Chapter 1: System Architecture and Design of Ansible

```
●●●                2. jkeating@serenity: ~/src/mastery (zsh)
~/src/mastery> ansible-playbook --version
ansible-playbook 2.2.0.0
  config file =
  configured module search path = Default w/o overrides
~/src/mastery> _
```

```
●●●                2. jkeating@serenity: ~/src/mastery (zsh)
~/src/mastery> ansible-playbook -i mastery-hosts -c local -v mastery.yaml
No config file found; using defaults

PLAY [limit example play] **********************************************

TASK [tell us which host we are on] ************************************
ok: [mastery.example.name] => {
    "inventory_hostname": "mastery.example.name"
}
ok: [backend.example.name] => {
    "inventory_hostname": "backend.example.name"
}

PLAY RECAP *************************************************************
backend.example.name         : ok=1    changed=0    unreachable=0    failed=0
mastery.example.name         : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts -c local -v --limit frontend ma
stery.yaml
No config file found; using defaults

PLAY [limit example play] ***********************************************

TASK [tell us which host we are on] *************************************
ok: [mastery.example.name] => {
    "inventory_hostname": "mastery.example.name"
}

PLAY RECAP **************************************************************
mastery.example.name        : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts -c local -v --limit frontend ma
stery.yaml
No config file found; using defaults

PLAY [limit example play] ***********************************************

TASK [tell us which host we are on] *************************************
ok: [mastery.example.name] => {
    "inventory_hostname": "mastery.example.name"
}

TASK [grab variable data from backend] **********************************
ok: [mastery.example.name] => {
    "hostvars['backend.example.name']['ansible_port']": "314"
}

PLAY RECAP **************************************************************
mastery.example.name        : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
● ● ●                    2. jkeating@serenity: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts -c local -v relative.yaml
No config file found; using defaults

PLAY [relative path play] **********************************************************

TASK [who am I] ********************************************************************
ok: [localhost] => {
    "msg": "I am mastery task"
}

TASK [var from file] **************************************************************
ok: [localhost] => {
    "something": "better than nothing"
}

TASK [where am I] ******************************************************************
ok: [localhost] => {
    "msg": "I am task a"
}

TASK [who am I] ********************************************************************
ok: [localhost] => {
    "msg": "I am task b"
}

PLAY RECAP ************************************************************************
localhost                  : ok=4    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts -c local names.yaml -vv
No config file found; using defaults

PLAYBOOK: names.yaml ************************************************************
2 plays in names.yaml

PLAY [play with a not-mastery] *************************************************

TASK [set a variable] *********************************************************
task path: /Users/jkeating/src/mastery/names.yaml:10
ok: [localhost] => {"ansible_facts": {"task_var_name": "defined variable"}, "cha
nged": false}

TASK [task with a defined variable] *******************************************
task path: /Users/jkeating/src/mastery/names.yaml:14
ok: [localhost] => {
    "msg": "I am mastery task"
}

PLAY [second play with a {{ task_var_name }}] *********************************

TASK [task with a {{ runtime_var_name }}] ************************************
task path: /Users/jkeating/src/mastery/names.yaml:23
ok: [localhost] => {
    "msg": "I am another mastery task"
}

PLAY RECAP ********************************************************************
localhost                  : ok=3    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-doc debug | cat -
> DEBUG

  This module prints statements during execution and can be useful for
  debugging variables or expressions without necessarily halting the
  playbook. Useful for debugging together with the 'when:' directive.

  * note: This module has a corresponding action plugin.

Options (= is mandatory):

- msg
        The customized message that is printed. If omitted, prints a
        generic message.
        [Default: Hello world!]
- var
        A variable name to debug.  Mutually exclusive with the 'msg'
        option.
        [Default: (null)]
- verbosity
        A number that controls when the debug is run, if you set to 3
        it will only run debug when -vvv or above
        [Default: 0]
EXAMPLES:
# Example that prints the loopback address and gateway for each host
- debug: msg="System {{ inventory_hostname }} has uuid {{ ansible_product_uuid }
}"

- debug: msg="System {{ inventory_hostname }} has gateway {{ ansible_default_ipv
4.gateway }}"
  when: ansible_default_ipv4.gateway is defined

- shell: /usr/bin/uptime
  register: result

- debug: var=result verbosity=2

- name: Display all variables/facts known for a host
  debug: var=hostvars[inventory_hostname] verbosity=4


MAINTAINERS: Michael DeHaan, Dag Wieers (@dagwieers)
~/src/mastery> _
```

Chapter 2: Protecting Your Secrets with Ansible

```
2. jkeating@serenity: ~/src/mastery (zsh)
~/src/mastery> ansible-vault create --help
Usage: ansible-vault create [options] file_name

Options:
  --ask-vault-pass        ask for vault password
  -h, --help              show this help message and exit
  --new-vault-password-file=NEW_VAULT_PASSWORD_FILE
                          new vault password file for rekey
  --output=OUTPUT_FILE    output file name for encrypt or decrypt; use - for
                          stdout
  --vault-password-file=VAULT_PASSWORD_FILE
                          vault password file
  -v, --verbose           verbose mode (-vvv for more, -vvvv to enable
                          connection debugging)
  --version               show program's version number and exit
~/src/mastery>
```

```
2. ansible-vault create secrets.yaml (python)
~/src/mastery> ansible-vault create secrets.yaml
Vault password:
```

```
2. ansible-vault create secrets.yaml (vim)
---
my_secret: is_safe
~
~
~
~
:wq
```

```
2. jkeating@serenity: ~/src/mastery (zsh)
~/src/mastery> ansible-vault create secrets.yaml
Vault password:
~/src/mastery> cat secrets.yaml
$ANSIBLE_VAULT;1.1;AES256
38393135633934623463613639366330656539633533306230633863656565363665306132623661
63616465305356656135313930333030336133613965663935306a3833663463383535363038353336646233
65366262323064393734303962663638383262313033364306164616433613838303165333733336231
61316337343336138300a396137313034326366626537386432643634323435623930623366633738
38646538396266661616238376364616539633164656162626561613862666632643936
~/src/mastery> _
```

```
2. jkeating@serenity: ~/src/mastery (zsh)
~/src/mastery> echo "my long password" > password_file
~/src/mastery> ansible-vault create --vault-password-file password_file more_sec
rets.yaml_
```

```
2. jkeating@serenity: ~/src/mastery (zsh)
~/src/mastery> vim password.sh
~/src/mastery> cat password.sh
#!/bin/bash

echo "a long password"
~/src/mastery> chmod +x password.sh
~/src/mastery> ansible-vault create --vault-password-file password.sh even_more_
secrets.yaml_
```

```
2. jkeating@serenity: ~/src/mastery (zsh)

~/src/mastery> ansible-vault encrypt --help
Usage: ansible-vault encrypt [options] file_name

Options:
  --ask-vault-pass      ask for vault password
  -h, --help            show this help message and exit
  --new-vault-password-file=NEW_VAULT_PASSWORD_FILE
                        new vault password file for rekey
  --output=OUTPUT_FILE  output file name for encrypt or decrypt; use - for
                        stdout
  --vault-password-file=VAULT_PASSWORD_FILE
                        vault password file
  -v, --verbose         verbose mode (-vvv for more, -vvvv to enable
                        connection debugging)
  --version             show program's version number and exit
~/src/mastery>
```

```
2. jkeating@serenity: ~/src/mastery (zsh)

~/src/mastery> cat a_vars_file.yaml
---
something: "better than nothing"
~/src/mastery> ansible-vault encrypt --vault-password-file password.sh a_vars_fi
le.yaml
Encryption successful
~/src/mastery> cat a_vars_file.yaml
```
```
$ANSIBLE_VAULT;1.1;AES256
32633162323138633535613833626166386436353532373532303466353061633833826262626243533
35623532666539383866656516533386161386465363363340a34396264393166626635336232356 2
38313664383566366333335323236623635356136626237356364333238383461623031636564613 3
39666366664663961380a62643464623938653538643434333633866616361643936653466363933 38
31393236626337396336643135623933663536353264623665646366653732346330336533326137
66313165303837316464323536562383834333566333734623064
~/src/mastery>
```

```
~/src/mastery> ansible-vault edit --help
Usage: ansible-vault edit [options] file_name

Options:
  --ask-vault-pass        ask for vault password
  -h, --help              show this help message and exit
  --new-vault-password-file=NEW_VAULT_PASSWORD_FILE
                          new vault password file for rekey
  --output=OUTPUT_FILE    output file name for encrypt or decrypt; use - for
                          stdout
  --vault-password-file=VAULT_PASSWORD_FILE
                          vault password file
  -v, --verbose           verbose mode (-vvv for more, -vvvv to enable
                          connection debugging)
  --version               show program's version number and exit
~/src/mastery>
```

```
~/src/mastery> ansible-vault edit --vault-password-file password.sh a_vars_file.
yaml
```

```
---
something: "better than nothing"
~
~
~
~
~
<zzsqj2j4hdghh6z93z1rhgw0000gn/T/tmpAOuOxf" 2L, 37C              1,1            All
```

Chapter 3: Unlocking the Power of Jinja2 Templates

```
● ● ●                    2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml *************************************************
1 plays in template-demo.yml

PLAY [demo the template] ***************************************************

TASK [pause with render] **************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:13
[pause with render]
setting = a_val
feature = True
another_setting = b_val
:
ok: [localhost] => {"changed": false, "delta": 1, "rc": 0, "start": "2016-12-29
12:13:15.286170", "stderr": "", "stdout": "Paused for 0.03 minutes", "stop": "20
16-12-29 12:13:17.107023", "user_input": ""}

PLAY RECAP ****************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml

PLAY [demo the template] **********************************************************

TASK [pause with render] **********************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:13
[pause with render]
setting = a_val
feature = False
another_setting = b_val
:
ok: [localhost] => {"changed": false, "delta": 1, "rc": 0, "start": "2016-12-29
12:14:25.599895", "stderr": "", "stdout": "Paused for 0.02 minutes", "stop": "20
16-12-29 12:14:26.880526", "user_input": ""}

PLAY RECAP ************************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ***********************************************
1 plays in template-demo.yml

PLAY [demo the template] *************************************************

TASK [pause with render] ************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:11
ok: [localhost] => {
    "msg": "API = cinderv2"
}

PLAY RECAP **************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ***********************************************
1 plays in template-demo.yml

PLAY [demo the template] *************************************************

TASK [pause with render] ************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:11
ok: [localhost] => {
    "msg": "API = cinder"
}

PLAY RECAP **************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ***********************************************
1 plays in template-demo.yml


PLAY [demo the template] *************************************************


TASK [pause with render] ************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
# data dirs
# no data dirs found
:
ok: [localhost] => {"changed": false, "delta": 1, "rc": 0, "start": "2016-12-29
12:21:43.543140", "stderr": "", "stdout": "Paused for 0.02 minutes", "stop": "20
16-12-29 12:21:44.843838", "user_input": ""}


PLAY RECAP **************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ***********************************************
1 plays in template-demo.yml


PLAY [demo the template] *************************************************

TASK [pause with render] ************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
# data dirs
data_dir = /foo,
          /bar,
:
ok: [localhost] => {"changed": false, "delta": 1, "rc": 0, "start": "2016-12-29
12:25:58.276128", "stderr": "", "stdout": "Paused for 0.02 minutes", "stop": "20
16-12-29 12:25:59.753653", "user_input": ""}


PLAY RECAP **************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml


PLAY [demo the template] **********************************************************


TASK [pause with render] *********************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
# data dirs
data_dir = /foo,
           /bar
:
ok: [localhost] => {"changed": false, "delta": 0, "rc": 0, "start": "2016-12-29
12:28:02.531782", "stderr": "", "stdout": "Paused for 0.02 minutes", "stop": "20
16-12-29 12:28:03.479376", "user_input": ""}


PLAY RECAP ************************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ************************************************
1 plays in template-demo.yml

PLAY [demo the template] **************************************************

TASK [pause with render] **************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
test
:
ok: [localhost] => {"changed": false, "delta": 3, "rc": 0, "start": "2016-12-29
12:29:46.635609", "stderr": "", "stdout": "Paused for 0.06 minutes", "stop": "20
16-12-29 12:29:50.121284", "user_input": ""}

PLAY RECAP ***************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ************************************************
1 plays in template-demo.yml

PLAY [demo the template] **************************************************

TASK [pause with render] *************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
('var_a',)
:
ok: [localhost] => {"changed": false, "delta": 1, "rc": 0, "start": "2016-12-29
12:31:39.042984", "stderr": "", "stdout": "Paused for 0.02 minutes", "stop": "20
16-12-29 12:31:40.090304", "user_input": ""}

PLAY RECAP ***************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ************************************************
1 plays in template-demo.yml

PLAY [demo the template] **************************************************

TASK [pause with render] *************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
('var_a',)
('a string',)
:
ok: [localhost] => {"changed": false, "delta": 0, "rc": 0, "start": "2016-12-29
12:32:34.676897", "stderr": "", "stdout": "Paused for 0.01 minutes", "stop": "20
16-12-29 12:32:35.302267", "user_input": ""}

PLAY RECAP ****************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml **********************************************
1 plays in template-demo.yml

PLAY [demo the template] ************************************************

TASK [pause with render] ***********************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
{'unexpected': 'surprise'}
True
:
ok: [localhost] => {"changed": false, "delta": 1, "rc": 0, "start": "2016-12-29
12:34:04.684260", "stderr": "", "stdout": "Paused for 0.02 minutes", "stop": "20
16-12-29 12:34:05.844906", "user_input": ""}


PLAY RECAP *************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml

PLAY [demo the template] **********************************************************

TASK [pause with render] *********************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
('surprise',)
True
:
ok: [localhost] => {"changed": false, "delta": 2, "rc": 0, "start": "2016-12-29
12:35:09.465169", "stderr": "", "stdout": "Paused for 0.04 minutes", "stop": "20
16-12-29 12:35:11.763006", "user_input": ""}

PLAY RECAP ***********************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ***********************************************
1 plays in template-demo.yml

PLAY [demo the template] *************************************************

TASK [pause with render] ************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
The text from caller follows:
This is text inside the call
:
ok: [localhost] => {"changed": false, "delta": 0, "rc": 0, "start": "2016-12-29
12:36:47.172805", "stderr": "", "stdout": "Paused for 0.01 minutes", "stop": "20
16-12-29 12:36:48.056495", "user_input": ""}

PLAY RECAP **************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml

PLAY [demo the template] **********************************************************

TASK [pause with render] **********************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:10
[pause with render]
[web]
host1 ssh_host_name=host1.example.name ansible_sudo=true
host2 ssh_host_name=host2.example.name ansible_sudo=true
host3 ssh_host_name=host3.example.name ansible_sudo=true

[db]
db1 ssh_host_name=db1.example.name
db2 ssh_host_name=db2.example.name
:
ok: [localhost] => {"changed": false, "delta": 2, "rc": 0, "start": "2016-12-29
12:39:16.647766", "stderr": "", "stdout": "Paused for 0.04 minutes", "stop": "20
16-12-29 12:39:19.016156", "user_input": ""}

PLAY RECAP ************************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv -e "answe
rs='no so yes no'"
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml

PLAY [demo the template] *********************************************************

TASK [debug the template] *******************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {
    "msg": "yes so yes yes"
}

PLAY RECAP **********************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml *********************************************
1 plays in template-demo.yml

PLAY [demo the filters] ************************************************

TASK [fail a task] ****************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {
    "msg": "I am not a change"
}

TASK [only do this on change] *****************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:12
skipping: [localhost] => {"changed": false, "skip_reason": "Conditional check fa
iled", "skipped": true}

TASK [only do this on success] ***************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:17
ok: [localhost] => {
    "msg": "You had a success"
}

PLAY RECAP **********************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************
1 plays in template-demo.yml

PLAY [demo the filters] ***********************************************

TASK [shuffle the cards] **********************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {
    "msg": [
        "Ace",
        "Queen",
        "Deuce",
        "King"
    ]
}

PLAY RECAP ************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml *********************************************
1 plays in template-demo.yml

PLAY [demo the filters] ************************************************

TASK [demo basename] **************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {
    "msg": "nova-api.log"
}

PLAY RECAP ************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml *********************************************
1 plays in template-demo.yml

PLAY [demo the filters] ************************************************

TASK [demo basename] **************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {
    "msg": "/var/log/nova"
}

PLAY RECAP ************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml

PLAY [demo the filters] ***********************************************************

TASK [demo filter] ***************************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {
    "msg": "/Users/jkeating/.stackrc"
}

PLAY RECAP ***********************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml

PLAY [demo the filters] ***********************************************************

TASK [read file] ******************************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {"changed": false, "content": "SSBhbSBhIG1vZGVybiBtYWpvciBnZW
5lcmFsLgo=", "encoding": "base64", "source": "derp"}

TASK [display file content (undecoded)] *******************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:12
ok: [localhost] => {
    "derp.content": "SSBhbSBhIG1vZGVybiBtYWpvciBnZW5lcmFsLgo="
}

TASK [display file content (decoded)] *********************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:16
ok: [localhost] => {
    "derp.content | b64decode": "I am a modern major general.\n"
}

PLAY RECAP ************************************************************************
localhost                  : ok=3    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ********************************************************
1 plays in template-demo.yml

PLAY [demo the filters] ***********************************************************

TASK [string methods] ************************************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:7
ok: [localhost] => {
    "msg": [
        "FOO",
        "BAR",
        "BAZ"
    ]
}

PLAY RECAP ***********************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts template-demo.yml -vv
No config file found; using defaults

PLAYBOOK: template-demo.yml ***********************************************
1 plays in template-demo.yml


PLAY [demo the logic] ****************************************************

TASK [logic and comparison] ***********************************************
task path: /Users/jkeating/src/mastery/template-demo.yml:11
ok: [localhost] => {
    "msg": "Can you read me?"
}


PLAY RECAP ***************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

Chapter 4: Controlling Task Conditions


```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ********************************************************
1 plays in errors.yaml

PLAY [error handling] *******************************************************

TASK [broken website] *******************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
fatal: [localhost]: FAILED! => {"changed": false, "content": "", "failed": true,
 "msg": "Status code was not [200]: Request failed: <urlopen error [Errno 8] nod
ename nor servname provided, or not known>", "redirected": false, "status": -1,
"url": "http://notahost.nodomain"}
        to retry, use: --limit @/Users/jkeating/src/mastery/errors.retry

PLAY RECAP ******************************************************************
localhost                  : ok=0    changed=0    unreachable=0    failed=1

exit 2
~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml *******************************************************
1 plays in errors.yaml

PLAY [error handling] ******************************************************

TASK [broken website] ******************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
fatal: [localhost]: FAILED! => {"changed": false, "content": "", "failed": true,
 "msg": "Status code was not [200]: Request failed: <urlopen error [Errno 8] nod
ename nor servname provided, or not known>", "redirected": false, "status": -1,
"url": "http://notahost.nodomain"}
...ignoring

PLAY RECAP *****************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ********************************************************
1 plays in errors.yaml

PLAY [error handling] *******************************************************

TASK [query sessions] *******************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
fatal: [scsihost]: FAILED! => {"changed": true, "cmd": ["/sbin/iscsiadm", "-m",
"session"], "delta": "0:00:00.002891", "end": "2016-12-30 00:11:21.769468", "fai
led": true, "rc": 21, "start": "2016-12-30 00:11:21.766577", "stderr": "iscsiadm
: No active sessions.", "stdout": "", "stdout_lines": [], "warnings": []}
        to retry, use: --limit @/Users/jkeating/src/mastery/errors.retry

PLAY RECAP ******************************************************************
scsihost                   : ok=0    changed=0    unreachable=0    failed=1

exit 2
~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ***********************************************************
1 plays in errors.yaml

PLAY [error handling] **********************************************************

TASK [query sessions] *********************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
changed: [scsihost] => {"changed": true, "cmd": ["/sbin/iscsiadm", "-m", "sessio
n"], "delta": "0:00:00.003154", "end": "2016-12-30 00:13:36.504164", "failed": f
alse, "failed_when_result": false, "rc": 21, "start": "2016-12-30 00:13:36.50101
0", "stderr": "iscsiadm: No active sessions.", "stdout": "", "stdout_lines": [],
 "warnings": []}

PLAY RECAP ********************************************************************
scsihost                   : ok=1    changed=1    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml *******************************************************
1 plays in errors.yaml

PLAY [error handling] *******************************************************

TASK [delete branch bad] ****************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
fatal: [localhost]: FAILED! => {"changed": true, "cmd": ["git", "branch", "-D",
"badfeature"], "delta": "0:00:00.021737", "end": "2016-12-29 16:17:17.590875", "
failed": true, "rc": 1, "start": "2016-12-29 16:17:17.569138", "stderr": "error:
 branch 'badfeature' not found.", "stdout": "", "stdout_lines": [], "warnings":
[]}
        to retry, use: --limit @/Users/jkeating/src/mastery/errors.retry

PLAY RECAP ******************************************************************
localhost                  : ok=0    changed=0    unreachable=0    failed=1

exit 2
~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ********************************************************
1 plays in errors.yaml

PLAY [error handling] *******************************************************

TASK [check if branch badfeature exists] ************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
changed: [localhost] => {"changed": true, "cmd": ["git", "branch"], "delta": "0:
00:00.014943", "end": "2016-12-29 16:20:38.287924", "rc": 0, "start": "2016-12-2
9 16:20:38.272981", "stderr": "", "stdout": "* master", "stdout_lines": ["* mast
er"], "warnings": []}

TASK [delete branch bad] ****************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:13
skipping: [localhost] => {"changed": false, "skip_reason": "Conditional check fa
iled", "skipped": true}

PLAY RECAP ******************************************************************
localhost                  : ok=1    changed=1    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml *********************************************************
1 plays in errors.yaml

PLAY [error handling] ********************************************************

TASK [delete branch bad] *****************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
changed: [localhost] => {"changed": true, "cmd": ["git", "branch", "-D", "badfea
ture"], "delta": "0:00:00.012246", "end": "2016-12-29 16:27:47.906103", "failed"
: false, "failed_when_result": false, "rc": 1, "start": "2016-12-29 16:27:47.893
857", "stderr": "error: branch 'badfeature' not found.", "stdout": "", "stdout_l
ines": [], "warnings": []}


PLAY RECAP ******************************************************************
localhost                  : ok=1    changed=1    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ****************************************************
1 plays in errors.yaml

PLAY [error handling] ***************************************************

TASK [delete branch bad] ***********************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
ok: [localhost] => {"changed": false, "cmd": ["git", "branch", "-D", "badfeature
"], "delta": "0:00:00.011735", "end": "2016-12-29 16:29:28.500735", "failed": fa
lse, "failed_when_result": false, "rc": 1, "start": "2016-12-29 16:29:28.489000"
, "stderr": "error: branch 'badfeature' not found.", "stdout": "", "stdout_lines
": [], "warnings": []}

PLAY RECAP *************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ********************************************************
1 plays in errors.yaml

PLAY [error handling] *******************************************************

TASK [delete branch bad] ****************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
ok: [localhost] => {"changed": false, "cmd": ["git", "branch", "-D", "badfeature
"], "delta": "0:00:00.011735", "end": "2016-12-29 16:29:28.500735", "failed": fa
lse, "failed_when_result": false, "rc": 1, "start": "2016-12-29 16:29:28.489000"
, "stderr": "error: branch 'badfeature' not found.", "stdout": "", "stdout_lines
": [], "warnings": []}

PLAY RECAP ******************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml **************************************************
1 plays in errors.yaml


PLAY [error handling] *************************************************


TASK [discover tango directory] **************************************
task path: /Users/jkeating/src/mastery/errors.yaml:7
ok: [localhost] => {"changed": false, "stat": {"atime": 1444194872.0, "ctime": 1
444194872.0, "dev": 16777220, "executable": true, "exists": true, "gid": 0, "gr_
name": "wheel", "inode": 3181585, "isblk": false, "ischr": false, "isdir": true,
 "isfifo": false, "isgid": false, "islnk": false, "isreg": false, "issock": fals
e, "isuid": false, "mode": "0755", "mtime": 1444194872.0, "nlink": 2, "path": "/
srv/whiskey/tango", "pw_name": "root", "readable": true, "rgrp": true, "roth": t
rue, "rusr": true, "size": 68, "uid": 0, "wgrp": false, "woth": false, "writeabl
e": false, "wusr": true, "xgrp": true, "xoth": true, "xusr": true}}


TASK [run frobitz] ***************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:11
skipping: [localhost] => {"changed": false, "skip_reason": "Conditional check fa
iled", "skipped": true}


PLAY RECAP **********************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0


~/src/mastery> _
```

~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml **
1 plays in errors.yaml

PLAY [error handling] ***

TASK [run frobitz] ***
task path: /Users/jkeating/src/mastery/errors.yaml:7
skipping: [localhost] => {"changed": false, "msg": "skipped, since /srv/whiskey/
tango exists", "skipped": true}

PLAY RECAP ***
localhost   : ok=0   changed=0   unreachable=0   failed=0

~/src/mastery> _

~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml **
1 plays in errors.yaml

PLAY [error handling] ***

TASK [discover iscsi sessions] **
task path: /Users/jkeating/src/mastery/errors.yaml:7
ok: [scsihost] => {"changed": false, "cmd": ["/sbin/iscsiadm", "-m", "session"],
 "delta": "0:00:00.003290", "end": "2016-12-30 00:49:34.679361", "failed": false
, "failed_when_result": false, "rc": 21, "start": "2016-12-30 00:49:34.676071",
"stderr": "iscsiadm: No active sessions.", "stdout": "", "stdout_lines": [], "wa
rnings": []}

PLAY RECAP ***
scsihost   : ok=1   changed=0   unreachable=0   failed=0

~/src/mastery> _

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ********************************************************
1 plays in errors.yaml

PLAY [error handling] *******************************************************

TASK [delete branch bad] ****************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:8
fatal: [localhost]: FAILED! => {"changed": true, "cmd": ["git", "branch", "-D",
"badfeature"], "delta": "0:00:00.007540", "end": "2016-12-29 17:49:37.876734", "
failed": true, "rc": 1, "start": "2016-12-29 17:49:37.869194", "stderr": "error:
 branch 'badfeature' not found.", "stdout": "", "stdout_lines": [], "warnings":
[]}

TASK [cleanup task] *********************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:18
ok: [localhost] => {
    "msg": "I am cleaning up"
}

TASK [cleanup task 2] ******************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:22
ok: [localhost] => {
    "msg": "I am also cleaning up"
}

TASK [task after block] ****************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:26
ok: [localhost] => {
    "msg": "Execution goes on"
}

PLAY RECAP *****************************************************************
localhost                  : ok=3    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults


PLAYBOOK: errors.yaml **************************************************************
1 plays in errors.yaml


PLAY [error handling] *************************************************************


TASK [delete branch bad] *********************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:8
fatal: [localhost]: FAILED! => {"changed": true, "cmd": ["git", "branch", "-D",
"badfeature"], "delta": "0:00:00.012242", "end": "2016-12-29 17:58:08.111992", "
failed": true, "rc": 1, "start": "2016-12-29 17:58:08.099750", "stderr": "error:
 branch 'badfeature' not found.", "stdout": "", "stdout_lines": [], "warnings":
[]}


TASK [cleanup task] **************************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:18
ok: [localhost] => {
    "msg": "I am cleaning up"
}


TASK [cleanup task 2] ************************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:22
ok: [localhost] => {
    "msg": "I am also cleaning up"
}


TASK [most important task] *******************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:27
ok: [localhost] => {
    "msg": "Never going to let you down"
}


TASK [task after block] **********************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:31
ok: [localhost] => {
    "msg": "Execution goes on"
}


PLAY RECAP ***********************************************************************
localhost                  : ok=4    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts errors.yaml -vv
No config file found; using defaults

PLAYBOOK: errors.yaml ************************************************************
1 plays in errors.yaml

PLAY [error handling] ***********************************************************

TASK [delete branch bad] ********************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:8
changed: [localhost] => {"changed": true, "cmd": ["git", "branch", "-D", "badfea
ture"], "delta": "0:00:00.013764", "end": "2016-12-29 18:03:32.373085", "failed"
: false, "failed_when_result": false, "rc": 1, "start": "2016-12-29 18:03:32.359
321", "stderr": "error: branch 'badfeature' not found.", "stdout": "", "stdout_l
ines": [], "warnings": []}

TASK [this task is lost] ********************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:17
ok: [localhost] => {
    "msg": "I do not get seen"
}

TASK [most important task] ******************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:31
ok: [localhost] => {
    "msg": "Never going to let you down"
}

TASK [task after block] *********************************************************
task path: /Users/jkeating/src/mastery/errors.yaml:35
ok: [localhost] => {
    "msg": "Execution goes on"
}

PLAY RECAP *********************************************************************
localhost                  : ok=4    changed=1    unreachable=0    failed=0

~/src/mastery> _
```

Chapter 5: Composing Reusable Ansible Content with Roles

```
                    2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/more-tasks.yaml

PLAYBOOK: includer.yaml ********************************************************
1 plays in includer.yaml

PLAY [task inclusion] *********************************************************

TASK [non-included task] *****************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:6
ok: [localhost] => {
    "msg": "I am not included"
}

TASK [included task 1] *******************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:1
ok: [localhost] => {
    "msg": "I am the first included task"
}

TASK [included task 2] *******************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:5
ok: [localhost] => {
    "msg": "I am the second included task"
}

PLAY RECAP *******************************************************************
localhost                  : ok=3    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/more-tasks.yaml

PLAYBOOK: includer.yaml ****************************************************
1 plays in includer.yaml

PLAY [task inclusion] *****************************************************

TASK [non-included task] **************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:6
ok: [localhost] => {
    "msg": "I am not included"
}

TASK [included task 1] ****************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:1
ok: [localhost] => {
    "msg": "I am the first included task"
}

TASK [included task 2] ****************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:5
ok: [localhost] => {
    "msg": "I am the second included task"
}

TASK [after-included tasks] ***********************************************
task path: /Users/jkeating/src/mastery/includer.yaml:12
ok: [localhost] => {
    "msg": "I run last"
}

PLAY RECAP ****************************************************************
localhost                  : ok=4    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/files.yaml
statically included: /Users/jkeating/src/mastery/files.yaml

PLAYBOOK: includer.yaml ********************************************************
1 plays in includer.yaml

PLAY [task inclusion] *********************************************************

TASK [create leading path] ***************************************************
task path: /Users/jkeating/src/mastery/files.yaml:1
changed: [localhost] => {"changed": true, "gid": 0, "group": "wheel", "mode": "0
755", "owner": "jkeating", "path": "/tmp/foo", "size": 68, "state": "directory",
 "uid": 501}

TASK [touch the file] ********************************************************
task path: /Users/jkeating/src/mastery/files.yaml:6
changed: [localhost] => {"changed": true, "dest": "/tmp/foo/herp", "gid": 0, "gr
oup": "wheel", "mode": "0644", "owner": "jkeating", "size": 0, "state": "file",
"uid": 501}

TASK [create leading path] ***************************************************
task path: /Users/jkeating/src/mastery/files.yaml:1
ok: [localhost] => {"changed": false, "gid": 0, "group": "wheel", "mode": "0755"
, "owner": "jkeating", "path": "/tmp/foo", "size": 102, "state": "directory", "u
id": 501}

TASK [touch the file] ********************************************************
task path: /Users/jkeating/src/mastery/files.yaml:6
changed: [localhost] => {"changed": true, "dest": "/tmp/foo/derp", "gid": 0, "gr
oup": "wheel", "mode": "0644", "owner": "jkeating", "size": 0, "state": "file",
"uid": 501}

PLAY RECAP *******************************************************************
localhost                  : ok=4    changed=3    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/files.yaml

PLAYBOOK: includer.yaml ********************************************************
1 plays in includer.yaml

PLAY [task inclusion] *********************************************************

TASK [create leading path] ***************************************************
task path: /Users/jkeating/src/mastery/files.yaml:1
ok: [localhost] => (item={'key': u'herp', 'value': {u'path': u'/tmp/foo'}}) => {
"changed": false, "gid": 0, "group": "wheel", "item": {"key": "herp", "value": {
"path": "/tmp/foo"}}, "mode": "0755", "owner": "jkeating", "path": "/tmp/foo", "
size": 136, "state": "directory", "uid": 501}
ok: [localhost] => (item={'key': u'derp', 'value': {u'path': u'/tmp/foo'}}) => {
"changed": false, "gid": 0, "group": "wheel", "item": {"key": "derp", "value": {
"path": "/tmp/foo"}}, "mode": "0755", "owner": "jkeating", "path": "/tmp/foo", "
size": 136, "state": "directory", "uid": 501}

TASK [touch the file] ********************************************************
task path: /Users/jkeating/src/mastery/files.yaml:7
changed: [localhost] => (item={'key': u'herp', 'value': {u'path': u'/tmp/foo'}})
 => {"changed": true, "dest": "/tmp/foo/herp", "gid": 0, "group": "wheel", "item
": {"key": "herp", "value": {"path": "/tmp/foo"}}, "mode": "0644", "owner": "jke
ating", "size": 0, "state": "file", "uid": 501}
changed: [localhost] => (item={'key': u'derp', 'value': {u'path': u'/tmp/foo'}})
 => {"changed": true, "dest": "/tmp/foo/derp", "gid": 0, "group": "wheel", "item
": {"key": "derp", "value": {"path": "/tmp/foo"}}, "mode": "0644", "owner": "jke
ating", "size": 0, "state": "file", "uid": 501}

PLAY RECAP ******************************************************************
localhost                  : ok=2    changed=1    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/more-tasks.yaml

PLAYBOOK: includer.yaml ****************************************************
1 plays in includer.yaml

PLAY [task inclusion] *****************************************************

TASK [included task 1] ****************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:1
ok: [localhost] => (item=True) => {
    "item": true,
    "msg": "I am the first included task"
}
skipping: [localhost] => (item=False)  => {"changed": false, "item": false, "ski
p_reason": "Conditional check failed", "skipped": true}

TASK [included task 2] ****************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:6
ok: [localhost] => (item=True) => {
    "item": true,
    "msg": "I am the second included task"
}
skipping: [localhost] => (item=False)  => {"changed": false, "item": false, "ski
p_reason": "Conditional check failed", "skipped": true}

PLAY RECAP ***************************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/more-tasks.yaml
statically included: /Users/jkeating/src/mastery/more-tasks.yaml

PLAYBOOK: includer.yaml ***********************************************************
1 plays in includer.yaml

PLAY [task inclusion] ************************************************************

TASK [included task] ************************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:11
ok: [localhost] => {
    "msg": "My data is first"
}

TASK [included task] ************************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:11
ok: [localhost] => {
    "msg": "My data is second"
}

PLAY RECAP **********************************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
● ● ●                    2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv --tags second

No config file found; using defaults
statically included: /Users/jkeating/src/mastery/more-tasks.yaml
statically included: /Users/jkeating/src/mastery/more-tasks.yaml

PLAYBOOK: includer.yaml *********************************************************
1 plays in includer.yaml

PLAY [task inclusion] **********************************************************

TASK [included task] **********************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:11
ok: [localhost] => {
    "msg": "My data is second"
}

PLAY RECAP ********************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults

PLAYBOOK: includer.yaml ***********************************************************
1 plays in includer.yaml

PLAY [task inclusion] *************************************************************

TASK [include] *******************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:15
included: /Users/jkeating/src/mastery/more-tasks.yaml for localhost
included: /Users/jkeating/src/mastery/more-tasks.yaml for localhost

TASK [included task 1] ***********************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:1
ok: [localhost] => {
    "msg": "I am the first included task with one"
}

TASK [included task 2] ***********************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:6
ok: [localhost] => {
    "msg": "I am the second included task with one"
}

TASK [included task 1] ***********************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:1
ok: [localhost] => {
    "msg": "I am the first included task with two"
}

TASK [included task 2] ***********************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:6
ok: [localhost] => {
    "msg": "I am the second included task with two"
}

PLAY RECAP ***********************************************************************
localhost                  : ok=6    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults

PLAYBOOK: includer.yaml ************************************************************
1 plays in includer.yaml

PLAY [task inclusion] *************************************************************

TASK [include] *******************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:15
included: /Users/jkeating/src/mastery/more-tasks.yaml for localhost
included: /Users/jkeating/src/mastery/more-tasks.yaml for localhost

TASK [included task 1] ***********************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:2
ok: [localhost] => (item=a) => {
    "item": "a",
    "msg": "I combine a and one"
}
ok: [localhost] => (item=b) => {
    "item": "b",
    "msg": "I combine b and one"
}

TASK [included task 1] ***********************************************************
task path: /Users/jkeating/src/mastery/more-tasks.yaml:2
ok: [localhost] => (item=a) => {
    "item": "a",
    "msg": "I combine a and two"
}
ok: [localhost] => (item=b) => {
    "item": "b",
    "msg": "I combine b and two"
}

PLAY RECAP ***********************************************************************
localhost                  : ok=4    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/handlers.yaml

PLAYBOOK: includer.yaml ***********************************************************
1 plays in includer.yaml

PLAY [task inclusion] *************************************************************

TASK [a task] ********************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:6
NOTIFIED HANDLER a handler
ok: [localhost] => {
    "msg": "I am a changing task"
}

RUNNING HANDLER [a handler] ******************************************************
ok: [localhost] => {
    "msg": "handling a thing"
}

PLAY RECAP ***********************************************************************
localhost                  : ok=2    changed=1    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv -e foo=false
No config file found; using defaults
statically included: /Users/jkeating/src/mastery/handlers.yaml

PLAYBOOK: includer.yaml ********************************************************
1 plays in includer.yaml

PLAY [task inclusion] *********************************************************

TASK [a task] ****************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:6
NOTIFIED HANDLER a handler
ok: [localhost] => {
    "msg": "I am a changing task"
}

RUNNING HANDLER [a handler] **************************************************
skipping: [localhost] => {"changed": false, "skip_reason": "Conditional check fa
iled", "skipped": true}

PLAY RECAP *******************************************************************
localhost                  : ok=1    changed=1    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv
No config file found; using defaults

PLAYBOOK: includer.yaml *********************************************************
1 plays in includer.yaml

PLAY [vars] ********************************************************************

TASK [a task] ******************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:9
ok: [localhost] => {
    "msg": "I am a derp"
}

PLAY RECAP *********************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv -e varfile=va
riables.yaml
No config file found; using defaults

PLAYBOOK: includer.yaml *********************************************************
1 plays in includer.yaml

PLAY [vars] ********************************************************************

TASK [a task] ******************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:9
ok: [localhost] => {
    "msg": "I am a derp"
}

PLAY RECAP *********************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
●●●                    2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv -e varfile=va
riables.yaml
No config file found; using defaults

PLAYBOOK: includer.yaml ***********************************************************
1 plays in includer.yaml

PLAY [vars] ***********************************************************************

TASK [load variables] ************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:9
ok: [localhost] => {"ansible_facts": {"name": "derp"}, "changed": false}

TASK [a task] ********************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:12
ok: [localhost] => {
    "msg": "I am a derp"
}

PLAY RECAP **********************************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv -e varfile=va
riables.yaml
No config file found; using defaults

PLAYBOOK: includer.yaml ****************************************************************
1 plays in includer.yaml

PLAY [vars] ****************************************************************

TASK [setup] ****************************************************************
ok: [localhost]

TASK [load variables] ****************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:9
ok: [localhost] => (item=/Users/jkeating/src/mastery/variables.yaml) => {"ansibl
e_facts": {"name": "derp"}, "item": "/Users/jkeating/src/mastery/variables.yaml"
}

TASK [a task] ****************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:16
ok: [localhost] => {
    "msg": "I am a derp"
}

PLAY RECAP ****************************************************************
localhost                  : ok=3    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts includer.yaml -vv -e @variables
.yaml
No config file found; using defaults

PLAYBOOK: includer.yaml ******************************************************
1 plays in includer.yaml

PLAY [vars] ******************************************************************

TASK [a task] ****************************************************************
task path: /Users/jkeating/src/mastery/includer.yaml:16
ok: [localhost] => {
    "msg": "I am a derp"
}

PLAY RECAP *******************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```



```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts roleplay.yaml -vv
No config file found; using defaults

PLAYBOOK: roleplay.yaml ******************************************************
1 plays in roleplay.yaml

PLAY [localhost] *************************************************************

TASK [simple : print a variable] ********************************************
task path: /Users/jkeating/src/mastery/roles/simple/tasks/main.yaml:2
ok: [localhost] => {
    "derp": "herp"
}

PLAY RECAP *******************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts roleplay.yaml -vv
No config file found; using defaults

PLAYBOOK: roleplay.yaml ***************************************************
1 plays in roleplay.yaml

PLAY [localhost] *********************************************************

TASK [simple : print a variable] ****************************************
task path: /Users/jkeating/src/mastery/roles/simple/tasks/main.yaml:2
ok: [localhost] => {
    "derp": "newval"
}

PLAY RECAP **************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts roleplay.yaml -vv
No config file found; using defaults

PLAYBOOK: roleplay.yaml ***********************************************************
1 plays in roleplay.yaml

PLAY [localhost] ******************************************************************

TASK [pretask] ********************************************************************
task path: /Users/jkeating/src/mastery/roleplay.yaml:6
NOTIFIED HANDLER say hi
ok: [localhost] => {
    "msg": "a pre task"
}

RUNNING HANDLER [say hi] **********************************************************
ok: [localhost] => {
    "msg": "hi"
}

TASK [simple : print a variable] *************************************************
task path: /Users/jkeating/src/mastery/roles/simple/tasks/main.yaml:2
NOTIFIED HANDLER say hi
ok: [localhost] => {
    "derp": "newval"
}

TASK [task] ***********************************************************************
task path: /Users/jkeating/src/mastery/roleplay.yaml:16
ok: [localhost] => {
    "msg": "a task"
}

RUNNING HANDLER [say hi] **********************************************************
ok: [localhost] => {
    "msg": "hi"
}

TASK [posttask] *******************************************************************
task path: /Users/jkeating/src/mastery/roleplay.yaml:23
NOTIFIED HANDLER say hi
ok: [localhost] => {
    "msg": "a post task"
}

RUNNING HANDLER [say hi] **********************************************************
ok: [localhost] => {
    "msg": "hi"
}

PLAY RECAP ************************************************************************
localhost                  : ok=7    changed=4    unreachable=0    failed=0

~/src/mastery>
```

```
~/src/mastery> ansible-galaxy install -p roles/ angstwad.docker_ubuntu
- downloading role 'docker_ubuntu', owned by angstwad
- downloading role from https://github.com/angstwad/docker.ubuntu/archive/v2.1.0
.tar.gz
- extracting angstwad.docker_ubuntu to roles/angstwad.docker_ubuntu
- angstwad.docker_ubuntu was installed successfully
~/src/mastery> _
```

```
~/src/mastery> ansible-galaxy list -p roles/
- angstwad.docker_ubuntu, v2.1.0
~/src/mastery> ansible-galaxy info -p roles/ angstwad.docker_ubuntu |head -n 36
[DEPRECATION WARNING]: The comma separated role spec format, use the
yaml/explicit format instead..
This feature will be removed in a future release.
 Deprecation warnings can be disabled by setting deprecation_warnings=False in
ansible.cfg.

Role: angstwad.docker_ubuntu
        description: Docker on Ubuntu greater than 12.04
        active: True
        commit: 0af1f02708abe8101940efe565c5dafd4c12032e
        commit_message: Merge pull request #122 from lhoss/configurable_proxy

Configurable proxy in the docker config
        commit_url: https://github.com/angstwad/docker.ubuntu/commit/0af1f02708a
be8101940efe565c5dafd4c12032e
        company:
        created: 2014-01-28T03:13:44.951Z
        dependencies: []
        download_count: 18598
        forks_count: 125
        galaxy_info:
                author: Paul Durivage
                categories: ['development', 'packaging', 'system']
                license: Apache v2.0
                min_ansible_version: 1.2
                platforms: [{'name': 'Debian', 'versions': ['jessie']}, {'name':
 'Ubuntu', 'versions': ['precise', 'raring', 'saucy', 'trusty']}]
        github_branch:
        github_repo: docker.ubuntu
        github_user: angstwad
        id: 292
        install_date: Fri Dec 30 22:47:22 2016
        intalled_version: v2.1.0
        is_valid: True
        issue_tracker_url: https://github.com/angstwad/docker.ubuntu/issues
        license: Apache v2.0
        min_ansible_version: 1.2
        modified: 2016-12-30T22:39:54.000Z
        namespace: angstwad
        open_issues_count: 7
        path: [u'roles/']
        readme: docker_ubuntu
=========
~/src/mastery> _
```

```
~/src/mastery> cat roles/angstwad.docker_ubuntu/meta/main.yml
---
galaxy_info:
  author: Paul Durivage
  description: Docker on Ubuntu greater than 12.04
  license: Apache v2.0
  min_ansible_version: 1.2
  platforms:
    - name: Debian
      versions:
        - jessie
    - name: Ubuntu
      versions:
        - precise
        - raring
        - saucy
        - trusty
  categories:
    - development
    - packaging
    - system
dependencies: []
  # List your role dependencies here, one per line. Only
  # dependencies available via galaxy should be listed here.
  # Be sure to remove the '[]' above if you add dependencies
  # to this list.

~/src/mastery>
```

```
~/src/mastery> ansible-galaxy init --help
Usage: ansible-galaxy init [options] role_name

Options:
  -f, --force             Force overwriting an existing role
  -h, --help              show this help message and exit
  -c, --ignore-certs      Ignore SSL certificate validation errors.
  -p INIT_PATH, --init-path=INIT_PATH
                          The path in which the skeleton role will be created.
                          The default is the current working directory.
  --offline               Don't query the galaxy API when creating roles
  -s API_SERVER, --server=API_SERVER
                          The API server destination
  -v, --verbose           verbose mode (-vvv for more, -vvvv to enable
                          connection debugging)
  --version               show program's version number and exit
~/src/mastery>
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-galaxy init -p roles/ autogen
- autogen was created successfully
~/src/mastery> tree roles/autogen
roles/autogen
├── README.md
├── defaults
│   └── main.yml
├── files
├── handlers
│   └── main.yml
├── meta
│   └── main.yml
├── tasks
│   └── main.yml
├── templates
├── tests
│   ├── inventory
│   └── test.yml
└── vars
    └── main.yml

8 directories, 8 files
~/src/mastery>
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-galaxy install -p /opt/ansible/roles git+git@git.internal
.site:ansible-roles/foowhiz
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-galaxy install -p /opt/ansible/roles git+git@git.internal
.site:ansible-roles/foowhiz,v1
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-galaxy install -p /opt/ansible/roles git+git@git.internal
.site:ansible-roles/foowhiz,,foo-whiz-common
```

```
~/src/mastery> ansible-galaxy install -r foowhiz-reqs.yaml
```

Chapter 6: Minimizing Downtime with Rolling Deployments

```
● ● ●                2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ansible-playbook -i mastery-hosts failtest.yaml

PLAY [any errors fatal] ****************************************************

TASK [fail last host] ******************************************************
skipping: [failer04]
skipping: [failer03]
skipping: [failer05]
skipping: [failer01]
skipping: [failer02]
skipping: [failer06]
skipping: [failer07]
skipping: [failer09]
skipping: [failer08]
fatal: [failer10]: FAILED! => {"changed": false, "failed": true, "msg": "I am la
st"}

NO MORE HOSTS LEFT *********************************************************
        to retry, use: --limit @/Users/jkeating/src/mastery/failtest.retry

PLAY RECAP ****************************************************************
failer01                    : ok=0    changed=0    unreachable=0    failed=0
failer02                    : ok=0    changed=0    unreachable=0    failed=0
failer03                    : ok=0    changed=0    unreachable=0    failed=0
failer04                    : ok=0    changed=0    unreachable=0    failed=0
failer05                    : ok=0    changed=0    unreachable=0    failed=0
failer06                    : ok=0    changed=0    unreachable=0    failed=0
failer07                    : ok=0    changed=0    unreachable=0    failed=0
failer08                    : ok=0    changed=0    unreachable=0    failed=0
failer09                    : ok=0    changed=0    unreachable=0    failed=0
failer10                    : ok=0    changed=0    unreachable=0    failed=1

exit 2
~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts failtest.yaml

PLAY [any errors fatal] ********************************************************

TASK [fail last host] *********************************************************
skipping: [failer01]
skipping: [failer03]
skipping: [failer04]
skipping: [failer06]
skipping: [failer09]
skipping: [failer07]
skipping: [failer08]
skipping: [failer02]
skipping: [failer05]
fatal: [failer10]: FAILED! => {"changed": false, "failed": true, "msg": "I am la
st"}

TASK [never ran] **************************************************************
skipping: [failer02]
skipping: [failer04]
skipping: [failer03]
skipping: [failer05]
skipping: [failer07]
skipping: [failer06]
skipping: [failer01]
skipping: [failer08]
ok: [failer09] => {
    "msg": "I should never be ran"
}
        to retry, use: --limit @/Users/jkeating/src/mastery/failtest.retry

PLAY RECAP ********************************************************************
failer01                   : ok=0    changed=0    unreachable=0    failed=0
failer02                   : ok=0    changed=0    unreachable=0    failed=0
failer03                   : ok=0    changed=0    unreachable=0    failed=0
failer04                   : ok=0    changed=0    unreachable=0    failed=0
failer05                   : ok=0    changed=0    unreachable=0    failed=0
failer06                   : ok=0    changed=0    unreachable=0    failed=0
failer07                   : ok=0    changed=0    unreachable=0    failed=0
failer08                   : ok=0    changed=0    unreachable=0    failed=0
failer09                   : ok=1    changed=0    unreachable=0    failed=0
failer10                   : ok=0    changed=0    unreachable=0    failed=1

exit 2
~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts failtest.yaml

PLAY [any errors fatal] ********************************************************

TASK [fail last host] *********************************************************
fatal: [failer02]: FAILED! => {"changed": false, "failed": true, "msg": "I am la
st"}
skipping: [failer05]
skipping: [failer04]
fatal: [failer03]: FAILED! => {"changed": false, "failed": true, "msg": "I am la
st"}
skipping: [failer06]
fatal: [failer01]: FAILED! => {"changed": false, "failed": true, "msg": "I am la
st"}
skipping: [failer08]
skipping: [failer07]
skipping: [failer09]
skipping: [failer10]


NO MORE HOSTS LEFT ************************************************************

NO MORE HOSTS LEFT ************************************************************
        to retry, use: --limit @/Users/jkeating/src/mastery/failtest.retry

PLAY RECAP ********************************************************************
failer01                   : ok=0    changed=0    unreachable=0    failed=1
failer02                   : ok=0    changed=0    unreachable=0    failed=1
failer03                   : ok=0    changed=0    unreachable=0    failed=1
failer04                   : ok=0    changed=0    unreachable=0    failed=0
failer05                   : ok=0    changed=0    unreachable=0    failed=0
failer06                   : ok=0    changed=0    unreachable=0    failed=0
failer07                   : ok=0    changed=0    unreachable=0    failed=0
failer08                   : ok=0    changed=0    unreachable=0    failed=0
failer09                   : ok=0    changed=0    unreachable=0    failed=0
failer10                   : ok=0    changed=0    unreachable=0    failed=0

exit 2
~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts failtest.yaml --limit failer01:
failer01

PLAY [any errors fatal] ********************************************************

TASK [run first] **************************************************************
ok: [failer01] => {
    "msg": "I am a change"
}

TASK [fail last host] *********************************************************
fatal: [failer01]: FAILED! => {"changed": false, "failed": true, "msg": "I am la
st"}

RUNNING HANDLER [critical handler] ********************************************
        to retry, use: --limit @/Users/jkeating/src/mastery/failtest.retry

PLAY RECAP ********************************************************************
failer01                   : ok=1    changed=1    unreachable=0    failed=1

exit 2
~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-hosts failtest.yaml --limit failer01:
failer01

PLAY [any errors fatal] **************************************************

TASK [run first] ********************************************************
ok: [failer01] => {
    "msg": "I am a change"
}

TASK [fail last host] ***************************************************
fatal: [failer01]: FAILED! => {"changed": false, "failed": true, "msg": "I am la
st"}

RUNNING HANDLER [critical handler] **************************************
ok: [failer01] => {
    "msg": "I really need to run"
}
        to retry, use: --limit @/Users/jkeating/src/mastery/failtest.retry

PLAY RECAP **************************************************************
failer01                   : ok=2    changed=1    unreachable=0    failed=1

exit 2
~/src/mastery> _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts micro.yaml

PLAY [apply microA] ***********************************************************

TASK [microA : install microA package] ***************************************
ok: [localhost] => {
    "msg": "This is installing A"
}

RUNNING HANDLER [microA : restart microA] ************************************
ok: [localhost] => {
    "msg": "microA is restarting"
}

PLAY [apply microB] ***********************************************************

TASK [microB : install microB package] ***************************************
ok: [localhost] => {
    "msg": "This is installing B"
}

RUNNING HANDLER [microB : restart microB] ************************************
ok: [localhost] => {
    "msg": "microB is restarting"
}

PLAY [restart microA] ********************************************************

TASK [restart microA for upgrade] *******************************************
skipping: [localhost]

PLAY [restart microB] ********************************************************

TASK [restart microB for upgrade] *******************************************
skipping: [localhost]

PLAY RECAP ******************************************************************
localhost                  : ok=4    changed=2    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts micro.yaml -e upgrade=true

PLAY [apply microA] ********************************************************

TASK [microA : install microA package] ************************************
ok: [localhost] => {
    "msg": "This is installing A"
}

RUNNING HANDLER [microA : restart microA] *********************************
skipping: [localhost]

PLAY [apply microB] ********************************************************

TASK [microB : install microB package] ************************************
ok: [localhost] => {
    "msg": "This is installing B"
}

RUNNING HANDLER [microB : restart microB] *********************************
skipping: [localhost]

PLAY [restart microA] ******************************************************

TASK [restart microA for upgrade] *****************************************
ok: [localhost] => {
    "msg": "microA is restarting"
}

PLAY [restart microB] ******************************************************

TASK [restart microB for upgrade] *****************************************
ok: [localhost] => {
    "msg": "microB is restarting"
}

PLAY RECAP ****************************************************************
localhost                  : ok=4    changed=2    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts forserial.yaml -vv
No config file found; using defaults

PLAYBOOK: forserial.yaml *****************************************************
1 plays in forserial.yaml

PLAY [parallel and serial] **************************************************

TASK [do a thing] **********************************************************
task path: /Users/jkeating/src/mastery/forserial.yaml:7
NOTIFIED HANDLER restart groot
ok: [failer01] => {
    "msg": "I am groot"
}
ok: [failer04] => {
    "msg": "I am groot"
}
ok: [failer03] => {
    "msg": "I am groot"
}
NOTIFIED HANDLER restart groot
ok: [failer02] => {
    "msg": "I am groot"
}

RUNNING HANDLER [restart groot] *********************************************
ok: [failer01 -> failer01] => (item=failer01) => {
    "item": "failer01",
    "msg": "I am groot?"
}
ok: [failer01 -> failer02] => (item=failer02) => {
    "item": "failer02",
    "msg": "I am groot?"
}
skipping: [failer01] => (item=failer03)  => {"changed": false, "item": "failer03
", "skip_reason": "Conditional check failed", "skipped": true}
skipping: [failer01] => (item=failer04)  => {"changed": false, "item": "failer04
", "skip_reason": "Conditional check failed", "skipped": true}

PLAY RECAP *****************************************************************
failer01                   : ok=2    changed=1    unreachable=0    failed=0
failer02                   : ok=1    changed=1    unreachable=0    failed=0
failer03                   : ok=1    changed=0    unreachable=0    failed=0
failer04                   : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

Chapter 7: Troubleshooting Ansible

```
~/src/mastery> ansible-playbook -i mastery-hosts vintro.yaml -vv

PLAY [variable introspection demo] *********************************************

TASK: [do a thing] ************************************************************
<localhost> REMOTE_MODULE uri url=https://derpops.bike
ok: [localhost] => {"changed": false, "content_location": "https://derpops.bike"
, "content_type": "text/html; charset=UTF-8", "date": "Sun, 31 May 2015 05:20:13
 GMT", "link": "<http://wp.me/4H3Bf>; rel=shortlink", "redirected": false, "serv
er": "Apache/2.4.6 (CentOS) OpenSSL/1.0.1e-fips PHP/5.4.16", "status": 200, "tra
nsfer_encoding": "chunked", "x_pingback": "https://derpops.bike/xmlrpc.php", "x_
powered_by": "PHP/5.4.16"}

TASK: [show derpops] **********************************************************
ok: [localhost] => {
    "var": {
        "derpops.server": "Apache/2.4.6 (CentOS) OpenSSL/1.0.1e-fips PHP/5.4.16"
    }
}

PLAY RECAP ********************************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> □
```

```
~/src/mastery> ansible-playbook -i mastery-hosts vintro.yaml -vv
No config file found; using defaults

PLAYBOOK: vintro.yaml ****************************************************************
1 plays in vintro.yaml

PLAY [variable introspection demo] **********************************************

TASK [setup] ********************************************************************
ok: [localhost]

TASK [show a complex hash] ******************************************************
task path: /Users/jkeating/src/mastery/vintro.yaml:6
ok: [localhost] => {
    "ansible_default_ipv4": {
        "address": "192.168.10.103",
        "broadcast": "192.168.10.255",
        "device": "en0",
        "flags": [
            "UP",
            "BROADCAST",
            "SMART",
            "RUNNING",
            "SIMPLEX",
            "MULTICAST"
        ],
        "gateway": "192.168.10.10",
        "interface": "en0",
        "macaddress": "e0:ac:cb:7c:a2:1a",
        "media": "Unknown",
        "media_select": "autoselect",
        "mtu": "1500",
        "netmask": "255.255.255.0",
        "network": "192.168.10.0",
        "options": [
            "PERFORMNUD"
        ],
        "status": "active",
        "type": "unknown"
    }
}

PLAY RECAP **********************************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts vintro.yaml -vv
No config file found; using defaults

PLAYBOOK: vintro.yaml ************************************************************
1 plays in vintro.yaml

PLAY [variable introspection demo] **********************************************

TASK [setup] ********************************************************************
ok: [localhost]

TASK [show a complex hash] ******************************************************
task path: /Users/jkeating/src/mastery/vintro.yaml:6
ok: [localhost] => {
    "ansible_default_ipv4.flags[-1]": "MULTICAST"
}

PLAY RECAP **********************************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts objmethod.yaml -vv
No config file found; using defaults

PLAYBOOK: objmethod.yaml ************************************************
1 plays in objmethod.yaml

PLAY [sub-element access styles] ***************************************

TASK [subscript style] ************************************************
task path: /Users/jkeating/src/mastery/objmethod.yaml:13
ok: [localhost] => {
    "derp['keys']": [
        "c",
        "d"
    ]
}

TASK [dot notation style] *********************************************
task path: /Users/jkeating/src/mastery/objmethod.yaml:17
ok: [localhost] => {
    "derp.keys": "<built-in method keys of dict object at 0x105979c58>"
}

PLAY RECAP ***********************************************************
localhost                  : ok=2    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
● ● ●          2. ansible-playbook -i mastery-hosts objmethod.yaml -vv (python)
~/src/mastery> ansible-playbook -i mastery-hosts objmethod.yaml -vv
No config file found; using defaults

PLAYBOOK: objmethod.yaml ***************************************************
1 plays in objmethod.yaml

PLAY [sub-element access styles] ******************************************

TASK [subscript style] ****************************************************
task path: /Users/jkeating/src/mastery/objmethod.yaml:14
ok: [localhost] => {
    "derp['keys']": [
        "c",
        "d"
    ]
}

TASK [failing task] *******************************************************
task path: /Users/jkeating/src/mastery/objmethod.yaml:18
fatal: [localhost]: FAILED! => {"failed": true, "msg": "the field 'args' has an
invalid value, which appears to include a variable that is undefined. The error
was: 'dict object' has no attribute 'missing'\n\nThe error appears to have been
in '/Users/jkeating/src/mastery/objmethod.yaml': line 18, column 7, but may\nbe
elsewhere in the file depending on the exact syntax problem.\n\nThe offending li
ne appears to be:\n\n\n   - name: failing task\n      ^ here\n"}
Debugger invoked
(debug) _
```

```
● ● ●          2. ansible-playbook -i mastery-hosts objmethod.yaml -vv (python)
Debugger invoked
(debug) p task
TASK: failing task
(debug) p task.args
{u'msg': u"this is {{ derp['missing'] }}"}
(debug) _
```

```
        # clear the cache here, which is only useful if more than
        # one Inventory objects are created when using the API directly
        self.clear_pattern_cache()
        self.clear_group_dict_cache()

        self.parse_inventory(host_list)

    def serialize(self):
        data = dict()
        return data

    def deserialize(self, data):
        pass

    def parse_inventory(self, host_list):

        import pdb; pdb.set_trace()
        if isinstance(host_list, string_types):
            if "," in host_list:
                host_list = host_list.split(",")
                host_list = [ h for h in host_list if h and h.strip() ]
                                                        109,9          10%
```

```
~/src/mastery> ansible-playbook -i mastery-hosts objmethod.yaml -vv
No config file found; using defaults
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/inven
tory/__init__.py(109)parse_inventory()
-> if isinstance(host_list, string_types):
(Pdb) _
```

```
~/src/mastery> ansible-playbook -i mastery-hosts objmethod.yaml -vv
No config file found; using defaults
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/inven
tory/__init__.py(109)parse_inventory()
-> if isinstance(host_list, string_types):
(Pdb) help

Documented commands (type help <topic>):
========================================
EOF     bt        cont      enable  jump  pp      run      unt
a       c         continue  exit    l     q       s        until
alias   cl        d         h       list  quit    step     up
args    clear     debug     help    n     r       tbreak   w
b       commands  disable   ignore  next  restart u        whatis
break   condition down      j       p     return  unalias  where

Miscellaneous help topics:
==========================
exec   pdb

Undocumented commands:
======================
retval  rv

(Pdb) _
```

```
(Pdb) where
  /Users/jkeating/.virtualenvs/ansible/bin/ansible-playbook(103)<module>()
-> exit_code = cli.run()
  /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/cli/p
laybook.py(132)run()
-> inventory = Inventory(loader=loader, variable_manager=variable_manager, host_
list=self.options.inventory)
  /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/inven
tory/__init__.py(97)__init__()
-> self.parse_inventory(host_list)
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/inven
tory/__init__.py(109)parse_inventory()
-> if isinstance(host_list, string_types):
(Pdb) list
104                 pass
105
106         def parse_inventory(self, host_list):
107
108             import pdb; pdb.set_trace()
109  ->         if isinstance(host_list, string_types):
110                 if "," in host_list:
111                     host_list = host_list.split(",")
112                     host_list = [ h for h in host_list if h and h.strip() ]
113
114             self.parser = None
(Pdb)
```

```
108             import pdb; pdb.set_trace()
109  ->         if isinstance(host_list, string_types):
110                 if "," in host_list:
111                     host_list = host_list.split(",")
112                     host_list = [ h for h in host_list if h and h.strip() ]
113
114             self.parser = None
(Pdb) p host_list
u'mastery-hosts'
(Pdb)
```

```
        self._file_name = file_name

        # dynamically load any plugins from the playbook directory
        for name, obj in get_all_plugin_loaders():
            if obj.subdir:
                plugin_path = os.path.join(self._basedir, obj.subdir)
                if os.path.isdir(plugin_path):
                    obj.add_directory(plugin_path)

        import pdb; pdb.set_trace()
        ds = self._loader.load_from_file(os.path.basename(file_name))
        if not isinstance(ds, list):
            # restore the basedir in case this error is caught and handled
                                                          76,9          68%
```

```
        self._tqm = TaskQueueManager(inventory=inventory, variable_manager=v
ariable_manager, loader=loader, options=options, passwords=self.passwords)

        # Note: We run this here to cache whether the default ansible ssh
        # executable supports control persist.  Sometime in the future we may
        # need to enhance this to check that ansible_ssh_executable specified
        # in inventory is also cached.  We can't do this caching at the point
        # where it is used (in task_executor) because that is post-fork and
        # therefore would be discarded after every task.
        import pdb; pdb.set_trace()
        check_for_controlpersist(C.ANSIBLE_SSH_EXECUTABLE)

    def run(self):

        '''
        Run the given playbook, based on the settings in the play which
        may limit the runs to serialized groups, etc.
        '''
                                                          67,9          21%
```

```
● ● ●        3. ansible-playbook -i mastery-hosts objmethod.yaml -vv (python)
~/src/mastery> ansible-playbook -i mastery-hosts objmethod.yaml -vv
No config file found; using defaults
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/execu
tor/playbook_executor.py(68)__init__()
-> check_for_controlpersist(C.ANSIBLE_SSH_EXECUTABLE)
(Pdb) _
```

```
● ● ●        3. ansible-playbook -i mastery-hosts objmethod.yaml -vv (python)
-> check_for_controlpersist(C.ANSIBLE_SSH_EXECUTABLE)
(Pdb) step
--Call--
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/utils
/ssh_functions.py(29)check_for_controlpersist()
-> def check_for_controlpersist(ssh_executable):
(Pdb) _
```

```
● ● ●        3. ansible-playbook -i mastery-hosts objmethod.yaml -vv (python)
(Pdb) list
 24
 25
 26        _HAS_CONTROLPERSIST = {}
 27
 28
 29  -> def check_for_controlpersist(ssh_executable):
 30         try:
 31             # If we've already checked this executable
 32             return _HAS_CONTROLPERSIST[ssh_executable]
 33         except KeyError:
 34             pass
(Pdb) _
```

```
(Pdb) l
 32                 return _HAS_CONTROLPERSIST[ssh_executable]
 33            except KeyError:
 34                pass
 35
 36            has_cp = True
 37  ->        try:
 38                cmd = subprocess.Popen([ssh_executable,'-o','ControlPersist'], s
tdout=subprocess.PIPE, stderr=subprocess.PIPE)
 39                (out, err) = cmd.communicate()
 40                if b"Bad configuration option" in err or b"Usage:" in err:
 41                    has_cp = False
 42            except OSError:
(Pdb)
```

```
 37  ->        try:
 38                cmd = subprocess.Popen([ssh_executable,'-o','ControlPersist'], s
tdout=subprocess.PIPE, stderr=subprocess.PIPE)
 39                (out, err) = cmd.communicate()
 40                if b"Bad configuration option" in err or b"Usage:" in err:
 41                    has_cp = False
 42            except OSError:
(Pdb) n
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/utils
/ssh_functions.py(38)check_for_controlpersist()
-> cmd = subprocess.Popen([ssh_executable,'-o','ControlPersist'], stdout=subproc
ess.PIPE, stderr=subprocess.PIPE)
(Pdb) n
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/utils
/ssh_functions.py(39)check_for_controlpersist()
-> (out, err) = cmd.communicate()
(Pdb) n
> /Users/jkeating/.virtualenvs/ansible/lib/python2.7/site-packages/ansible/utils
/ssh_functions.py(40)check_for_controlpersist()
-> if b"Bad configuration option" in err or b"Usage:" in err:
(Pdb) p err
'command-line line 0: Missing ControlPersist argument.\r\n'
(Pdb)
```

```python
            enabled = dict(type='bool'),
            masked = dict(type='bool'),
            daemon_reload= dict(type='bool', default=False, aliases=['daemon
-reload']),
            user= dict(type='bool', default=False),
        ),
        supports_check_mode=True,
        required_one_of=[['state', 'enabled', 'masked', 'daemon_reload']],
    )

    # initialize
    import rpdb; rpdb.set_trace(addr="0.0.0.0")
    systemctl = module.get_bin_path('systemctl')
    if module.params['user']:
        systemctl = systemctl + " --user"
    unit = module.params['name']
    rc = 0
    out = err = ''
    result = {
```

                                                    248,5   64%

```
~/src/mastery> ansible-playbook -i mastery-debug rpdb.yml -vv
No config file found; using defaults

PLAYBOOK: rpdb.yml *******************************************************
1 plays in rpdb.yml

PLAY [remote code debug] *************************************************

TASK [a remote module execution] ****************************************
task path: /Users/jkeating/src/mastery/rpdb.yml:7
```

```
~/src/mastery> telnet 169.44.129.174 4444
Trying 169.44.129.174...
Connected to ae.81.2ca9.ip4.static.sl-reverse.com.
Escape character is '^]'.
> /tmp/ansible_Sriym_/ansible_module_systemd.py(249)main()
-> systemctl = module.get_bin_path('systemctl')
(Pdb)
```

```
(Pdb) list
244                 required_one_of=[['state', 'enabled', 'masked', 'daemon_relo
ad']]),
245             )
246
247         # initialize
248         import rpdb; rpdb.set_trace(addr="0.0.0.0")
249  ->     systemctl = module.get_bin_path('systemctl')
250         if module.params['user']:
251             systemctl = systemctl + " --user"
252         unit = module.params['name']
253         rc = 0
254         out = err = ''
(Pdb)
```

```
  ● ● ●                    3. jkeating@serenity-2: ~/src/mastery (zsh)
TASK [a remote module execution] **********************************************
task path: /Users/jkeating/src/mastery/rpdb.yml:7
fatal: [debug.example.com]: FAILED! => {"changed": false, "failed": true, "modul
e_stderr": "", "module_stdout": "pdb is running on 0.0.0.0:4444\r\nTraceback (mo
st recent call last):\r\n  File \"/tmp/ansible__yWg_v/ansible_module_systemd.py\
", line 386, in <module>\r\n    main()\r\n  File \"/tmp/ansible__yWg_v/ansible_m
odule_systemd.py\", line 249, in main\r\n    systemctl = module.get_bin_path('sy
stemctl')\r\n  File \"/tmp/ansible__yWg_v/ansible_module_systemd.py\", line 249,
 in main\r\n    systemctl = module.get_bin_path('systemctl')\r\n  File \"/usr/li
b64/python2.7/bdb.py\", line 49, in trace_dispatch\r\n    return self.dispatch_l
ine(frame)\r\n  File \"/usr/lib64/python2.7/bdb.py\", line 68, in dispatch_line\
r\n    if self.quitting: raise BdbQuit\r\nbdb.BdbQuit\r\n", "msg": "MODULE FAILU
RE"}
        to retry, use: --limit @/Users/jkeating/src/mastery/rpdb.retry

PLAY RECAP ********************************************************************
debug.example.com          : ok=0    changed=0    unreachable=0    failed=1

exit 2
~/src/mastery> _
```

Chapter 8: Extending Ansible


```
~/src/mastery> ansible-playbook -i mastery-hosts simple_module.yaml -vv
No config file found; using defaults

PLAYBOOK: simple_module.yaml ********************************************************
1 plays in simple_module.yaml

PLAY [test remote_copy module] *****************************************************

TASK [ensure foo] ******************************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:7
changed: [localhost] => {"changed": true, "dest": "/tmp/foo", "gid": 0, "group":
 "wheel", "mode": "0644", "owner": "jkeating", "size": 0, "state": "file", "uid"
: 501}

TASK [do a remote copy] ************************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:12
changed: [localhost] => {"changed": true}

PLAY RECAP *************************************************************************
localhost                  : ok=2    changed=2    unreachable=0    failed=0

~/src/mastery> _
```

```
• • •                    2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ansible-doc -M library remote_copy |cat -
> REMOTE_COPY

  The remote_copy module copies a file on the remote host from a given
  source to a provided destination.

Options (= is mandatory):

= dest
        Path to the destination on the remote host for the copy

= source
        Path to a file on the source file on the remote host


MAINTAINERS: Jesse Keating
~/src/mastery> _
```

```
● ● ●                    2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-doc -M library remote_copy |cat -
> REMOTE_COPY

  The remote_copy module copies a file on the remote host from a given
  source to a provided destination.

Options (= is mandatory):

= dest
        Path to the destination on the remote host for the copy

= source
        Path to a file on the source file on the remote host

EXAMPLES:
# Example from Ansible Playbooks
- name: backup a config file
  remote_copy:
    source: /etc/herp/derp.conf
    dest: /root/herp-derp.conf.bak


MAINTAINERS: Jesse Keating
~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts simple_module.yaml -vv
No config file found; using defaults

PLAYBOOK: simple_module.yaml ************************************************
1 plays in simple_module.yaml

PLAY [test remote_copy module] *********************************************

TASK [ensure foo] **********************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:7
changed: [localhost] => {"changed": true, "dest": "/tmp/foo", "gid": 0, "group":
 "wheel", "mode": "0644", "owner": "jkeating", "size": 0, "state": "file", "uid"
: 501}

TASK [do a remote copy] ****************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:12
changed: [localhost] => {"changed": true, "dest": "/tmp/bar", "gid": 0, "group":
 "wheel", "mode": "0644", "owner": "jkeating", "size": 0, "source": "/tmp/foo",
"state": "file", "uid": 501}

PLAY RECAP *****************************************************************
localhost                  : ok=2    changed=2    unreachable=0    failed=0

~/src/mastery> _
```

```
● ● ●                    2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-doc -M library remote_copy |cat -
> REMOTE_COPY

  The remote_copy module copies a file on the remote host from a given
  source to a provided destination.

Options (= is mandatory):

= dest
        Path to the destination on the remote host for the copy

= source
        Path to a file on the source file on the remote host

EXAMPLES:
# Example from Ansible Playbooks
- name: backup a config file
  remote_copy:
    source: /etc/herp/derp.conf
    dest: /root/herp-derp.conf.bak

RETURN VALUES:
source:
  description: source file used for the copy
  returned: success
  type: string
  sample: "/path/to/file.name"
dest:
  description: destination of the copy
  returned: success
  type: string
  sample: "/path/to/destination.file"
```

```
● ● ●                    2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts simple_module.yaml -vv
No config file found; using defaults

PLAYBOOK: simple_module.yaml ************************************************
1 plays in simple_module.yaml

PLAY [test remote_copy module] *********************************************

TASK [ensure foo] *********************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:7
changed: [localhost] => {"changed": true, "dest": "/tmp/foo", "gid": 0, "group":
 "wheel", "mode": "0644", "owner": "jkeating", "size": 0, "state": "file", "uid"
: 501}

TASK [do a remote copy] ***************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:12
changed: [localhost] => {"ansible_facts": {"rc_dest": "/tmp/bar", "rc_source": "
/tmp/foo"}, "changed": true}

TASK [show a fact] ********************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:17
ok: [localhost] => {
    "rc_dest": "/tmp/bar"
}

PLAY RECAP ****************************************************************
localhost                  : ok=3    changed=2    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> file /tmp/foo /tmp/bar
/tmp/foo: cannot open `/tmp/foo' (No such file or directory)
/tmp/bar: cannot open `/tmp/bar' (No such file or directory)
~/src/mastery> ansible-playbook -i mastery-hosts simple_module.yaml -vv -C
No config file found; using defaults

PLAYBOOK: simple_module.yaml ************************************************
1 plays in simple_module.yaml

PLAY [test remote_copy module] *********************************************

TASK [ensure foo] **********************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:7
changed: [localhost] => {"changed": true, "dest": "/tmp/foo", "state": "absent"}

TASK [do a remote copy] ****************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:12
changed: [localhost] => {"ansible_facts": {"rc_dest": "/tmp/bar", "rc_source": "
/tmp/foo"}, "changed": true}

TASK [show a fact] *********************************************************
task path: /Users/jkeating/src/mastery/simple_module.yaml:17
ok: [localhost] => {
    "rc_dest": "/tmp/bar"
}

PLAY RECAP *****************************************************************
localhost                  : ok=3    changed=2    unreachable=0    failed=0

~/src/mastery> file /tmp/foo /tmp/bar
/tmp/foo: cannot open `/tmp/foo' (No such file or directory)
/tmp/bar: cannot open `/tmp/bar' (No such file or directory)
~/src/mastery> _
```

```
● ● ●                    2. jkeating@serenity-2: ~/src/mastery (zsh)

~/src/mastery> ansible-playbook -i mastery-hosts simple_filter.yaml -vv
No config file found; using defaults

PLAYBOOK: simple_filter.yaml ***************************************************
1 plays in simple_filter.yaml

PLAY [test cloud_truth filter] ************************************************

TASK [make a statement] ******************************************************
task path: /Users/jkeating/src/mastery/simple_filter.yaml:9
ok: [localhost] => {
    "msg": "I store my files in somebody else's computer"
}

PLAY RECAP *******************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
●●●                2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ansible-playbook -i mastery-hosts simple_filter.yaml -vv
Using /Users/jkeating/src/mastery/ansible.cfg as config file

PLAYBOOK: simple_filter.yaml **********************************************
¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯
1 plays in simple_filter.yaml

PLAY [test cloud_truth filter] *******************************************
¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯

TASK [make a statement] **************************************************
task path: /Users/jkeating/src/mastery/simple_filter.yaml:9
¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯
ok: [localhost] => {
    "msg": "I store my files in somebody else's computer"
}
¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯

PLAY RECAP **************************************************************
localhost                  : ok=1    changed=0    unreachable=0    failed=0

¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯¯\_(ツ)_/¯
~/src/mastery> _
```

```
●●●                2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ./mastery-inventory.py --help
usage: mastery-inventory.py [-h] [--list] [--host HOST]

Simple Inventory

optional arguments:
  -h, --help   show this help message and exit
  --list       List all hosts
  --host HOST  List details of a host
~/src/mastery> _
```

```
~/src/mastery> ./mastery-inventory.py --list
{"web": {"hosts": ["mastery.example.name"], "vars": {"ansible_ssh_user": "otto",
 "http_port": 80, "proxy_timeout": 5}}, "errors": {"hosts": ["scsihost"], "vars"
: {"ansible_ssh_user": "otto"}}, "frontend": {"children": ["web"], "vars": {"ans
ible_ssh_user": "otto"}}, "_meta": {"hostvars": {"web": {"ansible_ssh_host": "19
2.168.10.25"}, "scsihost": {"ansible_ssh_user": "jkeating"}}, "vars": {"ansible_
ssh_user": "otto"}}, "database": {"hosts": ["backend.example.name"], "vars": {"a
nsible_ssh_user": "database"}}, "failtest": {"hosts": ["failer01", "failer02", "
failer03", "failer04", "failer05", "failer06", "failer07", "failer08", "failer09
", "failer10"], "vars": {"ansible_ssh_user": "otto"}}, "dns": {"hosts": ["backen
d.example.name"], "vars": {"ansible_ssh_user": "otto"}}, "backend": {"children":
 ["dns", "database"], "vars": {"ansible_ssh_user": "blotto"}}}
~/src/mastery>
```

```
~/src/mastery> ./mastery-inventory.py --host web
{"ansible_ssh_host": "192.168.10.25"}
~/src/mastery> ./mastery-inventory.py --host mastery.example.name
{}
~/src/mastery>
```

```
~/src/mastery> ansible-playbook -i mastery-inventory.py inventory_test.yaml --li
mit backend,frontend,errors

PLAY [test the inventory] ************************************************

TASK [hello world] ******************************************************
ok: [mastery.example.name] => {
    "msg": "Hello world, I am mastery.example.name. My username is otto"
}
ok: [scsihost] => {
    "msg": "Hello world, I am scsihost. My username is jkeating"
}
ok: [backend.example.name] => {
    "msg": "Hello world, I am backend.example.name. My username is database"
}


PLAY RECAP **************************************************************
backend.example.name       : ok=1    changed=0    unreachable=0    failed=0
mastery.example.name       : ok=1    changed=0    unreachable=0    failed=0
scsihost                   : ok=1    changed=0    unreachable=0    failed=0

~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> time ansible-playbook -i mastery-inventory.py inventory_test.yaml
--limit backend,frontend,errors

PLAY [test the inventory] **********************************************************

TASK [hello world] ****************************************************************
ok: [mastery.example.name] => {
    "msg": "Hello world, I am mastery.example.name. My username is otto"
}
ok: [scsihost] => {
    "msg": "Hello world, I am scsihost. My username is jkeating"
}
ok: [backend.example.name] => {
    "msg": "Hello world, I am backend.example.name. My username is database"
}

PLAY RECAP ************************************************************************
backend.example.name          : ok=1    changed=0    unreachable=0    failed=0
mastery.example.name          : ok=1    changed=0    unreachable=0    failed=0
scsihost                      : ok=1    changed=0    unreachable=0    failed=0


real    0.586
user    0.428
sys     0.246
~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/mastery (zsh)
~/src/mastery> ./mastery-inventory.py --host scsihost
Traceback (most recent call last):
  File "./mastery-inventory.py", line 43, in <module>
    raise StandardError("You've been a bad boy")
StandardError: You've been a bad boy
exit 1
~/src/mastery> _
```

```
2. jkeating@serenity-2: ~/src/ansible (zsh)

devel ~/src/ansible> pytest test/units/parsing
============================ test session starts ============================
platform darwin -- Python 2.7.10, pytest-3.0.6, py-1.4.32, pluggy-0.4.0
rootdir: /Users/jkeating/src/ansible, inifile:
plugins: mock-1.5.0
collected 155 items

test/units/parsing/test_dataloader.py .....
test/units/parsing/test_mod_args.py .........
test/units/parsing/test_splitter.py ...............................................
test/units/parsing/test_unquote.py ................
test/units/parsing/utils/test_addresses.py ..
test/units/parsing/utils/test_jsonify.py ....
test/units/parsing/vault/test_vault.py ...................................s.....
test/units/parsing/vault/test_vault_editor.py .....
test/units/parsing/yaml/test_dumper.py .
test/units/parsing/yaml/test_loader.py ................
test/units/parsing/yaml/test_objects.py ..............

==================== 154 passed, 1 skipped in 45.99 seconds ====================
P
devel ~/src/ansible> _
```

```
2. jkeating@serenity-2: ~/src/ansible (zsh)

devel ~/src/ansible> test/runner/ansible-test integration -v ping
Running ping integration test role
Run command: ansible-playbook ping-6y55vk.yml -i inventory -e @integration_confi
g.yml -v
Using /dev/null as config file

PLAY [testhost] ****************************************************************

TASK [Gathering Facts] *********************************************************
ok: [testhost]

TASK [ping : ping the test] ****************************************************
ok: [testhost] => {"changed": false, "ping": "pong"}

TASK [ping : assert the ping worked] *******************************************
ok: [testhost] => {
    "changed": false,
    "msg": "All assertions passed"
}

TASK [ping : ping with data] ***************************************************
ok: [testhost] => {"changed": false, "ping": "testing"}

TASK [ping : assert the ping worked with data] *********************************
ok: [testhost] => {
    "changed": false,
    "msg": "All assertions passed"
}

PLAY RECAP *********************************************************************
testhost                   : ok=5    changed=0    unreachable=0    failed=0

devel ~/src/ansible> _
```

```
2. jkeating@serenity-2: ~/src/ansible (zsh)
devel ~/src/ansible> make pep8
test/runner/ansible-test sanity --test pep8 --python 2.7
Sanity check using pep8
devel ~/src/ansible> echo $?
0
devel ~/src/ansible> _
```



```
2. jkeating@serenity-2: ~/src/ansible (zsh)
!devel ~/src/ansible> make pep8
test/runner/ansible-test sanity --test pep8 --python 2.7
Sanity check using pep8
ERROR: PEP 8: lib/ansible/modules/cloud/openstack/os_zone.py:185:1: W293 blank l
ine contains whitespace (current)
ERROR: PEP 8: lib/ansible/modules/cloud/openstack/os_zone.py:187:1: E101 indenta
tion contains mixed spaces and tabs (current)
ERROR: PEP 8: lib/ansible/modules/cloud/openstack/os_zone.py:187:1: W191 indenta
tion contains tabs (current)
ERROR: PEP 8: lib/ansible/modules/cloud/openstack/os_zone.py:188:9: E901 Indenta
tionError: unindent does not match any outer indentation level (current)
ERROR: PEP 8: There are 4 issues which need to be resolved.
make: *** [pep8] Error 1
exit 2
!devel ~/src/ansible> _
```

Chapter 9: Infrastructure Provisioning

```
~/src/mastery> ansible-playbook -i mastery-hosts boot-server.yaml -vv
Using /Users/jkeating/src/mastery/ansible.cfg as config file

PLAYBOOK: boot-server.yaml **********************************************
1 plays in boot-server.yaml

PLAY [boot server] *****************************************************

TASK [boot the server] ************************************************
task path: /Users/jkeating/src/mastery/boot-server.yaml:7
changed: [localhost] => {"changed": true, "id": "d88095dd-5223-45d2-af15-968dc43
7f677", "openstack": {"OS-DCF:diskConfig": "MANUAL", "OS-EXT-AZ:availability_zon
e": "nova", "OS-EXT-STS:power_state": 1, "OS-EXT-STS:task_state": null, "OS-EXT-
STS:vm_state": "active", "OS-SRV-USG:launched_at": "2017-03-02T06:19:52.000000",
 "OS-SRV-USG:terminated_at": null, "accessIPv4": "169.45.80.10", "accessIPv6": "
", "addresses": {"internal": [{"OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:86:be:ae", "
OS-EXT-IPS:type": "fixed", "addr": "10.168.4.54", "version": 4}, {"OS-EXT-IPS-MA
C:mac_addr": "fa:16:3e:86:be:ae", "OS-EXT-IPS:type": "floating", "addr": "169.45
.80.10", "version": 4}]}, "adminPass": "zahV4C9BDj4s", "az": "nova", "cloud": ""
, "config_drive": "", "created": "2017-03-02T06:19:47Z", "disk_config": "MANUAL"
, "flavor": {"id": "1", "name": "m1.tiny"}, "has_config_drive": false, "hostId":
 "8d434a2b07568a6e7d044f7be85626eaf8f7f24c8fba141c640c0033", "host_id": "8d434a2
b07568a6e7d044f7be85626eaf8f7f24c8fba141c640c0033", "id": "d88095dd-5223-45d2-af
15-968dc437f677", "image": {"id": "01f59def-06f4-4979-b0ee-97cea844d18d", "name"
: "Fedora 25"}, "interface_ip": "169.45.80.10", "key_name": "VALUE_SPECIFIED_IN_
NO_LOG_PARAMETER", "launched_at": "2017-03-02T06:19:52.000000", "location": {"cl
oud": "", "project": {"domain_id": null, "domain_name": null, "id": "44b67672c37
34cac8865538eda20b357", "name": "VALUE_SPECIFIED_IN_NO_LOG_PARAMETER"}, "region_
```

"region_name": "", "zone": null}, "port_range_max": null, "port_range_min": null
, "project_id": "", "properties": {"group": {"name": "default", "tenant_id": "44
b67672c3734cac8865538eda20b357"}}, "protocol": null, "remote_group_id": null, "r
emote_ip_prefix": null, "security_group_id": "de0a75ad-585f-498c-8ab5-5072e385af
ff", "tenant_id": ""}, {"direction": "ingress", "ethertype": "IPv4", "group": {"
name": "default", "tenant_id": "44b67672c3734cac8865538eda20b357"}, "id": "f59b3
a5c-27fe-460c-a8af-a9236143332b", "location": {"cloud": "", "project": {"domain_
id": null, "domain_name": null, "id": "44b67672c3734cac8865538eda20b357", "name"
: "VALUE_SPECIFIED_IN_NO_LOG_PARAMETER"}, "region_name": "", "zone": null}, "por
t_range_max": null, "port_range_min": null, "project_id": "", "properties": {"gr
oup": {"name": "default", "tenant_id": "44b67672c3734cac8865538eda20b357"}}, "pr
otocol": null, "remote_group_id": null, "remote_ip_prefix": null, "security_grou
p_id": "de0a75ad-585f-498c-8ab5-5072e385afff", "tenant_id": ""}], "tenant_id": "
44b67672c3734cac8865538eda20b357"}], "status": "ACTIVE", "task_state": null, "te
nant_id": "44b67672c3734cac8865538eda20b357", "terminated_at": null, "updated":
"2017-03-02T06:19:53Z", "user_id": "db35760f08a14b1391d479800769bdfa", "vm_state
": "active", "volumes": []}}}

TASK [show floating ip] **
task path: /Users/jkeating/src/mastery/boot-server.yaml:21
ok: [localhost] => {
    "newserver.openstack.accessIPv4": "169.45.80.10"
}

PLAY RECAP **
localhost   : ok=2   changed=0   unreachable=0   failed=0

~/src/mastery> _

```
 "volumes": []}}

TASK [show floating ip] ***********************************************
task path: /Users/jkeating/src/mastery/boot-server.yaml:21
ok: [localhost] => {
    "newserver.openstack.accessIPv4": "169.45.80.10"
}

TASK [add new server] *************************************************
task path: /Users/jkeating/src/mastery/boot-server.yaml:25
creating host via 'add_host': hostname=mastery1
changed: [localhost] => {"add_host": {"groups": [], "host_name": "mastery1", "ho
st_vars": {"ansible_ssh_host": "169.45.80.10", "ansible_ssh_user": "fedora"}}, "
changed": true}

PLAY [configure server] ***********************************************

TASK [install python] *************************************************
task path: /Users/jkeating/src/mastery/boot-server.yaml:36
changed: [mastery1] => {"changed": true, "rc": 0, "stderr": "", "stdout": "Last
metadata expiration check: 0:43:12 ago on Sun Mar  5 22:10:56 2017.\r\nDependenc
ies resolved.\r\n=================================================================
==================\r\n Package                          Arch          Version
   Repository    Size\r\n===================================================
========================\r\nInstalling:\r\n pyliblzma                      x86_64        0.
5.3-16.fc25               fedora      54 k\r\n python                     x86_64
 2.7.13-1.fc25             updates      96 k\r\n python-libs              x86_64
     2.7.13-1.fc25           updates    5.8 M\r\n python-pip                 noar
```

```
alled: libdrm-2.4.75-1.fc25.x86_64", "Installed: libtiff-4.0.7-2.fc25.x86_64", "
Installed: libtool-ltdl-2.4.6-13.fc25.x86_64", "Installed: pango-1.40.4-1.fc25.x
86_64", "Installed: libICE-1.0.9-8.fc25.x86_64", "Installed: avahi-libs-0.6.32-4
.fc25.x86_64", "Installed: lcms2-2.8-2.fc25.x86_64", "Installed: xorg-x11-font-u
tils-1:7.5-32.fc25.x86_64", "Installed: gdk-pixbuf2-2.36.5-1.fc25.x86_64", "Inst
alled: libX11-1.6.4-4.fc25.x86_64", "Installed: libX11-common-1.6.4-4.fc25.noarc
h", "Installed: libXdamage-1.1.4-8.fc24.x86_64", "Installed: libXext-1.3.3-4.fc2
4.x86_64", "Installed: libXfixes-5.0.3-1.fc25.x86_64", "Installed: libXfont-1.5.
2-1.fc25.x86_64", "Installed: libxshmfence-1.2-3.fc24.x86_64", "Installed: cairo
-1.14.8-1.fc25.x86_64", "Installed: libXt-1.1.5-3.fc24.x86_64", "Installed: jbig
kit-libs-2.1-5.fc24.x86_64", "Installed: libglvnd-1:0.2.999-10.gitdc16f8c.fc25.x
86_64", "Installed: aajohan-comfortaa-fonts-2.004-6.fc24.noarch", "Installed: op
enjpeg2-2.1.2-3.fc25.x86_64", "Installed: libglvnd-egl-1:0.2.999-10.gitdc16f8c.f
c25.x86_64", "Installed: libfontenc-1.1.3-3.fc24.x86_64", "Installed: libglvnd-g
lx-1:0.2.999-10.gitdc16f8c.fc25.x86_64", "Installed: libXft-2.3.2-4.fc24.x86_64"
, "Installed: hwdata-0.297-1.fc25.noarch", "Installed: librsvg2-2.40.16-2.fc25.x
86_64", "Installed: harfbuzz-1.3.2-1.fc25.x86_64", "Installed: graphite2-1.3.6-1
.fc25.x86_64"]}


PLAY RECAP *********************************************************************
localhost                  : ok=3    changed=1    unreachable=0    failed=0
mastery1                   : ok=2    changed=2    unreachable=0    failed=0

~/src/mastery> _
```

```
~/src/mastery> ./openstack.py --help
usage: openstack.py [-h] [--private] [--refresh] [--debug]
                    (--list | --host HOST)

OpenStack Inventory Module

optional arguments:
  -h, --help   show this help message and exit
  --private    Use private address for ansible host
  --refresh    Refresh cached information
  --debug      Enable debug output
  --list       List active servers
  --host HOST  List details about the specific host
~/src/mastery> _
```

```
~/src/mastery> ./openstack.py --list
{
  "RegionOne": [
    "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
  ],
  "RegionOne_compute_standard": [
    "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
  ],
  "_meta": {
    "hostvars": {
      "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49": {
        "ansible_ssh_host": "169.44.171.87",
        "openstack": {
          "OS-DCF:diskConfig": "MANUAL",
          "OS-EXT-AZ:availability_zone": "compute_standard",
          "OS-EXT-STS:power_state": 1,
          "OS-EXT-STS:task_state": null,
          "OS-EXT-STS:vm_state": "active",
          "OS-SRV-USG:launched_at": "2017-03-10T05:18:45.000000",
          "OS-SRV-USG:terminated_at": null,
          "accessIPv4": "169.44.171.87",
          "accessIPv6": "",
          "addresses": {
            "internal": [
              {
                "OS-EXT-IPS-MAC:mac_addr": "fa:16:3e:8f:13:81",
                "OS-EXT-IPS:type": "fixed",
                "addr": "192.168.0.227",
                "version": 4
              },
              {
```

```
      "volumes": []
    }
   }
  }
 },
 "compute_standard": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ],
 "flavor-m1.tiny": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ],
 "image-Fedora 25": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ],
 "instance-bd47daf7-6ab9-4c97-a3e4-cc97418fbe49": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ],
 "mastery1": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ],
 "open": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ],
 "open_RegionOne": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ],
 "open_RegionOne_compute_standard": [
   "bd47daf7-6ab9-4c97-a3e4-cc97418fbe49"
 ]
}
```

~/src/mastery> _

```
~/src/mastery> ansible-playbook -i openstack.py configure-server.yaml -vv
Using /Users/jkeating/src/mastery/ansible.cfg as config file

PLAYBOOK: configure-server.yaml ****************************************************
1 plays in configure-server.yaml

PLAY [configure server] ***********************************************************

TASK [install python] *************************************************************
task path: /Users/jkeating/src/mastery/configure-server.yaml:8
changed: [bd47daf7-6ab9-4c97-a3e4-cc97418fbe49] => {"changed": true, "rc": 0, "s
tderr": "Shared connection to 169.44.171.87 closed.\r\n", "stdout": "Last metada
ta expiration check: 0:18:55 ago on Fri Mar 10 05:29:50 2017.\r\nPackage python-
2.7.13-1.fc25.x86_64 is already installed, skipping.\r\nPackage python2-dnf-1.1.
10-5.fc25.noarch is already installed, skipping.\r\nDependencies resolved.\r\nNo
thing to do.\r\nComplete!\r\n", "stdout_lines": ["Last metadata expiration check
: 0:18:55 ago on Fri Mar 10 05:29:50 2017.", "Package python-2.7.13-1.fc25.x86_6
4 is already installed, skipping.", "Package python2-dnf-1.1.10-5.fc25.noarch is
 already installed, skipping.", "Dependencies resolved.", "Nothing to do.", "Com
plete!"]}

TASK [install imagemagick] ********************************************************
task path: /Users/jkeating/src/mastery/configure-server.yaml:11
ok: [bd47daf7-6ab9-4c97-a3e4-cc97418fbe49] => {"changed": false, "msg": "Nothing
 to do"}

PLAY RECAP ************************************************************************
bd47daf7-6ab9-4c97-a3e4-cc97418fbe49 : ok=2    changed=1    unreachable=0    fai
led=0

~/src/mastery> _
```

```
[fedora@mastery1 mastery]$ docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS              PORTS               NAMES
[fedora@mastery1 mastery]$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
[fedora@mastery1 mastery]$ _
```

```
2. fedora@mastery1:~/src/mastery (ssh)

[fedora@mastery1 mastery]$ ansible-playbook -i derp, docker-interact.yaml

PLAY [build an image] ******************************************************

TASK [build that image] ****************************************************
changed: [localhost]

TASK [start the container] *************************************************
changed: [localhost]

PLAY RECAP *****************************************************************
localhost                  : ok=2    changed=2    unreachable=0    failed=0

[fedora@mastery1 mastery]$
```

```
2. fedora@mastery1:~/src/mastery (ssh)

[fedora@mastery1 mastery]$ docker ps
CONTAINER ID        IMAGE              COMMAND                 CREATED
    STATUS              PORTS                   NAMES
c728ef9abe36        fedora-moo         "/bin/sh -c /usr/sbin"  13 minutes ago
    Up 13 minutes       0.0.0.0:8080->80/tcp    playbook-container
[fedora@mastery1 mastery]$ docker images
REPOSITORY          TAG                IMAGE ID            CREATED
SIZE
fedora-moo          latest             b82819052899        13 minutes ago
461.6 MB
docker.io/fedora    25                 1f8ec1108a3f        3 weeks ago
230.3 MB
[fedora@mastery1 mastery]$
```

```
[fedora@mastery1 mastery]$ curl http://localhost:8080

 _____
< boop >
 -------
        \   ^__^
         \  (oo)_____
            (__)\       )\/\
                ||----w |
                ||     ||
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ docker ps
CONTAINER ID       IMAGE            COMMAND                CREATED
     STATUS             PORTS                   NAMES
c22bfa36c33b       fedora-moo       "/bin/sh -c /usr/sbin"  9 seconds ago
     Up 8 seconds       0.0.0.0:8080->80/tcp    playbook-container
[fedora@mastery1 mastery]$ docker stop playbook-container
playbook-container
[fedora@mastery1 mastery]$ docker rm playbook-container
playbook-container
[fedora@mastery1 mastery]$ docker ps
CONTAINER ID       IMAGE            COMMAND                CREATED
STATUS             PORTS            NAMES
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ ansible-playbook -i derp, docker-all.yaml

PLAY [build an image] ******************************************************

TASK [start the container] ************************************************
changed: [localhost]

TASK [make a host] ********************************************************
changed: [localhost]

PLAY [do things] **********************************************************

TASK [install things] *****************************************************
changed: [playbook-container]

TASK [install things] *****************************************************
changed: [playbook-container] => (item=[u'nginx', u'cowsay'])

TASK [configure nginx] ****************************************************
changed: [playbook-container]

TASK [boop] ***************************************************************
changed: [playbook-container]

TASK [run nginx] **********************************************************
changed: [playbook-container]

PLAY RECAP ****************************************************************
localhost                  : ok=2    changed=2    unreachable=0    failed=0
playbook-container         : ok=5    changed=5    unreachable=0    failed=0

[fedora@mastery1 mastery]$ _
```

```
● ● ●                    2. fedora@mastery1:~/src/mastery (ssh)
PLAY RECAP *********************************************************************
localhost                       : ok=2    changed=2    unreachable=0    failed=0
playbook-container              : ok=5    changed=5    unreachable=0    failed=0

[fedora@mastery1 mastery]$ curl http://localhost:8080
 _____
< boop >
 ------
        \   ^__^
         \  (oo)_____
            (__)\       )\/\
                ||----w |
                ||     ||
[fedora@mastery1 mastery]$ docker ps
CONTAINER ID        IMAGE                 COMMAND             CREATED
  STATUS              PORTS                 NAMES
e9fb97915fdc        docker.io/fedora:25   "sleep 500"         2 minutes ago
  Up 2 minutes        0.0.0.0:8080->80/tcp   playbook-container
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ ./docker.py --help
usage: docker.py [-h] [--list] [--debug] [--host HOST] [--pretty]
                 [--config-file CONFIG_FILE] [--docker-host DOCKER_HOST]
                 [--tls-hostname TLS_HOSTNAME] [--api-version API_VERSION]
                 [--timeout TIMEOUT] [--cacert-path CACERT_PATH]
                 [--cert-path CERT_PATH] [--key-path KEY_PATH]
                 [--ssl-version SSL_VERSION] [--tls] [--tls-verify]
                 [--private-ssh-port PRIVATE_SSH_PORT]
                 [--default-ip-address DEFAULT_IP_ADDRESS]

Return Ansible inventory for one or more Docker hosts.

optional arguments:
  -h, --help            show this help message and exit
  --list                List all containers (default: True)
  --debug               Send debug messages to STDOUT
  --host HOST           Only get information for a specific container.
  --pretty             Pretty print JSON output(default: False)
  --config-file CONFIG_FILE
                        Name of the config file to use. Default is docker.yml
  --docker-host DOCKER_HOST
                        The base url or Unix sock path to connect to the
                        docker daemon. Defaults to unix://var/run/docker.sock
  --tls-hostname TLS_HOSTNAME
                        Host name to expect in TLS certs. Defaults to
                        'localhost'
  --api-version API_VERSION
                        Docker daemon API version. Defaults to 1.24
  --timeout TIMEOUT     Docker connection timeout in seconds. Defaults to 60
  --cacert-path CACERT_PATH
                        Path to the TLS certificate authority pem file.
  --cert-path CERT_PATH
                        Path to the TLS certificate pem file.
  --key-path KEY_PATH   Path to the TLS encryption key pem file.
  --ssl-version SSL_VERSION
                        TLS version number
  --tls                Use TLS. Defaults to False
  --tls-verify         Verify TLS certificates. Defaults to False
  --private-ssh-port PRIVATE_SSH_PORT
                        Default private container SSH Port. Defaults to 22
  --default-ip-address DEFAULT_IP_ADDRESS
                        Default container SSH IP address. Defaults to
                        127.0.0.1
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ ./docker.py --list --pretty
{
    "7f22ffd044768": [
        "playbook-container"
    ],
    "7f22ffd044768b2f293ca724af86600cb7d7361b8956fe2f88f8f1538fc2e73d": [
        "playbook-container"
    ],
    "_meta": {
        "hostvars": {
            "playbook-container": {
                "ansible_ssh_host": "",
                "ansible_ssh_port": 0,
                "docker_apparmorprofile": "",
                "docker_args": [
                    "500"
                ],
                "docker_config": {
                    "AttachStderr": false,
                    "AttachStdin": false,
                    "AttachStdout": false,
                    "Cmd": [
                        "sleep",
```

```
                "StartedAt": "2017-03-15T05:20:18.136065374Z",
                "Status": "running"
            }
        }
    }
},
    "docker_hosts": [
        "unix://var/run/docker.sock"
    ],
    "image_docker.io/fedora:25": [
        "playbook-container"
    ],
    "playbook-container": [
        "playbook-container"
    ],
    "running": [
        "playbook-container"
    ],
    "unix://var/run/docker.sock": [
        "playbook-container"
    ]
}
```
[fedora@mastery1 mastery]$ _

```
●●●                    2. fedora@mastery1:~/src/mastery (ssh)
[fedora@mastery1 mastery]$ ansible-container --help
usage: ansible-container [-h] [--debug] [--engine ENGINE_NAME]
                         [--project BASE_PATH] [--var-file VAR_FILE]
                         {init,version,run,help,install,push,shipit,stop,restart
,build}

                         ...


Build, orchestrate, run, and ship Docker containers with Ansible playbooks

optional arguments:
  -h, --help             show this help message and exit
  --debug                Enable debug output
  --engine ENGINE_NAME   Select your container engine and orchestrator
  --project BASE_PATH, -p BASE_PATH
                         Specify a path to your project. Defaults to current
                         working directory.
  --var-file VAR_FILE    Path to a YAML or JSON formatted file providing
                         variables for Jinja2 templating in container.yml.

subcommand:
  {init,version,run,help,install,push,shipit,stop,restart,build}
    init                 Initialize a new Ansible Container project
    version              Display Ansible Container version information
    run                  Run and orchestrate built images based on
                         container.yml
    help                 Display this help message
    install              Install a service from Ansible Galaxy
    push                 Push your built images to a Docker Hub compatible
                         registry
    shipit               Generate a deployment playbook to your cloud of
                         choice.
    stop                 Stop the services defined in container.yml, if
                         deployed
    restart              Restart the services defined in container.yml
    build                Build new images based on ansible/container.yml
[fedora@mastery1 mastery]$ _
```

```
● ● ●                    2. fedora@mastery1:~/src/mastery (ssh)
[fedora@mastery1 mastery]$ ansible-container init --help
usage: ansible-container init [-h] [--server SERVER] [project]

positional arguments:
  project                 Use a project template instead of making a blank
                          project from an Ansible Container project from Ansible
                          Galaxy.

optional arguments:
  -h, --help              show this help message and exit
  --server SERVER, -s SERVER
                          Use a different Galaxy server URL
[fedora@mastery1 mastery]$ _
```

```
● ● ●                    2. fedora@mastery1:~/src/mastery (ssh)
[fedora@mastery1 mastery]$ ansible-container init
Ansible Container initialized.
[fedora@mastery1 mastery]$ tree ansible/
ansible/
├── ansible.cfg
├── container.yml
├── main.yml
├── meta.yml
├── requirements.txt
└── requirements.yml

0 directories, 6 files
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ ansible-container build
No DOCKER_HOST environment variable found. Assuming UNIX socket at /var/run/dock
er.sock
Starting Docker Compose engine to build your images...
Trying to pull repository docker.io/ansible/ansible-container-builder ...
sha256:ecbf2feee8cfa0b4167ca1bb74bfff62f61c3e7009b048f239da13db3806bc6b: Pulling
  from docker.io/ansible/ansible-container-builder
8d30e94188e7: Pulling fs layer
24cbd75f8b32: Pulling fs layer
d6ee161b4be5: Downloading [=>                                                   ]
d6ee161b4be5: Downloading [==>                                                  ]
d6ee161b4be5: Downloading [===>                                                 ]
d6ee161b4be5: Downloading [====>                                                ]
d6ee161b4be5: Downloading [=====>                                               ]
d6ee161b4be5: Downloading [=======>                                             ]
d6ee161b4be5: Downloading [========>                                            ]
8d30e94188e7: Pull complete
24cbd75f8b32: Pull complete
d6ee161b4be5: Pull complete
a4b49951d8df: Pull complete
853ec44630ce: Pull complete
b7e98f774514: Pull complete
d787669f451c: Pull complete
250fdf0b77c5: Pull complete
33400106458e: Pull complete
Digest: sha256:ecbf2feee8cfa0b4167ca1bb74bfff62f61c3e7009b048f239da13db3806bc6b
Status: Downloaded newer image for docker.io/ansible/ansible-container-builder:0
.2
Attaching to ansible_ansible-container_1
Cleaning up Ansible Container builder...
No image found for tag mastery-cowsay:latest, so building from scratch
Attaching to ansible_ansible-container_1, ansible_cowsay_1
```

```
● ● ●                    2. fedora@mastery1:~/src/mastery (ssh)
Attaching to ansible_cowsay_1, ansible_ansible-container_1
ansible-container_1  | Host cowsay running
ansible-container_1  |
ansible-container_1  | PLAY [cowsay] ******************************************
************************
ansible-container_1  |
ansible-container_1  | TASK [install things] **********************************
************************
ansible-container_1  | ok: [cowsay]
ansible-container_1  |
ansible-container_1  | TASK [install things] **********************************
************************
ansible-container_1  | changed: [cowsay] => (item=[u'nginx', u'cowsay'])
ansible-container_1  |
ansible-container_1  | TASK [configure nginx] *********************************
************************
ansible-container_1  | changed: [cowsay]
ansible-container_1  |
ansible-container_1  | TASK [boop] ********************************************
************************
ansible-container_1  | changed: [cowsay]
ansible-container_1  |
ansible-container_1  | PLAY RECAP *********************************************
************************
ansible-container_1  | cowsay                     : ok=4    changed=3    unreach
able=0    failed=0
ansible-container_1  |
ansible_ansible-container_1 exited with code 0
Aborting on container exit...
Stopping ansible_cowsay_1 ... done
Exporting built containers as images...
Committing image...
Exported mastery-cowsay with image ID sha256:0b6121417e3bf12c9f6db341349d778e5d6
202d368751c161dc4d924cfbd1292
Cleaning up cowsay build container...
Cleaning up Ansible Container builder...
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ docker images
REPOSITORY                                       TAG               IMAGE ID
      CREATED              SIZE
mastery-cowsay                                   20170316055613    0b6121417e3b
      51 seconds ago       524.4 MB
mastery-cowsay                                   latest            0b6121417e3b
      51 seconds ago       524.4 MB
docker.io/fedora                                 25                1f8ec1108a3f
      3 weeks ago          230.3 MB
docker.io/ansible/ansible-container-builder      0.2               6a0481cdff24
      5 months ago         710.6 MB
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ ansible-container run --help
usage: ansible-container run [-h] [--production] [-d] [-o]
                             [--with-volumes WITH_VOLUMES [WITH_VOLUMES ...]]
                             [--with-variables WITH_VARIABLES [WITH_VARIABLES ..
.]]

                             [--roles-path ROLES_PATH]
                             [service [service ...]]

positional arguments:
  service               The specific services you want to run

optional arguments:
  -h, --help            show this help message and exit
  --production          Run the production configuration locally
  -d, --detached        Run the application in detached mode
  -o, --remove-orphans  Remove containers for services not defined in
                        container.yml
  --with-volumes WITH_VOLUMES [WITH_VOLUMES ...], -v WITH_VOLUMES [WITH_VOLUMES
...]
                        Mount one or more volumes to the Ansible Builder
                        Container. Specify volumes as strings using the Docker
                        volume format.
  --with-variables WITH_VARIABLES [WITH_VARIABLES ...], -e WITH_VARIABLES [WITH_
VARIABLES ...]
                        Define one or more environment variables in the
                        Ansible Builder Container. Format each variable as a
                        key=value string.
  --roles-path ROLES_PATH
                        Specify a local path containing roles you want to use
                        in the builder container.
[fedora@mastery1 mastery]$ _
```

```
[fedora@mastery1 mastery]$ ansible-container run --detached
No DOCKER_HOST environment variable found. Assuming UNIX socket at /var/run/dock
er.sock
Attaching to ansible_ansible-container_1
Cleaning up Ansible Container builder...
Deploying application in detached mode
[fedora@mastery1 mastery]$ _
```