when using the HTTP protocol. You must do this on every node of a cluster installation.

To apply the changes, run:

```
automation-controller-service restart
```

Unable to run a job

If you are unable to run a job from a playbook, review the playbook YAML file. When importing a playbook, either manually or by a source control mechanism, remember that the host definition is controlled by automation controller and should be set to `hosts:all`.

Playbooks do not show up in the Job Template list

If your playbooks are not showing up in the **Job Template** list, check the following:

- Ensure that the playbook is valid YML and can be parsed by Ansible.
- Ensure that the permissions and ownership of the project path (`/var/lib/awx/projects`) is set up so that the "awx" system user can view the files. Run the following command to change the ownership:

```
chown awx -R /var/lib/awx/projects/
```

Playbook stays in pending

If you are attempting to run a playbook job and it stays in the `Pending` state indefinitely, try the following actions:

- Ensure that all supervisor services are running through `supervisorctl status`.
- Ensure that the `/var/ partition` has more than 1 GB of space available. Jobs do not complete with insufficient space on the `/var/` partition.
- Run `automation-controller-service restart` on the automation controller server.

If you continue to have issues, run `sosreport` as root on the automation controller server, then file a support request with the result.

Prevent installation failures when reusing an external database

When reusing an external database for clustered installations, you must manually clear the database before performing subsequent installations.

Instances have been reported where reusing the external database during subsequent installation of nodes causes installation failures.

Example

You perform a clustered installation. Then, you need to do this again and perform a second clustered installation reusing the same external database, only this subsequent installation failed.

When setting up an external database that has been used in a prior installation, you must manually clear the database used for the clustered node before any additional installations can succeed.

View private EC2 VPC instances in the automation controller inventory

By default, automation controller only shows instances in a VPC that have an Elastic IP (EIP) associated with them.

Procedure

1. From the navigation panel, select **Automation Execution > Infrastructure > Inventories**.
2. Select the inventory that has the **Source** set to **Amazon EC2**, and click the **Source** tab.
   In the **Source Variables** field, enter:

```
vpc_destination_variable: private_ip_address
```

3. Click **Save** and trigger an update of the group.

Result

Once you complete these steps, you can see your VPC instances.

NOTE:
Automation controller must be running inside the VPC with access to those instances if you want to configure them.

Troubleshoot Red Hat Edge Manager

When working with devices in Red Hat Edge Manager, you might see issues related to configuration, connectivity, or deployment. Troubleshooting these issues requires understanding how device configurations are applied, how to check logs, and how to verify communication between the device and service.

View a device's effective target configuration

The device manifest returned by the `flightctl get device` command still only has references to external configuration and secret objects. Only when the device agent queries the service, the service replaces the references with the actual configuration and secret data.

While this better protects potentially sensitive data, it also makes troubleshooting faulty configurations hard. This is why a user can be authorized to query the effective configuration as rendered by the service to the agent.

- To query the effective configuration, use the following command:

```
flightctl get device/${device_name} --rendered | jq
```

Generate a device log bundle

Use the integrated `flightctl-must-gather` script directly on the device to generate a comprehensive bundle of diagnostic logs. This log bundle, in a standard .tar format, provides the necessary data to debug the device agent and assists in efficient troubleshooting and bug reporting.

- Run the following command on the device and include the .tar file in the bug report.

> **NOTE:**
> This depends on an SSH connection to extract the .tar file.

```
sudo flightctl-must-gather
```

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Version 3, 29 June 2007

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