ANSIBLE BEST PRACTICES - WINDOWS

CLASS PAGE

https://jruels.github.io/ansible-windows-best

Dynamic Inventory

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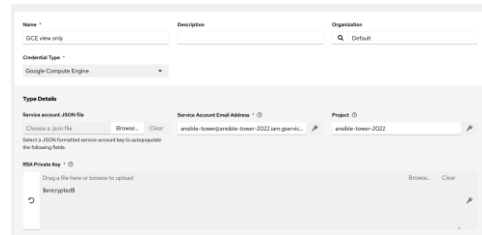
DYNAMIC INVENTORY - CREDENTIALS

A dynamic inventory requires credentials to authenticate to the cloud API.

- Create a new service account in GCP
- Download the JSON file

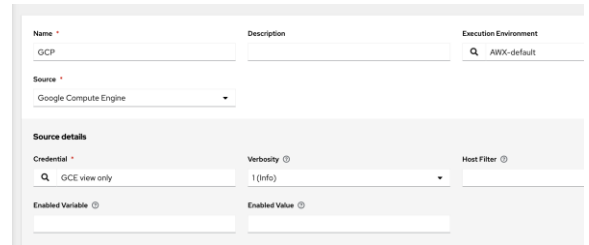
- In Automation Platform create a new credential and provide the required information:



DYNAMIC INVENTORY - SOURCES

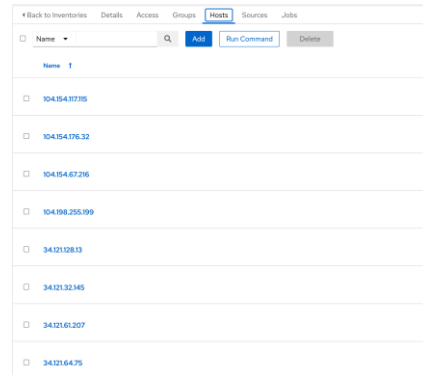
After setting up authentication, you must create a new inventory with the dynamic inventory source defined.

- Create a new inventory
- Click the "Sources" tab
- Add a new source



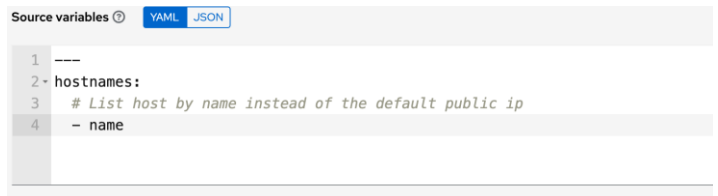
DYNAMIC INVENTORY – PUBLIC IP (DEFAULT)

Ansible Automation Platform will list the dynamic hosts by IP address by default. To resolve this, you can add a source variable



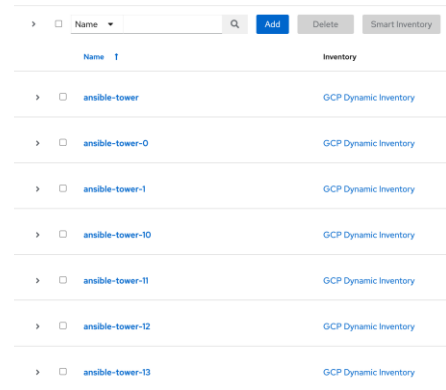
DYNAMIC INVENTORY - CONFIG

Ansible Automation Platform will list the dynamic hosts by IP address by default. To resolve this, you can add a source variable



DYNAMIC INVENTORY - HOSTNAME

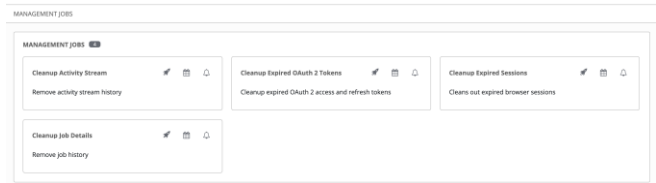
Ansible Automation Platform will list the dynamic hosts by IP address by default. To resolve this, you can add a source variable



Management of Ansible Automation Platform

MANAGEMENT JOBS

Management Jobs assist in the cleaning of old data from the controller, including system tracking information, tokens, job histories, and activity streams. You can use this if you have specific retention policies or need to decrease the storage used by your controller database. Click Management Jobs from the left navigation bar.



MANAGEMENT JOBS

Several job types are available for you to schedule and launch:

- Cleanup Activity Stream: Remove activity stream history older than a specified number of days
- Cleanup Expired OAuth 2 Tokens: Remove expired OAuth 2 access tokens and refresh tokens
- Cleanup Expired Sessions: Remove expired browser sessions from the database
- Cleanup Job Details: Remove job history older than a specified number of days

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- Cleanup Job Details: Remove job history older than a specified number of days

SCHEDULING

Ansible Automation Platform supports scheduling jobs. They can be run periodically.

- If you are setting up a template, a project, or an inventory source, clicking on the Schedules tab allows you to configure schedules for these resources. Once schedules are created, they are listed by:
- Name: Clicking the schedule name opens its details
- Type: Identifies whether the schedule is associated with a source control update or a system-managed job schedule
- Next Run: The next scheduled run of this task

SCHEDULING

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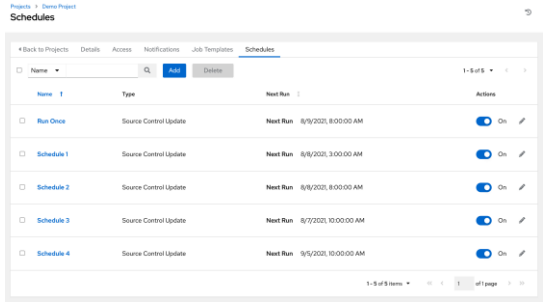


SCHEDULING

Create a new schedule

- Click the Schedules tab of the resource you are configuring (template, project, or inventory source).
- Click the Add button, which opens the Create Schedule window.

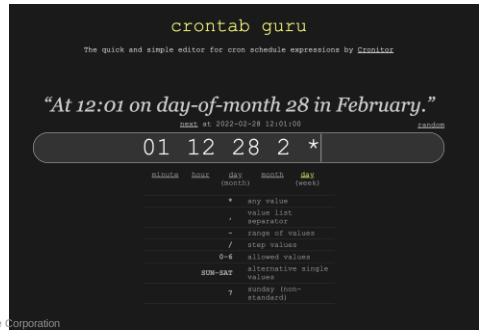
SCHEDULING

The following details are required to create a schedule.

- Name (required)
- Start Date (required)
- Start Time (required)
- Local Time Zone - The entered Start Time should be in this time zone
- Repeat Frequency - Appropriate scheduling options display depending on the frequency you select

SCHEDULING

TIP: Using https://crontab.guru can help with scheduling expressions



Troubleshooting Ansible Tower and Reviewing Logs

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OBJECTIVES

- Perform simple troubleshooting of the Red Hat Ansible Automation Platform installation
- Identify log files for Red Hat Automation Platform services

RED HAT AAP - TROUBLESHOOTING

Troubleshooting Red Hat Ansible Automation Platform

- In this module, we will look at the Red Hat AAP service itself.
- This will focus on the components that make up Red Hat AAP, not playbook debugging.
- When troubleshooting playbooks, look at your job output first.

RED HAT AAP - COMPONENTS

Components of Red Hat AAP

There are four main components managed together:

- Nginx — Provides web server for the UI and API
- PostgreSQL — Internal relational database server
- supervisord — Process control system that manages the application: running jobs, etc.
- Redis — An in-memory data structure store, used as a distributed, in-memory key–value database, cache and message broker

RED HAT AAP – NETWORK CONFIGURATION

Network Ports and Component Communication

- These services communicate with each other using normal network protocols.
  - Nginx 80/tcp and 443/tcp
  - PostgreSQL 5432/tcp
  - Redis 6379/tcp
- If you are running a multi-machine clustered AAP installation, these may need to be exposed to allow the different servers of your cluster to talk to each other.
- This is why setting good passwords for PostgreSQL in your setup inventory is important.
- In the single-machine integrated database installation demonstrated here, you only need to expose 80/tcp and 443/tcp.

Controlling and Checking AAP Services

The **automation-controller-service** command can be used to check the status of AAP services and control them:

- **automation-controller-service status** Check if the services are running properly
- **automation-controller-service start** Start all services
- **automation-controller-service stop** Stop all services
- **automation-controller-service restart** Restart all services

RED HAT AAP – SERVICES

Controlling and Checking Ansible Tower Services

- The Red Hat AAP web application is a collection of Django-based components managed by **supervisord**.
- You can use **supervisord status** to check the status of these services:

```
[root@tower ~]# supervisorctl status
exit-event-listener                  RUNNING  pid 4111, uptime 0:42:55
tower-processes:awx-callback-receiver    RUNNING  pid 4116, uptime 0:42:55
tower-processes:awx-celeryd              RUNNING  pid 4118, uptime 0:42:55
tower-processes:awx-celeryd-beat         RUNNING  pid 4117, uptime 0:42:55
tower-processes:awx-channels-worker      RUNNING  pid 4112, uptime 0:42:55
tower-processes:awx-daphne               RUNNING  pid 4115, uptime 0:42:55
tower-processes:awx-uwsgi                RUNNING  pid 4113, uptime 0:42:55
```

RED HAT AAP – CONFIG FILES

Key Configuration and Data Files

- The main configuration files for AAP are kept in the **/etc/tower** directory.
  - The most important is **settings.py**, which specifies the locations for job output, storage, and other key directory locations.
  - You should not need to edit these manually, use **setup.sh**.
- A number of key data files are kept in the **/var/lib/awx** directory:
  - **/var/lib/awx/projects** is where your project files are downloaded
  - **/var/lib/awx/job_status** stores job status output from playbook runs
  - **/var/lib/awx/public/static** is the static root directory for the Django applications
  - You should not need to manage these manually either, but your AAP can have problems if the storage device for **/var/lib/awx** becomes full.

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RED HAT AAP – LOG FILES

Red Hat AAP Log Files

- The **/var/log/tower** directory stores logs for the key servers supporting the application:
  - **tower.log** The main log file for Ansible Tower.
  - **task_system.log** Logs various system housekeeping tasks.
  - **setup*.log** Log files from setup.sh when run to install, backup, or restore.
- The **/var/log/supervisor** directory stores logs for the Django-based applications:
  - **supervisord.log** The main log file for **supervisord**.
  - Other files contain information about the activity of various applications.

RED HAT AAP – COMMON TROUBLESHOOTING

Common Troubleshooting Scenarios

- **Problems running playbooks:**
  - Playbooks are confined to /tmp on the Ansible AAP server when run.
  - This limits resources they can access and can impact tasks delegated to localhost.
- **Problems connecting to managed hosts:**
  - Verify that you can establish an SSH connection (or WinRM with Windows hosts) to the managed host.
  - Review your inventory file and check host names, IP addresses, and connection variables.
- **Playbook in the project does not appear in the list when configuring a job template:**
  - Make sure the YAML syntax of the playbook is correct and can be parsed by Ansible
  - **/var/lib/awx/projects** should allow user awx to view the files

RED HAT AAP – COMMON TROUBLESHOOTING

Common Troubleshooting Scenarios

- **Playbook stays in "Pending" state:**
  - Ensure that Ansible Tower has enough memory available.
  - Use **supervisorctl status** to make sure the Django applications are running.
  - Ensure that **/var** has at least 1GB of free space.
  - Try **automation-platform-service restart**

- **Provided hosts list is empty ("Skipping: No Hosts Matched"):**
  - Make sure the **hosts** declaration in your play matches the group or host names in the inventory.
  - Make sure group names have no spaces in them. Underscores are valid.
  - If you specified a limit in the job template, make sure its syntax is valid and matches something in your inventory.

RED HAT AAP – COMMON TROUBLESHOOTING

Common Troubleshooting Scenarios

If you need to change the password for the built-in admin superuser:

- Log in to the Ansible Automation Platform server as the Linux user **root** or **awx**.
- Run **awx-manage changepassword admin**.

```
[awx@tower ~]$ awx-manage changepassword admin
Changing password for user 'admin'
Password:
Password (again):
Password changed successfully for user 'admin'
[awx@tower ~]$
```

POP QUIZ: Ansible

What is Ansible?

A. An automation platform
B. A programming language
C. A GUI interface for programming language interpreter
D. A fictional device
E. All of the above
F. I don't know

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ANSWER: A

POP QUIZ: Ansible

What language is an Ansible playbook written in?

A. JSON
B. XML
C. YAML
D. HTML
E. I don't know

POP QUIZ: Ansible

What language is an Ansible playbook written in?

A. JSON
B. XML
C. YAML
D. HTML
E. I don't know

ANSWER: C

POP QUIZ: Ansible

Which command is used to run a playbook called `install.yml`

A. ansible `install.yml`
B. ansible –playbook `install.yml`
C. ansible-playbook `install.yml`
D. ansible –p `install.yml`
E. I don't know

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ANSWER: C

POP QUIZ: Ansible

Ansible playbooks are the basis for a really simple configuration management and multi-machine deployment system, unlike any that already exist, and one that is very well suited to deploying complex applications.

A. True
B. False

POP QUIZ: Ansible

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A. True
B. False

ANSWER: A

POP QUIZ: Ansible

Which returns an Ansible fact?

A. The facts module
B. It is a side effect of the ping module
C. Facts are gathered when you run any module in ad-hoc mode
D. The setup module

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ANSWER: A

POP QUIZ: Ansible

Which month (year) Ansible initially released?

A. January 2012
B. February 2012
C. March 2012
D. April 2012

POP QUIZ: Ansible

Which month (year) Ansible initially released?

A. January 2012
B. February 2012
C. March 2012
D. April 2012

ANSWER: B

POP QUIZ: Ansible

Which argument will you use to specify a variable for your Ansible playbook?

A. -c
B. -d
C. -e
D. None of them

POP QUIZ: Ansible

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A. -c
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ANSWER: C

POP QUIZ: Ansible

What is Ansible Galaxy

A. $ ansible-galaxy username.role_name
B. $ ansible-galaxy install username.role_name
C. $ galaxy install username.role_name
D. None

POP QUIZ: Ansible

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B. $ ansible-galaxy install username.role_name
C. $ galaxy install username.role_name
D. None

ANSWER: B

POP QUIZ: Ansible

What are the things Ansible can do?

A. Task automation
B. Configuration management
C. Deploy of application
D. All of the above

POP QUIZ: Ansible

What are the things Ansible can do?

A. Task automation
B. Configuration management
C. Deploy of application
D. All of the above

ANSWER: D

POP QUIZ: Ansible

What is the use of ask_pass module

A. ansible-ask-pass
B. ansible-passbook --ask-pass
C. ansible-playbook –ask-pass
D. Both A & B

POP QUIZ: Ansible

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ANSWER: C