Network management

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ipaddr filter

```
- debug:
    msg:
    - "Variable: {{ loopback3_ip }}"
    - "Address: {{ loopback3_ip | ipaddr('address')}}"
    - "Mask: {{ loopback3_ip | ipaddr('netmask')}}"
    - "Prefix: {{ loopback3_ip | ipaddr('prefix')}}"
    - "Network: {{ loopback3_ip | ipaddr('network')}}"
    - "Broadcast: {{ loopback3_ip | ipaddr('broadcast')}}"
```

Docs:
https://docs.ansible.com/ansible/2.9/user_g
uide/playbooks_filters_ipaddr.html

```
TASK [debug] ********************************
ok: [r1] => {
    "msg": [
        "Variable: 10.3.1.1/24",
        "Address: 10.3.1.1",
        "Mask: 255.255.255.0",
        "Prefix: 24",
        "Network: 10.3.1.0",
        "Broadcast: 10.3.1.255"
    ]
}
```

ios_config

- lines   # what should be in config
- src   # what should be in config

src: <filename>

Will look for files inside templates folder

Docs: https://docs.ansible.com/ansible/2.9/modules/ios_config_module.html

Jinja2 loops

Jinja2 online compiler: https://j2live.ttl255.com/

```
# vars
bgp_neighbors:
  -   10.0.2.15
  -   10.0.3.34
  -   10.2.0.45
  -   10.77.0.1
```

```
router bgp 65500
  neighbor 10.0.2.15 remote-as 65500
  neighbor 10.0.3.34 remote-as 65500
  neighbor 10.2.0.45 remote-as 65500
  neighbor 10.77.0.1 remote-as 65500
```

```
# template
router bgp 65500
 {% for n in bgp_neighbors %}
 neighbor {{ n }} remote-as 65500
 {% endfor %}
```

Jinja2 conditions

```
# vars_R1
bgp_neighbors:
    -    10.0.2.15
    -    10.0.3.34
    -    10.2.0.45
    -    10.77.0.1
```

```
# vars_R2
ospf_area: 0
```

```
# template
{% if bgp_neighbors %}
router bgp 65500
 {% for n in bgp_neighbors %}
 neighbor {{ n }} remote-as 65500
 {% endfor %}
{% endif %}
```
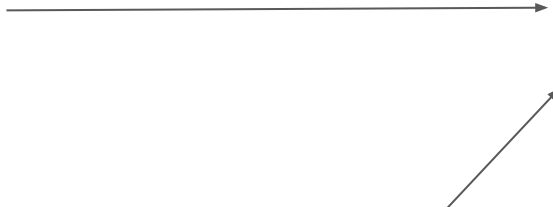
```
R1:
router bgp 65500
  neighbor 10.0.2.15 remote-as 65500
  neighbor 10.0.3.34 remote-as 65500
  neighbor 10.2.0.45 remote-as 65500
  neighbor 10.77.0.1 remote-as 65500
```

```
R2:
```

Jinja2 filters

```
# vars_R1
bgp_neighbors:
   -   ip: 10.0.2.15
       as: 65501
   -   ip: 10.0.3.34
       as: 65502
   -   ip: 10.2.0.45
   -   ip: 10.77.0.1
```

```
R1:
router bgp 65500
  neighbor 10.0.2.15 remote-as 65501
  neighbor 10.0.3.34 remote-as 65502
  neighbor 10.2.0.45 remote-as 65500
  neighbor 10.77.0.1 remote-as 65500
```

```
# template
{% if bgp_neighbors %}
router bgp 65500
 {% for n in bgp_neighbors %}
 neighbor {{ n.ip }} remote-as {{ n.as | default(65500) }}
 {% endfor %}
{% endif %}
```

Jinja2 example

```jinja2
{%- if aggregations %}
port-channel load-balance src-dst-ip
 {{ empty_line() }}
 {%- for portchannel in aggregations %}
interface Port-channel{{ portchannel.name | replace('Po','') }}
 switchport mode trunk
  {% if '*' in portchannel.vlans -%}
   {%- for vl in portchannel.vlans.split(',') -%}
    {%- if '*' in vl -%}
 switchport trunk native vlan {{ vl | replace('*','') }}
    {% endif %}
   {%- endfor -%}
  {% else -%}
 switchport trunk native vlan 999
  {% endif -%}
 switchport trunk allowed vlan {{ portchannel.vlans | replace('*', '') | replace(',', ' ') | trim | replace (' ', ',') }}
 switchport nonegotiate
 {%- endfor %}
{%- endif %}
```

Ansible vault

```
$ ansible-vault encrypt_string p4ssw0rd

!vault |
    $ANSIBLE_VAULT;1.1;AES256
    663130663865663462633553134373763333466303863656133343232623162303562643366383562
    623637336465353437616463306366393738633933376532 0a3165383863636637333839396326333
    663436613435643539343732393165383466666564363030356236353636163663139326135396 6
    3166613234313639640a6134313062 3564333337316464366666643735633030616306431366662
    6161

Encryption successful
```

Ansible vault in variables

```
#group_vars/all.yaml
my_user: admin
my_password: !vault |
    $ANSIBLE_VAULT;1.1;AES256
    6631306663865663462633531343737633334663038636561333432326231623035626433663
    6236373364653534376164633063663937386339333765320a31653838636366373338393962
    6634366134356435393437323931653834666665643630303562363536366163663139326135
    31666132343136396640a6134313062356433333731646436666664373563303061663064313
    6161

#playbook.yaml
- name: Print credentials (Unsafe! Use for demo only!)
  debug:
    msg: "User is {{ my_user}} and password is {{ my_password }}"
```