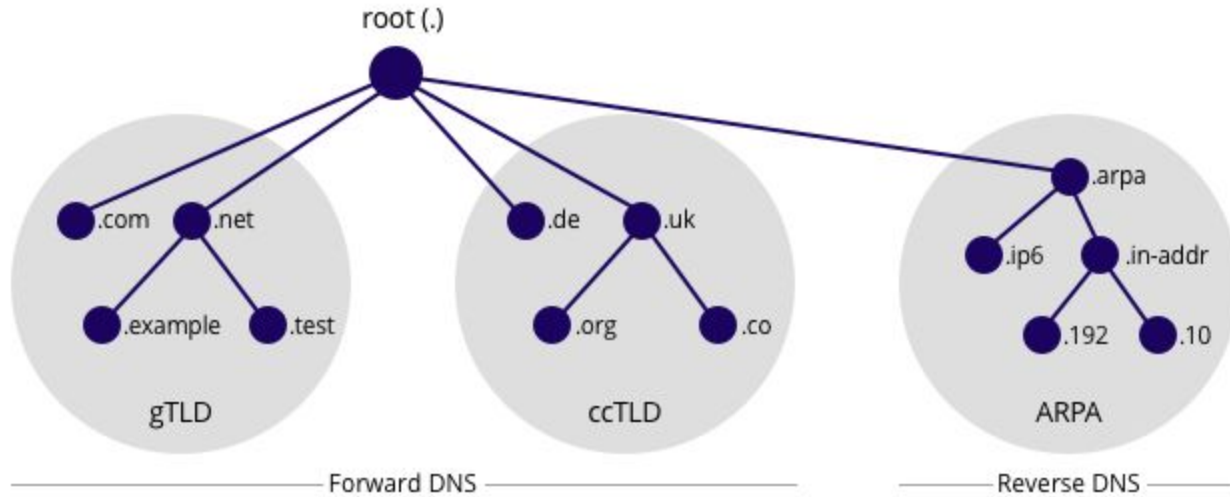# IT Infrastructure services

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DNS

DNS record types

- A
- AAAA
- CNAME
- NS
- SOA
- MX
- TXT
- Many more: https://en.wikipedia.org/wiki/List_of_DNS_record_types

DNS troubleshooting

- https://isitdns.com/
- nslookup <name>
- host <ip or name> [dns-server]
- dig [type] <name> [@dns-server]

Bind9

Docs: https://kb.isc.org/docs/aa-01031
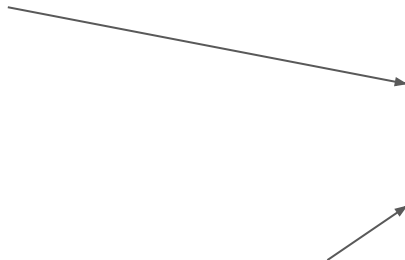
Jinja2 loops

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

```
{%- 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 facts

```
RomanKuc-MBP:01-demo romank$ ansible-playbook test_ansible.yaml

PLAY [Ansible connection test] ***********************************************************

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

TASK [test_connection : Ansible ping module] *********************************************
ok: [my_vm]

PLAY RECAP *******************************************************************************
my_vm                      : ok=2    changed=0    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0
```

```
---
 - name: Ansible connection test
   hosts: my_vm
   gather_facts: no    ← default is yes
   roles:
     - test_connection
```

Ansible variables not from /vars folder

```
---
 - name: Show some variables
   hosts: my_vm
   gather_facts: no
   tasks:
     - debug:
         var: groups
     - debug:
         var: hostvars
     - debug:
         msg: This VM IP is {{ hostvars['my_vm']['ansible_default_ipv4']['address']

 - name: Show some variables
   hosts: my_vm
   tasks:
     - debug:
         msg: This VM IP is {{ hostvars['my_vm']['ansible_default_ipv4']['address']
```

HA setups

Master

Original zone database
Serial Number

AXFR

notify

Slave

Copy of zone database
Same serial Number

Master

Original zone database
Serial Number

Master

Original zone database
Same serial Number

Service for file sync