

Oracle Linux Automation Manager 1.0

Getting Started



F44883-10
July 2022



Oracle Linux Automation Manager 1.0 Getting Started,
F44883-10

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Contents

Preface

Conventions	v
Documentation Accessibility	v
Access to Oracle Support for Accessibility	v
Diversity and Inclusion	v

1 About Oracle Linux Automation Manager and Oracle Linux Automation Engine

About the Oracle Linux Automation Manager	1-1
Notable Updates and New Features	1-1
Notable Updates and New Features in Release 1.0.1	1-2

2 Oracle Linux Automation Manager Requirements

Oracle Linux Automation Manager Hardware Requirements	2-1
Enabling Access to the Oracle Linux Automation Manager Packages	2-1
Enabling Channels with ULN	2-1
Enabling Repositories with the Oracle Linux Yum Server	2-2
Setting Up the Network	2-2
Setting Up the Firewall Rules	2-3

3 Installing Oracle Linux Automation Manager

Installing Oracle Linux Automation Manager	3-1
Installing Oracle Linux Automation Manager CLI	3-3

4 Setting Up Permissions for Organizations, Teams, and Users

Setting Up Organizations	4-1
Setting Up Teams	4-2
Setting Up Users	4-3

5 Setting Up Resources

Setting Up Projects	5-1
Accessing a Local Oracle Linux Automation Engine Playbook	5-1
Accessing a Remote Oracle Linux Automation Engine Playbook on Git	5-2
Setting Up Inventories and Hosts	5-3
Setting Up an Inventory	5-3
Setting Up a Host	5-3
Running One-Off Commands Against a Host	5-4
Setting Up Credentials	5-4
Setting Up Git Credentials	5-4
Setting Up Inventory Machine Credentials	5-5
Setting Up Credentials Permissions	5-5
Setting Up Job Templates	5-6
Setting Up a Job Template	5-6
Setting Up and Running Sample Playbooks	5-8

6 Using Views

Using the Dashboard	6-1
Viewing Jobs	6-2
Viewing Scheduled Activities	6-3
About My View	6-3
Viewing Activity Streams	6-3

7 Administration Tasks

About Administering Oracle Linux Automation Manager	7-1
Starting, Stopping, and Restarting Oracle Linux Automation Manager	7-1
Accessing Log Files	7-1
Accessing Application Status	7-2
Upgrading Oracle Linux Automation Manager	7-2
Configuring New Credential Types	7-3
Configuring Notification Templates	7-3
Creating and Scheduling Management Jobs	7-4
Configuring Settings	7-5

Preface

[Oracle Linux Automation Manager 1.0: Getting Started](#) describes how to use Oracle Linux Automation Manager, which is a task engine and Web interface. Detail is provided about installing, configuring and using Oracle Linux Automation Manager on Oracle Linux.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <https://www.oracle.com/corporate/accessibility/>.

For information about the accessibility of the Oracle Help Center, see the Oracle Accessibility Conformance Report at <https://www.oracle.com/corporate/accessibility/templates/t2-11535.html>.

Access to Oracle Support for Accessibility

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <https://www.oracle.com/corporate/accessibility/learning-support.html#support-tab>.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry

standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1

About Oracle Linux Automation Manager and Oracle Linux Automation Engine

Oracle Linux Automation Manager version 1.0, based on the open source projects Ansible and AWX, is a task engine and Web interface for scheduling and running Oracle Linux Automation Engine playbook tasks on the inventories the playbooks interact with. The Oracle Linux Automation Engine is an automation tool for deploying software, configuring systems, and orchestrating tasks such as upgrades and updates, in the form of playbooks.

Oracle Linux Automation Manager version 1.0 is based on the AWX version 15.0.1 open-source software. The AWX development branch and documentation are maintained at <https://github.com/ansible/awx/tree/15.0.1>.

Oracle Linux Automation Engine is included in Oracle Linux Automation Manager version 1.0 and is based on the Ansible version 2.9.21 open-source software. The Ansible development branch and documentation are maintained at <https://github.com/ansible/ansible/tree/v2.9.21>.

Ansible is a registered trademark of Red Hat, Inc. in the United States and other countries.

About the Oracle Linux Automation Manager

Oracle Linux Automation Manager provides features that allow your organization to effectively manage infrastructure configuration through a browser user interface. Using Oracle Linux Automation Manager you can:

- Create and configure permissions for organizations, users, and teams that use Oracle Linux Automation Manager. You must have at least one organization before you can create a project.
- Create a project in Oracle Linux Automation Manager that imports Oracle Linux Automation Engine playbooks from various sources, such as the local machine which runs Oracle Linux Automation Manager or from a remote git repository.
- Create an inventory which specifies the hosts where playbook tasks run. You can do this manually or import an Oracle Linux Automation Engine inventory file.
- Create credentials which contains SSH authentication details for the hosts where the playbook tasks will run and any required credentials for Oracle Linux Automation Engine playbooks in remote repositories specified in projects.
- Create job templates that specify the projects and playbooks to run.
- Manually launch or schedule the launch of job templates and review the results.

Notable Updates and New Features

This section contains information on notable patch and release updates and new features. For more information about upgrading Oracle Linux Automation Manager, see [About Administering Oracle Linux Automation Manager](#).

Notable Updates and New Features in Release 1.0.1

Some highlighted features in Oracle Linux Automation Manager are:

- **Oracle Linux Automation Manager REST API:** You can now use the REST API to programmatically interact with Oracle Linux Automation Manager servers. The API is based on AWX version 15.0.1 open-source software and all upstream features are exposed in the REST API; however, support is limited to those features discussed in Getting Started With Oracle Linux Automation Manager. For more information, see [Oracle Linux Automation Manager 1.0: CLI and API Reference Guide](#).
- **Oracle Linux Automation Manager CLI:** You can now install and use the Oracle Linux Automation Manager CLI to interact with Oracle Linux Automation Manager servers. The CLI is based on AWX version 15.0.1 open-source software and all upstream features are exposed in the CLI; however, support is limited to those features discussed in Getting Started With Oracle Linux Automation Manager. For more information, see [Oracle Linux Automation Manager 1.0: CLI and API Reference Guide](#).
- **Oracle Cloud Infrastructure Ansible Collection credential type:** Oracle Linux Automation Manager now includes the OCI credential type for accessing the OCI Ansible collection within an Oracle Linux Automation Engine playbook. If your Oracle Linux Automation Engine playbook uses the OCI Ansible collection, see <https://docs.oracle.com/iaas/Content/API/SDKDocs/ansible.htm> and find the setup instructions relating to AWX. The OCI credential type removes the need to manually create the OCI credential type as described in the [Using Oracle Cloud Infrastructure with Ansible Tower and AWX](#) blog post.

2

Oracle Linux Automation Manager Requirements

This chapter describes the requirements for the system to be used in an installation of Oracle Linux Automation Manager. This chapter also discusses how to enable the repositories to install the Oracle Linux Automation Manager packages.

Oracle Linux Automation Manager Hardware Requirements

Oracle Linux Automation Manager must be installed on a single machine using 64-bit x86 hardware only and running Oracle Linux 8.

Oracle Linux Automation Manager does not require specific hardware; however, certain operations are memory intensive and require a certain amount of disk space and CPU. A minimum configuration is:

- 4GB RAM
- 40GB disk space (170GB is recommended)
- 1 two core CPU

These requirements are for the absolute minimum to run Oracle Linux Automation Manager. You must determine any additional hardware requirements and capacity based on your operational needs. For more information, see the upstream documentation.

Inventory Hardware

Oracle Linux Automation Manager can connect and perform tasks on most machines that can establish and accept an ssh connection.

Enabling Access to the Oracle Linux Automation Manager Packages

This section contains information on setting up the locations for the operating system on which you want to install the Oracle Linux Automation Manager software packages.

The Oracle Linux Automation Manager packages for Oracle Linux 8 are available on the Oracle Linux yum server in the `ol8_automation` repository, or on the Unbreakable Linux Network (ULN) in the `ol8_x86_64_automation` channel. However there are also dependencies across other repositories and channels, and these must also be enabled on each system where Oracle Linux Automation Manager is installed.

Enabling Channels with ULN

If you are registered to use ULN, use the ULN web interface to subscribe the system to the appropriate channels.

To subscribe to the ULN channels:

1. Log in to <https://linux.oracle.com> with your ULN user name and password.
2. On the Systems tab, click the link named for the system in the list of registered machines.
3. On the System Details page, click **Manage Subscriptions**.
4. On the System Summary page, select each required channel from the list of available channels and click the right arrow to move the channel to the list of subscribed channels. Subscribe the system to the following channels:
 - `ol8_x86_64_automation`
 - `ol8_x86_64_addons`
 - `ol8_x86_64_baseos_latest`
 - `ol8_x86_64_UEKR6`
 - `ol8_x86_64_appstream`
5. Click **Save Subscriptions**.

Enabling Repositories with the Oracle Linux Yum Server

If you are using the Oracle Linux yum server for system updates, enable the required yum repositories.

To enable the yum repositories:

1. Use the `dnf config-manager` tool to enable the `ol8_baseos_latest` repository.

```
sudo dnf config-manager --enable ol8_baseos_latest
```

 **Note:**

This repository is typically enabled by default.

2. Install `oraclelinux-automation-manager-release-el8`:

```
sudo dnf install oraclelinux-automation-manager-release-el8
```

3. Enable the following yum repositories:

- `ol8_automation`
- `ol8_addons`
- `ol8_UEKR6`
- `ol8_appstream`

Use the `dnf config-manager` tool to enable the yum repositories:

```
sudo dnf config-manager --enable ol8_automation ol8_addons ol8_UEKR6  
ol8_appstream
```

Setting Up the Network

This section contains information about the generic networking requirements for an Oracle Linux Automation Manager host and shows you an example of how to set up

the network to enable the communication between the Oracle Linux Automation Manager host and the inventory hosts in an environment.

Setting Up the Firewall Rules

Oracle Linux 8 installs and enables `firewalld`, by default. Example commands to open the ports and to set up the firewall rules are provided below.

On the Oracle Linux Automation Manager host, run the following `firewalld` commands:

```
sudo firewall-cmd --add-service=http --permanent
sudo firewall-cmd --add-service=https --permanent
sudo firewall-cmd --reload
```

3

Installing Oracle Linux Automation Manager

This chapter discusses how to prepare a new host to be used in an Oracle Linux Automation Manager deployment. When a host is prepared, it must be installed with the Oracle Linux Automation Manager software packages.

This chapter shows you how to set up a host and install the Oracle Linux Automation Manager software.

Installing Oracle Linux Automation Manager

This section discusses installing the Oracle Linux Automation Manager.

To set up the host:

1. Install the `ol_automation` to install Oracle Linux Automation Manager.

```
sudo dnf install ol-automation-manager
```

Note:

The following error messages can be safely ignored as they do not indicate any failures:

```
ValueError: File context for /var/run/tower(/.*)? already defined  
[usr/lib/tmpfiles.d/*.conf:1] Line references path below legacy directory
```

2. Edit the `/etc/redis.conf` file to include the following lines:

```
unixsocket /var/run/redis/redis.sock  
unixsocketperm 775
```

3. Run the following script to start and set up the database:

```
sudo /var/lib/ol-automation-manager/ol-automation-manager-DB-init.sh
```

4. Prepare an Oracle Linux Automation Manager deployment as the `awx` user. Do the following:

- a. Run the following commands:

```
sudo su -l awx -s /bin/bash  
awx-manage migrate  
awx-manage createsuperuser --username admin --email email
```

In the previous example, *email* is the email address of the admin user.

- b. Enter and repeat the password for the admin user.

```
Password:  
Password (again):
```

- c. Run the following command:

```

awx-manage create_preload_data
awx-manage provision_instance --hostname=hostname or ip address
awx-manage register_queue --queue=queue --hostnames=hostname or ip
address
awx-manage setup_managed_credential_types

```

In the previous example, *hostname or ip address* is the hostname or IP address of the system running Oracle Linux Automation Manager. If hostname is used, the host must be resolvable.

- d. Exit the awx shell environment.

```
exit
```

5. Generate SSL certificates for NGINX:

 **Note:**

The following instruction explains how to create a self-signed certificate for use by NGINX as part of Oracle Linux Automation Manager. It is recommended that on production systems you use CA signed certificates for this purpose. For more information on working with SSL certificates, see [Oracle Linux: Managing Certificates and Public Key Infrastructure](#).

```
sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/tower/
tower.key -out /etc/tower/tower.crt
```

6. Remove any default configuration for NGINX. Edit `/etc/nginx/nginx.conf` to contain the following configuration::

```

user nginx;
worker_processes auto;
error_log /var/log/nginx/error.log;
pid /run/nginx.pid;

# Load dynamic modules. See /usr/share/doc/nginx/README.dynamic.
include /usr/share/nginx/modules/*.conf;

events {
    worker_connections 1024;
}

http {
    log_format main '$remote_addr - $remote_user [$time_local] "$request" '
        '$status $body_bytes_sent "$http_referer" '
        '"$http_user_agent" "$http_x_forwarded_for"';

    access_log /var/log/nginx/access.log main;

    sendfile on;
    tcp_nopush on;
    tcp_nodelay on;
    keepalive_timeout 65;
    types_hash_max_size 2048;

    include /etc/nginx/mime.types;
    default_type application/octet-stream;

```

```
# Load modular configuration files from the /etc/nginx/conf.d directory.  
# See http://nginx.org/en/docs/nginx_core_module.html#include  
# for more information.  
include /etc/nginx/conf.d/*.conf;  
}
```

 **Note:**

For advanced NGINX users, the Oracle Linux Automation Manager NGINX configuration file is located in `/etc/nginx/conf.d/ol-automation-manager-nginx.conf`. If you have an existing customized NGINX setup, ensure that you also apply the `ol-automation-manager-nginx.conf` settings.

7. Edit the `/etc/tower/settings.py` file and set the `CLUSTER_HOST_ID` parameter as follows:

```
CLUSTER_HOST_ID = "hostname or ip address"
```

8. Start the service:

```
sudo systemctl enable --now ol-automation-manager.service
```

Installing Oracle Linux Automation Manager CLI

You can install the Oracle Linux Automation Manager CLI on the same machine you installed the Oracle Linux Automation Manager server or on another Oracle Linux 8 machine. For information about installing the Oracle Linux Automation Manager CLI, see [Oracle Linux Automation Manager 1.0: CLI and API Reference Guide](#).

4

Setting Up Permissions for Organizations, Teams, and Users

This chapter describes how Oracle Linux Automation Manager enables administrators to create organizations, teams, and users where permissions can be allocated at each level. These permissions are based on role-based access controls.

Each level has the following functions:

- **Organizations:** Administrators can specify which organizations can run an Oracle Linux Automation Engine playbook on what inventory by associating an organization to a project and an inventory. An organization can specify multiple projects and inventories, but each project and inventory can specify only one organization.
- **Teams:** A team belongs to one organization and a team can specify default permissions that apply to any user assigned to the team.
- **Users:** A user can belong to one or more organizations or teams. Thus a user may have different permissions depending on which organization, team, and associated projects and inventory they are working with.

Table 4-1 Role-Based Access Control Role Descriptions

System Role	Description
Admin	Manages the entire system.
Executive	Runs assigned job templates.
Project Admin	Manages projects.
Inventory Admin	Manages inventory.
Credential Admin	Manages credentials.
Workflow Admin	Manages workflows.
Notification Admin	Manages notifications.
Job Template Admin	Manages job templates.
Auditor	Views the entire system.
Member	Indicates that a user is a member of a an organization or team.
Read	Views all aspects of a defined organization, team, inventory, project, or job template.

Setting Up Organizations

To setup an organization, do the following:

1. Log into Oracle Linux Automation Manager with an administrator user account.
2. Expand the navigation menu, and from the Access section, click **Organization**.

The Organizations page appears.

3. Click the **Plus** icon.

The New Organization page appears.

4. From the Name field, enter a name for your organization. For example, Organization 1.
5. Click **Save**.
6. Click the **Users** button.
7. Click the **Plus** icon.

The Add User's dialog appears.

8. Select the checkbox next to the user accounts you want to add to the organizations.
9. Click **Save**.
10. Click the **Permissions** button.
11. Click the **Plus** icon.

The Add Permissions dialog appears.

12. If you want to configure permissions for one or more users, click the *Users* button and select the checkbox beside the user accounts you want to configure.

A new section appears below where you can assign permissions to the user accounts you selected.

13. Click the **Select Roles** box and choose from one of the specified system roles.
14. If you want to configure permissions for one or more teams, click the *Teams* button and select the checkbox beside the team accounts you want to configure.

A new section appears below where you can assign permissions to the teams you selected.

15. Click the **Select Roles** box and choose from one of the specified system roles.
16. Click **Save**.

Setting Up Teams

To setup a team, do the following:

1. Log into Oracle Linux Automation Manager with an administrator user account.
2. Expand the navigation menu, and from the Access section, click *Teams*.

The Teams page appears.

3. Click the **Plus** icon.

The New Team page appears.

4. In the Name field, enter a name for your team. For example, Team 1.
5. From the Organization list, select an organization. For example, Organization 1.
6. Click **Select**.
7. Click **Save**.
8. Click the **Users** button.

9. Click the **Plus** icon.
The Add User's dialog appears.
10. Select the checkbox next to the user accounts you want to add to the team.
11. Click **Select**.
12. Click the **Permissions** button.
13. Click the **Plus** icon.
The Add Permissions dialog appears.
14. Click from the following options to select corresponding resources:
 - Job Templates
 - Projects
 - Inventories
 - Credentials
 - Organizations
15. As you select resources, you must then assign the resources to a role.

 **Note:**

Each resource can have different roles that can be assigned.

16. Click **Save**.

Setting Up Users

To setup a user, do the following:

1. Log into Oracle Linux Automation Manager with an administrator user account.
2. Expand the navigation menu, and from the Access section, click *Users*.
The Users page appears.
3. Click the **Plus** icon.
The New User page appears.
4. From the Name field, enter a name for your user. For example, User 1.
5. From the Organization list, select an organization. For example, Organization 1.
6. Click **Select**.
7. In the Email field, enter a valid email address.
8. In the Username field, enter a user name.
9. In the Password field, enter a password.
10. In the Confirm Password field, reenter the password.
11. From the User Type, select one of the following user types:
 - **Normal User:** You can limit users read and write access to the resources (such as inventory, projects, and so on) based on roles and privileges.

- **System Auditor:** You can limit users to read-only permissions for all objects within Oracle Linux Automation Manager.
- **System Administrator:** You can allow full system administration privileges (full read and write) for all objects within Oracle Linux Automation Manager.

12. Click **Save**.

13. Click the **Organizations** button.

All organizations that the user is part of appear in the list. This is a read only page.

14. Click the **Teams** icon.

All teams that the user is part of appear in the list. This is a read-only page.

15. Click the **Permissions** button.

16. Click the **Plus** icon.

The Add Permissions dialog appears.

17. Click from the following buttons to select corresponding resources:

- Job Templates
- Projects
- Inventories
- Credentials
- Organizations

18. As you select resources, you must then assign the resources to a role.

 **Note:**

Each resource can have different roles that can be assigned.

19. Click **Save**.

5

Setting Up Resources

This chapter describes setting up resources which are the primary configuration touch points between Oracle Linux Automation Manager and Oracle Linux Automation Engine playbooks and inventory. These resources are projects, inventories, credentials, job templates, and workflow templates.

Setting Up Projects

A Project is a resource that represent a repository of Oracle Linux Automation Engine playbooks. The repository can be local or on a remote source code management (SCM) system such as Git.

To create a project, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the left side menu and from the Resources section, click **Projects**.
The Projects page appears.
3. Click the **Plus** icon.
The New Projects page appears.
4. In the Name field, enter a name.
5. From the Organization List, select an organization, for example, Organization 1.
6. From the SCM Type list, select one of the following:
 - If you want to use a playbook located on the machine hosting Oracle Linux Automation Manager, select **Manual**. See [Accessing a Local Oracle Linux Automation Engine Playbook](#) for more information.
 - If you want to use a playbook from a remote repository such as from Git, select Git. Go to [Accessing a Remote Oracle Linux Automation Engine Playbook on Git](#) for information about setting up source details and credentials.
7. Click **Save**.

Accessing a Local Oracle Linux Automation Engine Playbook

To access a local playbook, do the following:

1. Create a directory where to store your Oracle Linux Automation Engine playbooks. The default location is `/var/lib/ol-automation-manager/projects`.
2. Copy or create playbook files in the directory. For sample playbooks, see `/var/lib/ol-automation-manager/projects/demo_bundled`.
3. Set the playbook directory and files to the same user and group and permissions that Oracle Linux Automation Manager uses.

 **Note:**

Check the SELinux permissions and context settings if you have issues adding a project path.

Accessing a Remote Oracle Linux Automation Engine Playbook on Git

Git is a distributed version control system containing repositories where you can store Oracle Linux Automation Engine playbooks that you can clone to Oracle Linux Automation Manager systems as part of projects.

To access a remote playbook on Git, do the following:

1. Set up a new Git repository or use an existing Git repository on a remote Git server.

For example, Github hosts the public Ansible example projects at <https://github.com/ansible/ansible-examples>.

 **Caution:**

As this is a public repository, Oracle is not responsible for examples contained therein.

2. If you are using a private repository that requires SSH authentication, you must set up your SSH private and public keys on the system running Oracle Linux Automation Manager and copy the public key to your Git user account.
3. Return to the Oracle Linux Automation Manager UI and from the New Projects page, in the SCM URL field, enter a URL to the SCM repository.
4. If you need to specify an SCM branch, tag, or commit in the SCM Branch/Tag/Commit field, enter a branch, tags, or commit hash.
5. If you need to retrieve a refspec from a branch, in the SCM Refspec field, enter an a refspec.
6. If the Git repository you specified is private and requires credentials to access, from the SCM Credential list, select a credential. For more information about setting up credentials, see [Setting Up Credentials](#).
7. If Oracle Linux Automation Manager requires access to the Git repository through a proxy, expand the left side menu and from the Administration section, click **Settings**.

The Settings page appears.

8. Click **Jobs**.

The Jobs page appears.

9. In the Extra Environment Variables field, enter the following:

```
{
  "https_proxy": "proxy_address:proxy_port"
}
```

In the previous example, *proxy_address* is the proxy address and *proxy_port* is the port for the proxy.

10. Click **Save**.

 **Note:**

If your Oracle Linux Automation Engine playbook uses the OCI Ansible collection, see <https://docs.oracle.com/iaas/Content/API/SDKDocs/ansible.htm> and find the setup instructions relating to AWX.

Setting Up Inventories and Hosts

The following sections provide information about setting up inventories and hosts.

Setting Up an Inventory

To set up an inventory, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Resources section, click **Inventories**.

The Inventories page appears.

3. Click the **Plus** icon.
4. Click **Inventory**.

The New Inventory page appears.

5. In the Name field, enter a name.
6. From the Organization list, select an organization.
7. In the Variables field, enter YAML or JSON code if you want to specify any inventory variables.
8. Click **Save**.

Setting Up a Host

To set up a host, do the following:

1. From an inventory, click the **Hosts** button.
The Hosts page appears
2. Click the **Plus** icon.
The Create Host page appears.
3. In the Host Name field, enter the IP address or hostname of the system you are connecting to. The host must be reachable.
4. Click **Save**.
5. To create additional hosts from this screen, click the **Plus** icon and repeat steps 3 and 4.

Running One-Off Commands Against a Host

To run single commands using Oracle Linux Automation Engine built in modules against one or more hosts in an inventory (similar to running a module on the command line), do the following:

1. From an inventory, click the **Hosts** button.
The Hosts page appears listing any hosts associated with the inventory.
2. Select the checkbox beside one or more hosts on the left side.
The Run Command button becomes available.
3. Click the **Run Commands** button.
The Execute Command page appears.
4. From the Modules list, select a module. For example, ping.
5. In the Arguments field, enter any arguments that are required by the selected module.
6. From the Machine Credentials list, select the credentials for the machines. See [Setting Up Credentials](#) for information about setting up credentials.
7. Click **Launch**.
The Jobs page appears showing the job operations in real-time and eventually displays a status of Success or Failed.

Setting Up Credentials

The following sections provide information about setting up various kinds of credentials on Oracle Linux Automation Manager.

Setting Up Git Credentials

To set up Git credentials, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Resources section, click **Credentials**.
The Credentials page appears.
3. Click the **Plus** icon.
The New Credentials page appears.
4. In the Name field, enter the name of the credential.
5. From the Organization lists, select an organization.
6. From the Credential Type list, select **Source Control**.
7. In the UserName field, enter the username, if required.
8. In the Password field, enter a password, if required.
9. In the SCM Private Key field, enter the SSH private key you set up on the host running Oracle Linux Automation Manager. (If you are using SSH authentication).

10. From the Private Key Passphrase list, enter a passphrase. (If you have set up a passphrase for SSH authentication).
11. Click **Save**.

Setting Up Inventory Machine Credentials

To set up inventory machine credential, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Resources section, click **Credentials**.
The Credentials page appears.
3. Click the **Plus** icon.
The New Credentials page appears.
4. In the Name field, enter the name of the credential.
5. From the Organization lists, select an organization.
6. From the Credential Type list, select **Machine**.
7. In the UserName field, enter the username, if required.
8. In the Password field, enter a password, if required.
9. Select **Prompt on launch** checkbox above the Password field if you want a Password prompt to appear when launching job templates or job workflows against an inventory.
10. In the SSH Private Key field, enter the SSH private key you set up on the host running Oracle Linux Automation Engine. (If you are using SSH authentication).
11. In the Signed SSH Certificate field, enter a signed SSH certificate, if required.
12. From the Private Key Passphrase list, enter a passphrase. (If you have set up a passphrase for SSH authentication).
13. Select **Prompt on launch** checkbox above the Private Key Passphrase field if you want a Private Key Passphrase prompt to appear when launching job templates or job workflows against an inventory.
14. From the Privilege Escalation Method list, select an escalation methods if the playbooks you run in the machine require an escalation method, for example, sudo.
15. In the Privilege Escalation UserName field, enter the username, if required.
16. In the Privilege Escalation Password field, enter a password, if required.
17. Select Prompt on launch above the Privilege Escalation Password field if you want a Password prompt to appear when launching job templates or job workflows against an inventory.
18. Click **Save**.

Setting Up Credentials Permissions

To specify which users have permission to use a credential, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Resources section, click **Credentials**.
The Credentials page appears.

3. Select an existing credential.
The Edit Credential page appears.
4. Click the **Permissions** button.
The Edit Credential / Permissions page appears.
5. Click the **Plus** icon.
The Add Users / Teams page appears.
6. Click the Users button.
A list of available users appears.

 **Note:**

Users with full administrator privileges do not appear because they have permissions for all entities in Oracle Linux Automation Manager.

7. From the lefthand column, select the checkbox beside each user you want to provide permission to use the credential.
8. Click the Teams button.
A list of available teams appears.
9. From the lefthand column, select the checkbox beside each team you want to provide permission to use the credential.
10. Click **Save**.

Setting Up Job Templates

The following sections provide information about setting up job templates and workflow templates.

Setting Up a Job Template

Job Templates allow you to run Oracle Linux Automation Engine playbooks task that are associated to a project against the hosts contained in an inventory. From a job template, you can also specify:

- Permissions: Which teams, users, or both can run the job.
- Notification: What notifications the job template triggers.
- Completed Jobs: A list of all completed jobs.
- Schedules: A list of schedules for when a job runs.

To set up a job template, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Resources section, click **Templates**.
The Templates page appears.
3. Click the **Plus** icon.

4. Select Job Template.

The New Job Template page appears.

5. Click the Details button.**6. In the Name field, enter a name.****7. From the Job Type list, select one of the following:**

- **Run:** Runs the Oracle Linux Automation Engine playbook.
- **Check:** Checks that the Oracle Linux Automation Engine playbook can run without errors.

8. From the Inventory list, select an inventory.**9. From the Project list, select a project. For example, you can select a project that uses the sample Yum Oracle Linux Automation Engine playbook that runs a yum update or creates an HTTPD on your inventory.****10. From the Playbook list, select a playbook. For example, if you are using the sample Yum Oracle Linux Automation Engine playbook, select yum_update.yaml.****11. From the Credentials lists, select a credential you have set up to access the hosts specified in the inventory you selected, if required.****12. In the Forks field, use scroll arrows to select the number of forks allowed. This is the number of parallel or simultaneous processes that can run while executing an Oracle Linux Automation Engine playbook. An empty value or a value of 1 uses the default specified in `/etc/ansible/ansible.cfg`.****13. In the Limit field, enter the hostname or IP addresses that further limits the hosts specified in the inventory where the job can run, if required.****14. From the Verbosity list, select a level of output that Oracle Linux Automation Manager displays as the job template runs. Options are as follows:**

- **0 (Normal)**
- **1 (Verbose)**
- **2 (More Verbose)**
- **3 (Debug)**
- **4 (Connection Debug)**
- **5 (WinRM Debug)**

15. In the Job Tags field, enter one or more job tags. Tags allow you have run portions of large playbook that contain tags. You can specify more than one tag using commas to separate each.**16. In the Skip Tags field, enter one or more job tags to skip. You can specify more than one tag using commas to separate each.****17. In the Labels field, enter a label that describes the job. You can use these labels in various Oracle Linux Automation Manager views to sort different jobs.****18. From the Instance Groups list, select the instance group you created when you installed Oracle Linux Automation Manager.****19. In the Job Slicing field, use scroll arrows to select the number of job slices allowed. Job slices enable you to divide the work done by a job template into the specified number of job slices, each running the same tasks against a portion of the inventory.**

20. In the Timeout field, use scroll arrows to select the number of time in seconds before a job times out.
21. Enable Show Changes to show the changes made by an Oracle Linux Automation Engine task in a job output.
22. If you want to display a dialog that contains prompts for specific fields when launching a Oracle Linux Automation Engine playbook, select the **Prompt On Launch** checkbox above the fields you want to display.
23. Check the following options if required:
 - **Enable Privilege Escalation:** The playbook runs with administrator privileges.
 - **Enable Provisioning Callbacks:** Creates a provisioning callback URL so a host can request a configuration update Oracle Linux Automation Manager using this job template.
 - **Enable Webhook:** The playbook enables webhooks.
 - **Enable Concurrent Jobs:** Oracle Linux Automation Manager can run multiple instances of the job template at the same time.
 - **Enable Fact Cache:** Uses cached facts if available and stores discovered facts in the cache.
24. In the Extra Variables field, enter YAML or JSON code if you want to pass any variables to the Oracle Linux Automation Engine playbook.
25. Click **Save**.

Setting Up and Running Sample Playbooks

When you install Oracle Linux Automation Manager sample Oracle Linux Automation Engine playbooks are also included in the `/var/lib/ol-automation-manager/projects/demo_bundled` directory. This directory contains the following playbooks:

- `httpd.yaml`: This playbook installs an Apache HTTP server on your target inventory.
- `yum_update.yaml`: This playbook runs a yum update on your target inventory.

To set up and run these playbooks as the admin user, do the following:

1. Log into Oracle Linux Automation Manager as the admin user.
2. Set up an organization, for example Sample Yum and Apache Org. For more information, see [Setting Up Organizations](#).
3. Set up credentials for the hosts where you want to run the playbooks as required, for example Sample Yum and Apache Host Credential. For more information, see [Setting Up Inventory Machine Credentials](#).
4. Expand the left side menu and from the Resources section, click **Projects**.
The Projects page appears.
5. Click the **Plus** icon.
The New Projects page appears.
6. In the Name field, enter a name, for example, Sample Yum and Apache project.
7. From the Organization List, select the organization you created, for example Sample Yum an Apache Org.

8. From the SCM Type list, select **Manual**.
In the Project Base Path field shows the default project base path located at `/var/lib/ol-automation-manager/projects`.
9. From the Playbook Directory list, select **demo_bundled**.
10. Click **Save**.
11. Expand the left side menu and from the Resources section, click **Inventory**.
The Inventories page appears.
12. Click the **Plus** icon.
The New Inventory page appears.
13. In the Name field, enter a name, for example Sample Yum an Apache Inventory.
14. From the Organization list, select the organization you created, for example Sample Yum an Apache Org.
15. Click **Save**.
16. Click **Hosts**.
17. Click the **Plus** icon.
The Create Host page appears.
18. In the Host Name field, enter a hostname or IP address. The host must be reachable.
19. Click **Save**.
20. Expand the navigation menu, and from the Resources section, click **Templates**.
The Templates page appears.
21. Click the **Plus** icon.
22. Select **Job Template**.
The New Job Template page appears.
23. Click the **Details** button.
24. In the Name field, enter a name, for example Sample Yum or Apache Job.
25. From the Job Type list, select **Run**.
26. From the Inventory list, select an inventory, for example Sample Yum an Apache Inventory.
27. From the Project list, select a project, for example, Sample Yum and Apache project.
28. From the Playbook list, select either **yum_update.yaml** if you want to run a yum update on your host or **httpd.yaml** if you want to set up an Apache instance on your host.
29. From the Credentials lists, select a credential, for example Sample Yum and Apache Host Credential.
30. From the Verbosity list, select **0 (Normal)**.
31. If you are running the httpd.yaml playbook, enable **Enable Privilege Escalation** so the playbook runs with administrator privileges.
32. Click **Save**.
33. Click **Launch**.

6

Using Views

This chapter describes how to use Oracle Linux Automation Manager views.

Using the Dashboard

The Dashboard view consolidates the following statistics in one display to quickly view Oracle Linux Automation Manager activities and entities displayed as selectable buttons:

- **Hosts:** Shows the total number of hosts included in all inventories to which the user has access.
- **Failed Hosts:** Shows all hosts where the last job failed to which the user has access.
- **Inventories:** Shows the total number of inventories to which the user has access.
- **Inventory Sync Failures:** Shows all inventories where synchronization with source inventory lists have failed to which the user has access.
- **Projects:** Shows the total number of projects to which the user has access.
- **Project Sync Failure:** Shows all projects where synchronization with the source Oracle Linux Automation Engine playbook have failed to which the user has access.

Clicking each statistic button opens related resource lists where resource types are displayed.

The Job Status graph displays historical data for various job activities and provides the following filters:

- **Period**
Available periods are:
 - Past 24 Hours
 - Past Week
 - Past Month
- **Job Type**
Available Job Types are:
 - All: Shows all job types.
 - Inventory Sync: Shows activity relating to inventory synchronizations.
 - SCM Update: Shows activity relating to source code management (SCM) updates.
 - Playbook Run: Shows activity relating to playbook runs.
- **View**
Available views are:
 - All: Displays both failed and successful job types.
 - Successful: Displays successful job types.

- Failed: Displays failed job types.

You can also view Recently used Templates and Recent Job Runs in the lists at the bottom of the page.

To view the Dashboard, do the following:

1. Log in to Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Views section, click **Dashboard**.

Viewing Jobs

The Jobs view displays all activities that have been run in Oracle Linux Automation Manager including job template runs, workflow runs, project synchronizations, inventory synchronizations, one-off commands on hosts, and so on.

You can use the following filters and action icons to change how the data is displayed, sorted and run:

- **Compact:** Shows whether the activity failed using a red circle icon or succeeded using a green circle icon, the activity title, and the activity type.
- **Expanded**
Shows all information from the compact view and includes various other data points such as:
 - Started: The time the activity started.
 - Finished: The time the activity finished.
 - Launched By: The user that launched the activity.
 - Job Template: The job template name.
 - Inventory: The inventory against which the activity was run.
 - Project: The project name.
 - Credentials: The credential type that ran the activity.
- **Sorting type**
The sorting type can be ascending or descending and includes the following options:
 - Name: Sorts by the name of the activity.
 - Finish Time: Sorts by the time when the activity finished.
 - Start Time: Sorts by the time when the activity started.
 - Launched By: Sorts by the user who ran the activity.
 - Project: Sorts by the project associated to the activity.
- **Rocket Icon:** Click on the rocket icon to relaunch the activity.
- **Trash Icon:** Click on the trash icon to delete the activity.

To view Jobs, do the following:

1. Log in to Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Views section, click **Jobs**.

Viewing Scheduled Activities

You can view scheduled management jobs, job template runs, workflow template runs, and project SCM updates from the Schedules view. From this view you can see the following information and perform the following actions:

- **Name:** Shows the name of the schedule.
- **Type:** Shows the type of schedule.
- **Next Run:** Shows when the next run is scheduled.
- **Actions:** Click the Pen icon to edit the schedule. Click the Trash icon to delete the schedule.

To view Schedules, do the following:

1. Log in to Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Views section, click **Schedules**.

About My View

Users with limited permissions and job roles can use My View to run Oracle Linux Automation Manager jobs without having access to advanced user activities such as are found in the Resources sections, Access sections, or Administration sections. The Job Templates area allows users to view and run Job Templates they have permissions to run and view. The Jobs area shows recently run jobs and activities. You can click **My Jobs** to view all jobs that your user account ran, or **All Jobs** to view all jobs ran by your team members with which you share the same permissions.

To view My Views, do the following:

1. Log in to Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Views section, click **My Views**.

Viewing Activity Streams

The Activity Stream icon that appears at the top right of your screen displays a variety of activities including the following:

- **All Activities:** This filter displays all activity types and is the default filter.
- **Applications:** This filter displays all activities relating to applications.
- **Tokens:** This field displays all activities relating to tokens.
- **Credentials:** This field displays all activities relating to credentials.
- **Hosts:** This field displays all activities relating to hosts.
- **Inventories:** This field displays all activities relating to inventories.
- **Inventory Scripts:** This field displays all activities relating to inventory scripts.
- **Jobs:** This field displays all activities relating to jobs.
- **Notification Templates:** This field displays all activities relating to notification templates.
- **Organizations:** This field displays all activities relating to organizations.

- **Projects:** This field displays all activities relating to projects.
- **Credential Types:** This field displays all activities relating to credential types.
- **Schedules:** This field displays all activities relating to Schedules.
- **Teams:** This field displays all activities relating to teams.
- **Templates:** This field displays all activities relating to templates.
- **Users:** This field displays all activities relating to users.

7

Administration Tasks

This chapter provides information about Oracle Linux Automation Manager administrative tasks.

About Administering Oracle Linux Automation Manager

The following sections provide information about basic administrative tasks.

Starting, Stopping, and Restarting Oracle Linux Automation Manager

To start Oracle Linux Automation Manager , do the following:

1. Open a console.
2. Start the Oracle Linux Automation Manager service:

```
sudo systemctl start ol-automation-manager
```

To stop Oracle Linux Automation Manager , do the following:

1. Open a console.
2. Stop the Oracle Linux Automation Manager service:

```
sudo systemctl stop ol-automation-manager
```

To restart Oracle Linux Automation Manager , do the following:

1. Open a console.
2. Restart the Oracle Linux Automation Manager service:

```
sudo systemctl restart ol-automation-manager
```

Accessing Log Files

Oracle Linux Automation Manager and other applications generates log files that can be useful for troubleshooting various issues.

To access and review the log files, do the following:

1. Open a terminal on the system that is running Oracle Linux Automation Manager.
2. Go to the following locations to review application log files: .
 - For Oracle Linux Automation Manager log files, see `/var/log/tower`.
 - For NGINX log files, see `/var/log/nginx`.
 - For Redis log files, see `/var/log/redis`.
 - For PostgreSQL, see `/var/lib/pgsql/data/log` and `/var/lib/pgsql/initdb_postgresql.log`.
3. Review the logs.

 **Tip:**

To find all error messages in all log files in the folder, use the following command: `cat * | grep -i error`.

Accessing Application Status

You can view Oracle Linux Automation Manager and other application statuses using the `systemctl` command that can be useful for troubleshooting various issues.

To view application status messages relating to Oracle Linux Automation Manager and other applications, do the following:

1. Open a terminal on the system that is running Oracle Linux Automation Manager.
2. Run the following commands:
 - For Oracle Linux Automation Manager, type `sudo systemctl status ol-automation-manager`.
 - For NGINX, type `sudo systemctl status nginx`.
 - For PostgreSQL, type `sudo systemctl status postgresql`.
 - For Redis, type `sudo systemctl status redis`.
3. Review the application status messages and ensure that all are in the `Active (running)` state. Investigate any error messages.
4. If you find error messages from the status commands, you can investigate further by running the following commands:
 - For Oracle Linux Automation Manager, type `sudo journalctl -u ol-automation-manager`.
 - For NGINX, type `sudo journalctl -u nginx`.
 - For PostgreSQL, type `sudo journalctl -u postgresql`.
 - For Redis, type `sudo journalctl -u redis`.

Upgrading Oracle Linux Automation Manager

To upgrade the Oracle Linux Automation Manager server, do the following:

1. Open a console.
2. Stop the Oracle Linux Automation Manager service:

```
sudo systemctl stop ol-automation-manager
```

3. Update Oracle Linux Automation Manager:

```
sudo dnf update ol-automation-manager
```

4. Run the following commands:

```
sudo su -l awx -s /bin/bash  
awx-manage setup_managed_credential_types
```

5. Exit the awx shell environment.

```
exit
```

6. Start the Oracle Linux Automation Manager service:

```
sudo systemctl start ol-automation-manager
```

Configuring New Credential Types

Administrators can create new credential types using YAML/JSON. For more information about creating new credential types, see the upstream documentation.

To create a new credential type, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Administration section, click **Credential Types**.

The Credential Types page appears.

3. Click the **Plus** icon.

The New Credential Type page appears.

4. In the Name field, enter the name for the new credential type.
5. In the Input Configuration field, enter input using JSON or YAML syntax.
6. In the Injector Configuration field, enter injectors using JSON or YAML syntax.
7. Click **Save**.

You can now use the credential type when creating new credentials.

Configuring Notification Templates

You can create a notification template to define notification types and methods that can be generated at various times and for various resources.

To configure a notification template, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Administration section, click **Notifications**.

The Notifications page appears.

3. Click the **Plus** icon.

The New Notification Template page appears.

4. In the Name field, enter the name for the new notification template.
5. From the Organization list, select an organization.
6. From the Type list, select a notification type, for example Email.
7. Review the upstream documentation for more information about configuring these notification types.
8. Click **Save**.

You can now use this notification template with various resources.

Creating and Scheduling Management Jobs

Management Jobs are built-in Jobs relating managing aging data in Oracle Linux Automation Manager and include the following jobs:

- **Cleanup Activity Stream:** This management job removes activity stream history older than a specified age.
- **Cleanup Expired OAuth 2 Tokens:** This management job removes OAuth 2 access tokens and refresh tokens that are expired.
- **Cleanup Expired Sessions:** This management job removes browser sessions from the database that are expired.
- **Cleanup Job Details:** This management job removes job history older than a specified age.

To launch a management job, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Administration section, click **Management Jobs**.

The Management Jobs page appears.

3. Click the rocket icon.

A dialog box may appear in some management jobs to specify how many days of data should be retained. If so, specify the number of days that data should be retained.

4. Click **Launch**.

To schedule a management job, do the following:

1. Log into Oracle Linux Automation Manager.
2. Expand the navigation menu, and from the Administration section, click **Management Jobs**.

The Management Jobs page appears.

3. Click the calendar icon for the management job you want schedule.

The Schedules page appears.

4. Click the **Plus** icon.

The Add Schedule page appears.

5. In the Name field, enter the name of the schedule.
6. In the Start Date field, enter a start date.
7. In the Start Time field, enter the hours, minutes and seconds for the start time.
8. From the Local Time Zone list, select a time zone.
9. From the Repeat Frequency, select one of the following:
 - **None (run once)**
 - **Minute**
 - **Hour**

- **Day**
- **Week**
- **Month**
- **Year**

When you select any option other than **None**, the Frequency Details area and fields appears.

10. In the Days of Data to Keep field, enter the number of days to retain data before deleting it.
11. In the Every field, enter the frequency to repeat the management job.
 - If you selected a Repeat Frequency of Minute, enter the number of minutes.
 - If you selected a Repeat Frequency of Hour, enter the number of hours.
 - If you entered a Repeat Frequency of Day, enter the number of days.
 - If you entered a Repeat Frequency of Week, enter the number of weeks. Additionally, the On Days list appears. Select one or more days of the week.
 - If you entered a Repeat Frequency of Month, do the following: Additionally, the On Day field appears. Enter the day of the month.
 - a. Enter the number of months.
 - b. If you want to specify a day on which start the management job, select **On Day**, and enter the day.
 - c. If you want to specify a week and day, select **On The**, select the **first, second, third, fourth**, or **last week** of the month, and select the day of the week.
12. From the End list, select one of the following:
 - **Never**
 - **After**
 - **On Date**
13. Review the Schedule Description area dates.
14. Click **Save**.

Configuring Settings

You can configure general Oracle Linux Automation Manager settings from the Administration section on the Settings page. These settings are grouped into the following categories:

- **Authentication:** Provides general settings relating to authentication.
- **Jobs:** Provides general settings relating to jobs.
- **Systems:** Provides general settings relating to the Oracle Linux Automation Manager system.
- **User Interface:** Provides general settings relating to the Oracle Linux Automation Manager user interface.

For more information about these fields, see the upstream documentation.