Ansible Inventory

What is Inventory?

- An Ansible inventory file is a regular text file.

- Inventory consist of **hostnames** and **IP addresses** of remote servers that stores the information of the **target system** where the Ansible script will be executed.

- It does this by selecting portions of systems listed in Ansible's inventory, which defaults to being saved in the location **/etc/ansible/hosts**.

- You can specify a different inventory file using the **-i <path>** option on the command line.

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- The inventory file can be in one of many formats, depending on the inventory plugins you have.

- The headings in brackets are group names, which are used in classifying systems and deciding what systems you are controlling at what times and for what purpose.

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INI- like (ansible default)

```
mail.example.com

[webservers]
foo.example.com
bar.example.com

[dbservers]
one.example.com
two.example.com
three.example.com
```

YAML version

```yaml
all:
  hosts:
    mail.example.com:
  children:
    webservers:
      hosts:
        foo.example.com:
        bar.example.com:
    dbservers:
      hosts:
        one.example.com:
        two.example.com:
        three.example.com:
```

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- As described above, it is easy to assign variables to hosts that will be used later in playbooks:

Example:

```
[atlanta]
host1 http_port=80 maxRequestsPerChild=808
host2 http_port=303 maxRequestsPerChild=909
```

```
atlanta:
  hosts:
    host1:
      http_port: 80
      maxRequestsPerChild: 808
    host2:
      http_port: 303
      maxRequestsPerChild: 909
```

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Group Variables

- Variables can also be applied to an entire group at once:

```
[atlanta]
host1
host2

[atlanta:vars]
ntp_server=ntp.atlanta.example.com
proxy=proxy.atlanta.example.com
```

```
atlanta:
  hosts:
    host1:
    host2:
  vars:
    ntp_server: ntp.atlanta.example.com
    proxy: proxy.atlanta.example.com
```

- It is also possible to make groups of groups using the :children suffix in INI or the children: entry in YAML.

- You can apply variables using :vars or vars::

Example

8

```
[atlanta]
host1
host2

[raleigh]
host2
host3

[southeast:children]
atlanta
raleigh

[southeast:vars]
some_server=foo.southeast.example.com
halon_system_timeout=30
self_destruct_countdown=60
escape_pods=2

[usa:children]
southeast
northeast
southwest
northwest
```

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- Any host that is a member of a child group is automatically a member of the parent group.

- A child group's variables will have higher precedence (override) than a parent group's variables.

- Groups can have multiple parents and children, but not circular relationships.

- Hosts can also be in multiple groups, but there will only be one instance of a host, merging the data from the multiple groups.

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- There are two default groups: all and ungrouped.

- all contain every host.

- ungrouped contains all hosts that don't have another group aside from all.

- Every host will always belong to at least 2 groups.

- Though all and ungrouped are always present, they can be implicit and not appear in group listings like **group_names**.

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Dynamic Inventory

- Ansible inventory information can also be dynamically generated, using information provided by external databases.

- A dynamic inventory program could contact your Amazon EC2 account, and use information stored there to construct an Ansible inventory.

- Because the program does this when you run Ansible, it can populate the inventory with up-to-date information provided by the service as new hosts are added and old hosts are removed.

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