

Inventories

I

What are Inventories?











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- An Inventory is a collection of hosts against which jobs may be launched, the same as an Ansible inventory file.
- Inventories are divided into groups and these groups contain the actual hosts. Groups may be sourced manually, by entering host names into AWWX

Inventories window.

- The tool displays a list of available inventories, which can be sorted by name, searched type, organization, description, owners, modifiers, or additional criteria as needed.

Inventories

<input type="checkbox"/>	Name	Q	Add	Delete	1 - 5 of 5
<input type="checkbox"/>	Name	Sync Status	Type	Organization	Actions
<input type="checkbox"/>	Demo Inventory	Disabled	Inventory	Default	 
<input type="checkbox"/>	East	Success	Inventory	Default	 
<input type="checkbox"/>	East-West		Constructed Inventory	Default	 
<input type="checkbox"/>	Smart inventory sample		Smart Inventory	Default	 
<input type="checkbox"/>	West	Success	Inventory	Default	 
1 - 5 of 5 items 1 of 1 page					

Inventories window..

- An example of inventories of various states, including one with detail for a disabled state:

Inventories 🔍

<input type="checkbox"/>	Name ▼	<input type="text"/>	<input type="button" value="Q"/>	<input type="button" value="Add ▼"/>	<input type="button" value="Delete"/>	1 - 5 of 5 ◀ ▶
	Name ↑	Sync Status	Type	Organization	Actions	
<input type="checkbox"/>	Demo Inventory	<div>Not configured for inventory sync.</div> <div>Disabled</div>	Inventory	Default	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

- **Type**- Identifies whether it is a standard inventory, a Smart inventory, or a constructed inventory.
- **Organization**: The organization to which the inventory belongs.
- **Actions**

Smart Inventories

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- A Smart Inventory is a collection of hosts defined by a stored search that can be viewed like a standard inventory and made to be easily used with job runs.
- Organization administrators have admin permission to inventories in their organization and can create a Smart Inventories.
- A Smart Inventory is identified by **KIND=smart**
- **InventorySource** is directly associated with an Inventory.
- The Inventory model has the following new fields that are blank by default but are set accordingly for Smart Inventories:
 - **kind** is set to **smart** for Smart Inventories
 - **host_filter** is set AND kind is set to smart for Smart Inventories.

Smart Host Filter.

- Facts generated by an Ansible playbook during a Job Template run are stored by AWX| into the database whenever use_fact_cache=True is set per-Job Template.
- The **host_filter** parameter allows for:
 - grouping via ()
 - use of the boolean and operator:
 - `__` to reference related fields in relational fields
 - `__` is used on `ansible_facts` to separate keys in a JSON key path
 - `[]` is used to denote a json array in the path specification
 - `""` can be used in the value when spaces are wanted in the value
 - “classic” Django queries may be embedded in the **host_filter**

Define host filter with ansible_facts.

- In the **Create new smart inventory** screen, click the button next to the **Smart host filter** field to open a pop-up window to filter hosts for this inventory.

Inventories

Create new smart inventory

Name *

Description

Organization *

Smart host filter * ⓘ

Instance Groups ⓘ

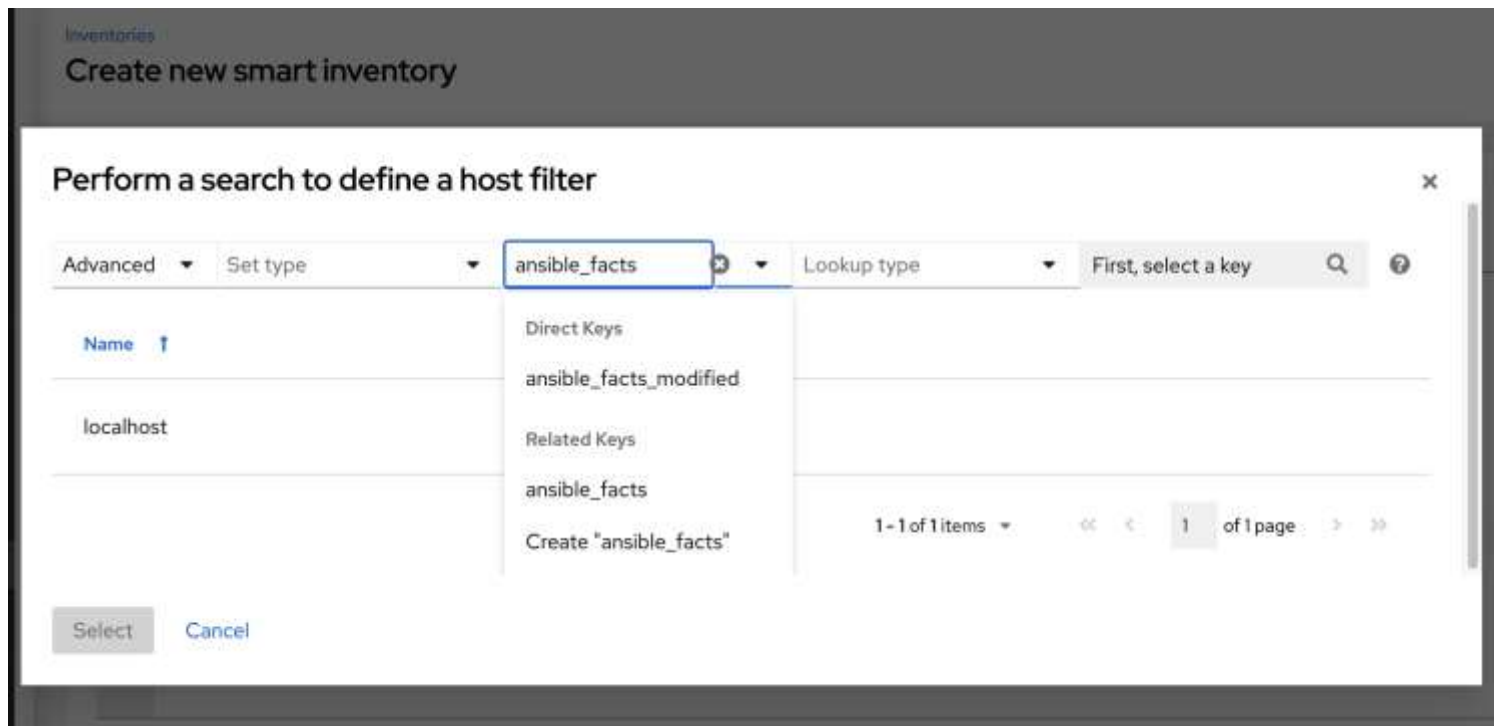
Variables ⓘ

YAML JSON

1

Define host filter with ansible_facts..

- In the search pop-up window, change the search criteria from **Name** to **Advanced** and select **ansible_facts** from the **Key** field.



Define host filter with ansible_facts...

- In the search field, enter `ansible_processor[]="GenuineIntel"` (no extra spaces or `_` before the value) and press **[Enter]**.

Inventories

Create new smart inventory

Perform a search to define a host filter

Searching by `ansible_facts` requires special syntax. Refer to the [documentation](#) for more info.

Advanced | `ansible_facts` | `ansible_processor[]="GenuineIntel"`

Name	Inventory
localhost	Demo Inventory

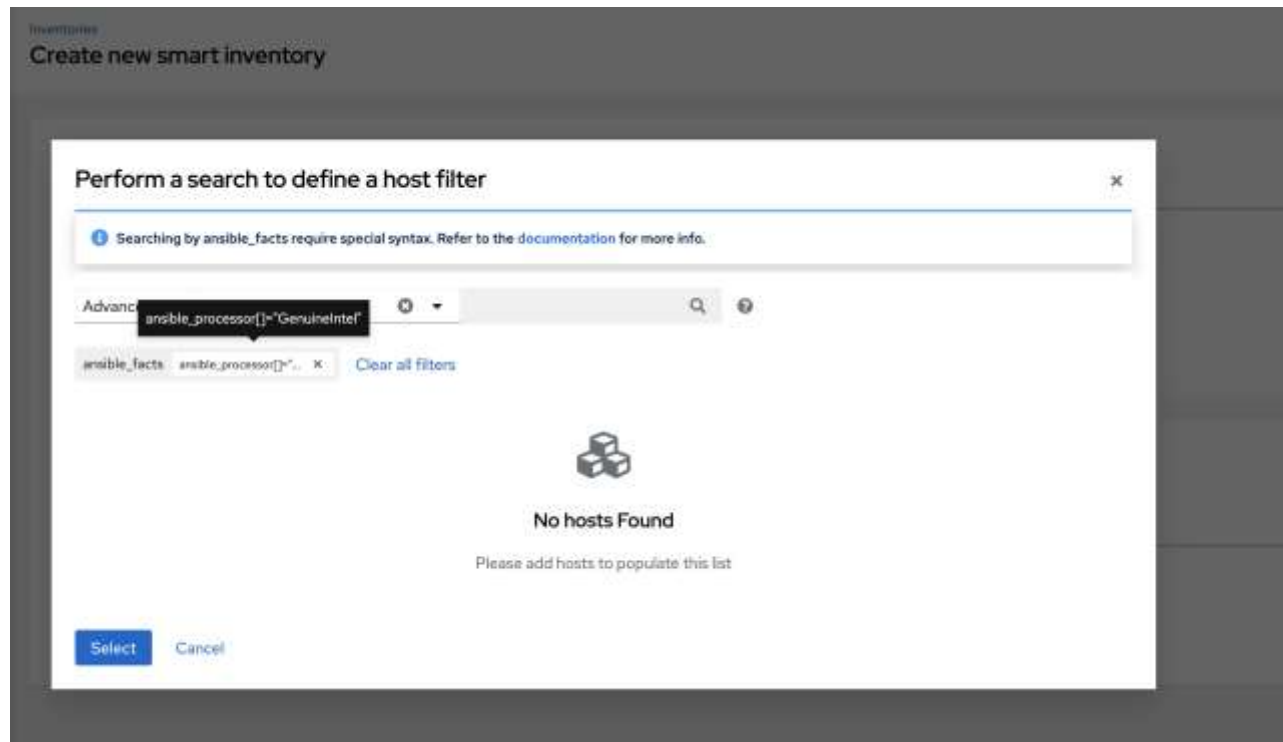
1 - 1 of 1 items | 1 of 1 page

Select Cancel

Define host filter with ansible_facts....

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- The resulting search criteria for the specified ansible fact populates in the lower part of the window.



Define host filter with ansible_facts...

II

- Click **Select** to add it to the **Smart host filter** field.

The screenshot shows the 'Create new smart inventory' form in Ansible Tower. The form is titled 'Create new smart inventory' and has a 'Inventories' breadcrumb. The form fields are:

- Name ***: New Smart Inventory with Facts
- Description**: (empty)
- Organization ***: Default
- Smart host filter ***: ansible_facts ansible_processor[*]_* (highlighted with a red box)
- Instance Groups**: (empty)
- Variables**: (empty, with tabs for YAML and JSON)

At the bottom of the form are 'Save' and 'Cancel' buttons.

Define host filter with ansible_facts...

- Click **Save** to save the new Smart Inventory.
- The Details tab of the new Smart Inventory opens and displays the specified ansible facts in the **Smart host filter** field.

Inventories > New Smart Inventory with Facts

Details

◀ Back to Inventories Details Access Hosts Jobs Job Templates

Name	New Smart Inventory with Facts	Type	Smart inventory	Organization	Default
------	--------------------------------	------	-----------------	--------------	---------

Smart host filter `ansible_facts__ansible_processor[]="GenuineIntel"`

Variables YAML JSON

1


Created 4/25/2022, 7:00:25 PM by admin Last modified 4/25/2022, 7:00:25 PM by admin

Edit Delete

Define host filter with ansible_facts...

- From the Details view, you can edit the **Smart host filter** field by clicking **Edit** and delete existing filter(s), clear all existing filters, or add new ones.

Perform a search to define a host filter

 Searching by ansible_facts requires special syntax. Refer to the [documentation](#) for more info.

Group ▼

Q

ansible_facts

ansible_processor[]="..." ✕

Group (groups__name__i... hostgroups ✕

[Clear all filters](#)

Constructed Inventories

- As a platform user, this feature allows creation of a new inventory (called a constructed inventory) from a list of input inventories.
- The constructed inventory contains copies of hosts and groups in its input inventories, allowing jobs to target groups of servers across multiple inventories.
- Groups and **hostvars** can be added to the inventory content, and hosts can be filtered to limit the size of the constructed inventory.
- The key factors that distinguish a constructed inventory from a Smart Inventory are:
 - the normal Ansible hostvars namespace is available
 - they provide groups

Inventory Plugins

- Inventory updates use dynamically-generated YAML files which are parsed by their respective inventory plugin.
- Users can provide the new style inventory plugin config directly to AWX via the inventory source **source_vars** for all the following inventory sources:
 - Amazon Web Services EC2
 - Google Compute Engine
 - Microsoft Azure Resource Manager
 - VMware vCenter
 - Red Hat Satellite 6
 - Red Hat Insights
 - OpenStack
 - Red Hat Virtualization
 - Red Hat Ansible Automation Platform

Add a new inventory.

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- Adding a new inventory involves several components:
- Add permissions
- Add groups
- Add hosts
- Add source
- View completed jobs

Add a new inventory..

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- To create a new standard inventory, Smart inventory, or constructed inventory:
- Click the **Add** button, and select the type of inventory to create.

Inventories

Create new inventory

Name *

Description

Organization *

Instance Groups

Labels

Options

☐ Prevent instance Group fallback

Variables

Save Cancel

Add a new inventory...

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- Enter the appropriate details into the following fields:
 - **Name**
 - **Description**
 - **Organization**
 - **Smart Host Filter**
 - **Instance Groups**
 - **Labels**

Add a new inventory...

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Select Instance Groups

×

Selected

Note: The order in which these are selected sets the execution precedence. Select more than one to enable drag.

⋮

1. controlplane

×

⋮

2. default

×

⋮

3. non_default

×

Name ▾

Q

⏪ ⏩

Name ↑

☒

controlplane

☒

default

☒

non_default

Select

Cancel

Add permissions.

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- In the **Access** tab, click the **Add** button.
- Select a user or team to add and click **Next**
- Select one or more users or teams from the list by clicking the check box(es) next to the name(s) to add them as members and click **Next**.

Add permissions..

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Add Roles

1 Select a Resource Type

2 Select Items from List

3 Select Roles to Apply

Choose the type of resource that will be receiving new roles. For example, if you'd like to add new roles to a set of users please choose Users and click Next. You'll be able to select the specific resources in the next step.

Users

Teams

Add User Roles

1 Select a Resource Type

2 Select Items from List

3 Select Roles to Apply

Choose the resources that will be receiving new roles. You'll be able to select the roles to apply in the next step. Note that the resources chosen here will receive all roles chosen in the next step.

Selected

jdoge K

jgarcia K

Username

Username	First Name	Last Name
<input type="checkbox"/> austin78	Austin	Texas
<input checked="" type="checkbox"/> jdoge	Josie	Doge
<input checked="" type="checkbox"/> jgarcia	Jerry	Garcia

1 of 1 page

Next

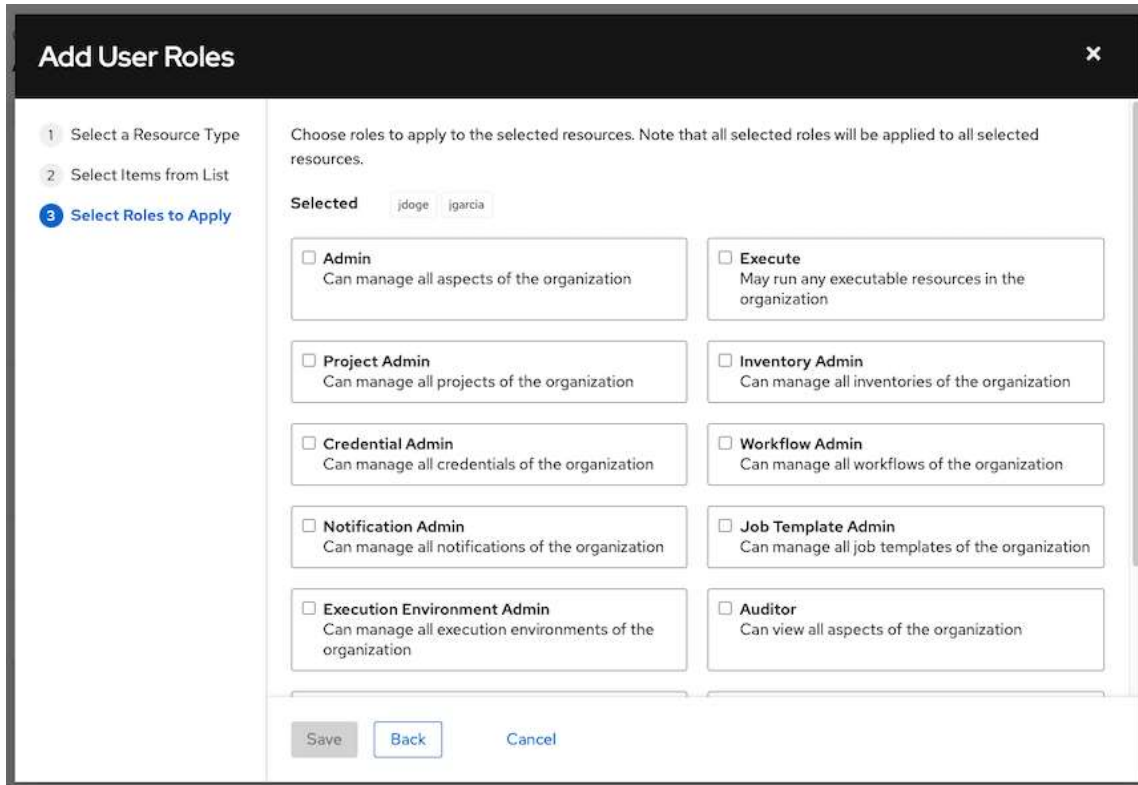
Back

Cancel

Add permissions...

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- Select the role(s) you want the selected user(s) or team(s) to have. Be sure to scroll down for a complete list of roles. Different resources have different options available.



The screenshot shows a dialog box titled "Add User Roles" with a close button (X) in the top right corner. On the left, there is a sidebar with three steps: "1 Select a Resource Type", "2 Select Items from List", and "3 Select Roles to Apply" (which is highlighted). The main area contains the following text: "Choose roles to apply to the selected resources. Note that all selected roles will be applied to all selected resources." Below this, there is a "Selected" section with two tags: "jdodge" and "jgarcia". The main area is divided into two columns of role cards, each with a checkbox and a description:

Role	Description
<input type="checkbox"/> Admin	Can manage all aspects of the organization
<input type="checkbox"/> Execute	May run any executable resources in the organization
<input type="checkbox"/> Project Admin	Can manage all projects of the organization
<input type="checkbox"/> Inventory Admin	Can manage all inventories of the organization
<input type="checkbox"/> Credential Admin	Can manage all credentials of the organization
<input type="checkbox"/> Workflow Admin	Can manage all workflows of the organization
<input type="checkbox"/> Notification Admin	Can manage all notifications of the organization
<input type="checkbox"/> Job Template Admin	Can manage all job templates of the organization
<input type="checkbox"/> Execution Environment Admin	Can manage all execution environments of the organization
<input type="checkbox"/> Auditor	Can view all aspects of the organization

At the bottom of the dialog, there are three buttons: "Save", "Back", and "Cancel".

Add permissions...

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- Click the **Save** button to apply the roles to the selected user(s) or team(s) and to add them as members.

Username	First name	Last name	Roles
admin			User Roles System Administrator
austin78	Austin	Austin	User Roles Member X System Auditor
jpgarcia	Jerry	Jerry	User Roles Credential Admin X Job Template Admin X Auditor X Member X
jdodge	Josie	Josie	User Roles Project Admin X Credential Admin X Job Template Admin X Auditor X

1 - 4 of 4 items << < 1 of 1 page > >>

Add groups.

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- Inventories are divided into groups, which may contain hosts and other groups, and hosts.
- Groups are only applicable to standard inventories and is not a configurable directly through a Smart Inventory.
 - Create a new Group
 - Create a new Host
 - Run a command on the selected Inventory
 - Edit Inventory properties
 - View activity streams for Groups and Hosts
 - Obtain help building your Inventory

Add groups..

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- Click the **Add** button to open the **Create Group** window.

Inventories > Database Servers > Groups

Create new group



Name *

Description

Variables

YAML

JSON

1

Save

Cancel

Add groups within groups.

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- Click the **Related Groups** tab.
- Click the **Add** button, and select whether to add a group that already exists in your configuration or create a new group.
- If creating a new group, enter the appropriate details into the required and optional fields:
 - **Name**
 - **Description**
 - **Variables**
- When done, click **Save**.

Add groups within groups..

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- The **Create Group** window closes and the newly created group displays as an entry in the list of groups associated with the group

[Inventories](#) > [Database Servers](#) > [Groups](#) > [CMS Web Group](#)

Related Groups



[◀ Back to Groups](#) [Details](#) [Related Groups](#) [Hosts](#)

☐

Name ▾

🔍

Add ▾

Run Command

Disassociate

1 - 1 of 1 ▾

< >

Name ↑

Actions

☐ Subgroup

✎

1 - 1 of 1 items ▾

<< <

1

of 1 page

> >>

Add groups within groups...

28

- If you chose to add an existing group, available groups will appear in a separate selection window.

Select Groups

Name

Name

↑

☐

Subgroup

<<

<

1

of 1 page

>

>>

Save

Cancel

Add hosts.

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- The **Create Host** window closes and the newly created host displays as an entry in the list of hosts associated with the group

Inventories > Demo Inventory > Groups > Subgroup
Hosts



[◀ Back to Groups](#) [Details](#) [Related Groups](#) [Hosts](#)

☐

Name ▾

1 - 1 of 1 ▾ < >

	Name ↑	Activity	Actions
<input type="checkbox"/>	Web Host		<input checked="" type="checkbox"/> On <input type="button" value="✎"/>

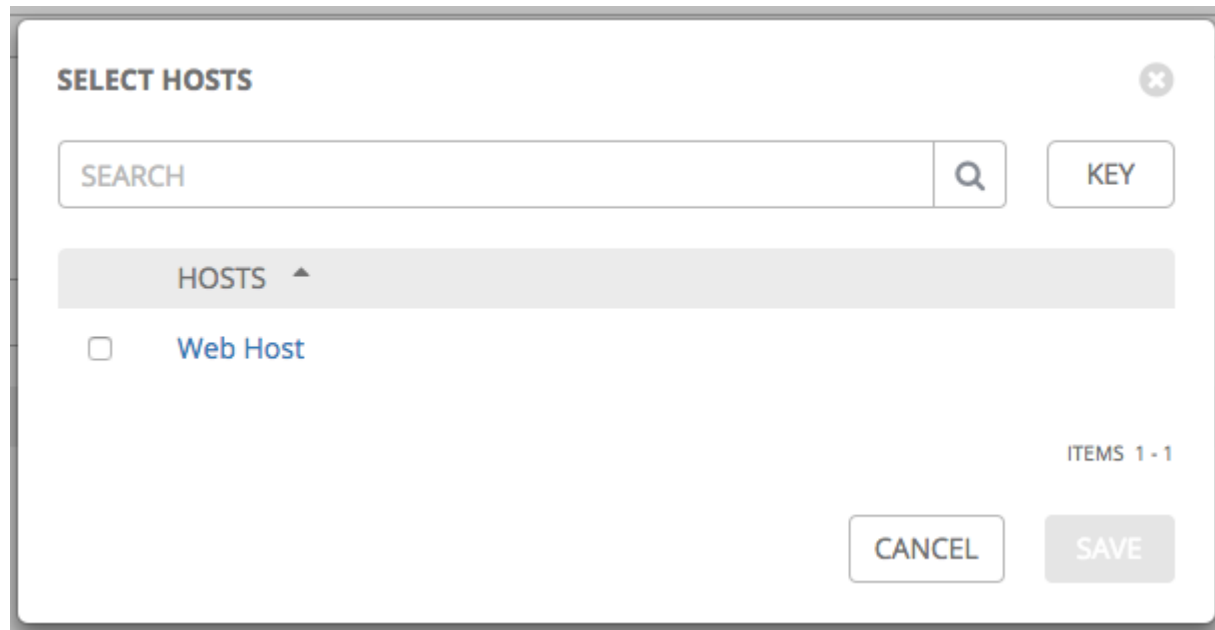
1 - 1 of 1 items ▾

<< < 1 of 1 page > >>

Add hosts..

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- If you chose to add an existing host, available hosts will appear in a separate selection window.



The screenshot shows a 'SELECT HOSTS' dialog box. At the top left is the title 'SELECT HOSTS' and a close button (X) at the top right. Below the title is a search bar with the placeholder text 'SEARCH' and a magnifying glass icon. To the right of the search bar is a button labeled 'KEY'. Below the search bar is a section header 'HOSTS' with a small upward-pointing triangle. Under this header is a single list item: an unchecked checkbox followed by the text 'Web Host'. At the bottom right of the dialog, it says 'ITEMS 1 - 1'. At the bottom center are two buttons: 'CANCEL' and 'SAVE'.

Add hosts...

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- To configure additional groups for the host, click on the name of the host from the list of hosts.

[Inventories](#) > [Demo Inventory](#)

Hosts



[◀ Back to Inventories](#) [Details](#) [Access](#) [Groups](#) [Hosts](#) [Sources](#) [Jobs](#)

☐

Name ▾

1 - 1 of 1 ▾ < >

	Name ↑	Activity	Actions
<input type="checkbox"/>	Web Host		<input checked="" type="checkbox"/> On <input type="button" value="✎"/>

1 - 1 of 1 items ▾

<< < 1 of 1 page > >>

Add hosts...

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- This opens the Details tab of the selected host.

[Inventories](#) > [Demo Inventory](#) > [Hosts](#) > [Web Host](#)

Host details



[◀ Back to Hosts](#) [Details](#) [Facts](#) [Groups](#) [Jobs](#)

☒ On

Name Web Host

Created 8/18/2021, 4:07:02 PM by [admin](#)

Last Modified 8/18/2021, 4:07:02 PM by [admin](#)

Variables

[YAML](#) [JSON](#)

1 ---

Edit

Delete

Running Ad Hoc Commands

I

Running Ad Hoc Commands.

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- Select an inventory source from the list of hosts or groups. The inventory source can be a single group or host, a selection of multiple hosts, or a selection of multiple groups.

[Inventories](#) > [Demo Inventory](#) > [Groups](#) > [Subgroup](#)

Hosts

◀ Back to Groups Details Related Groups **Hosts**

☐ Name 1 - 1 of 1 < >

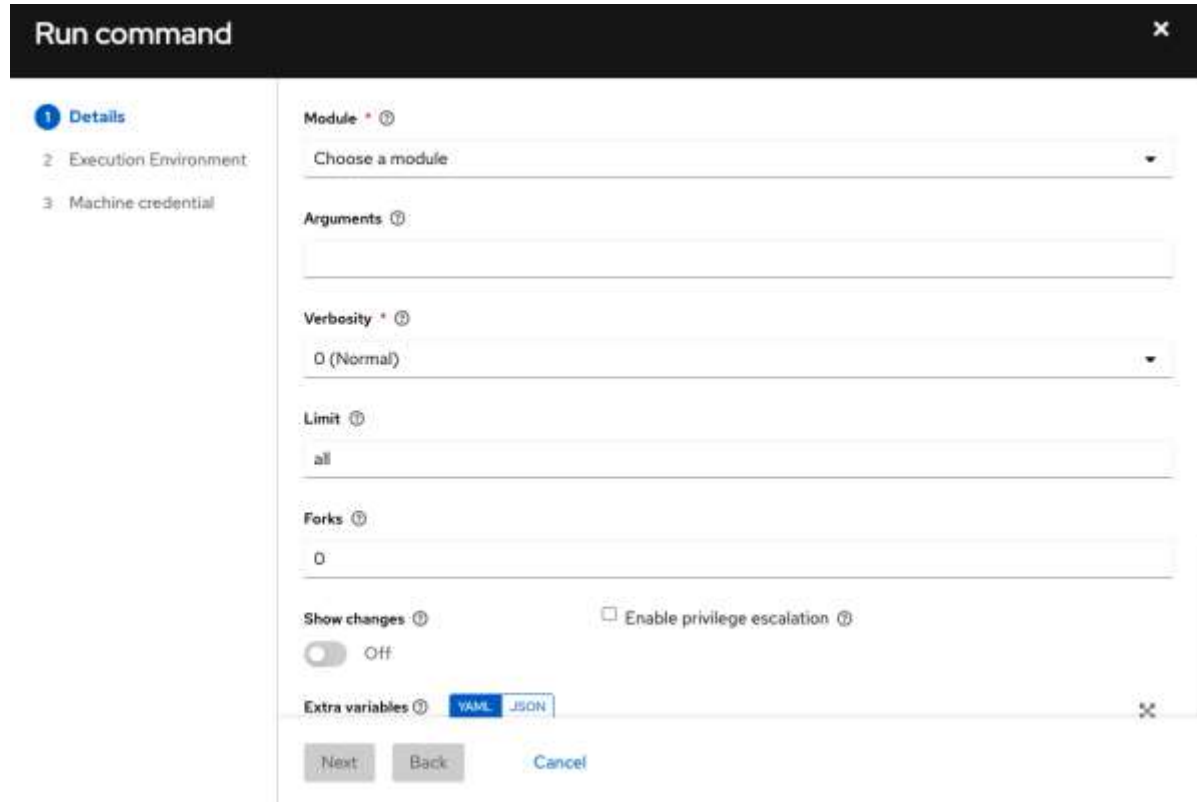
<input type="checkbox"/>	Name ↑	Activity	Actions
<input type="checkbox"/>	Web Host		<input checked="" type="checkbox"/> On <input type="button" value="Edit"/>

1 - 1 of 1 items << < 1 of 1 page > >>

Running Ad Hoc Commands..

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- Click the **Run Command** button.



The screenshot shows a 'Run command' dialog box with a sidebar on the left and a main configuration area on the right. The sidebar contains three steps: '1 Details' (selected), '2 Execution Environment', and '3 Machine credential'. The main area contains the following fields and controls:

- Module**: A dropdown menu with the text 'Choose a module'.
- Arguments**: A text input field.
- Verbosity**: A dropdown menu with the value '0 (Normal)'.
- Limit**: A text input field with the value 'all'.
- Forks**: A text input field with the value '0'.
- Show changes**: A toggle switch currently set to 'Off'.
- Enable privilege escalation**: An unchecked checkbox.
- Extra variables**: A section with tabs for 'YAML' and 'JSON', and a text input field.
- Buttons**: 'Next', 'Back', and 'Cancel' buttons at the bottom.

Running Ad Hoc Commands...

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- Click **Next** to choose the execution environment you want the ad-hoc command to be run against.

The screenshot shows a 'Run command' dialog box with a dark header bar containing the title 'Run command' and a close button. On the left, a sidebar lists three steps: '1 Details', '2 Execution Environment' (which is highlighted with a blue circle), and '3 Machine credential'. The main area is titled 'Execution Environments' and features a search bar with a dropdown arrow and a magnifying glass icon. Below the search bar is a table with one column header 'Name' and an upward arrow icon. The table contains two entries: 'Controller Default EE' and 'Control Plane Execution Environment', each preceded by an unselected radio button. At the bottom right of the table area, there is a pagination indicator showing '1 of 1 page'. At the bottom of the dialog, there are three buttons: 'Next' (highlighted in dark blue), 'Back' (in light blue), and 'Cancel' (in light blue).

Running Ad Hoc Commands...

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- Click **Next** to choose the credential you want to use and click the **Launch** button.



Jobs > ping

Output

Back to Jobs Details Output

ping Elapsed 00:00:04

Stdout

```
0 WARN[0000] error mounting subscriptions, skipping entry in /usr/share/containers/mounts.conf: getting host subscription data failed: failed to read subscriptions from
  "/usr/share/rhel/secrets": open /usr/share/rhel/secrets/rhsm/syspurpose/syspurpose.json: permission denied
1 [WARNING]: Invalid characters were found in group names but not replaced, use
2 -vvvv to see details
3 [WARNING]: Could not match supplied host pattern, ignoring: Web
3 [WARNING]: Could not match supplied host pattern, ignoring: Web
5 [WARNING]: No hosts matched, nothing to do
```