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| **Salt**[](https://docs.vyos.io/en/latest/automation/vyos-salt.html#salt) |

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| VyOS supports op-mode and configuration via salt. |

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| Without proxy it requires VyOS minion configuration and supports op-mode data: |

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| set service salt-minion id 'r14'  set service salt-minion master '192.0.2.250' |

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| Check salt-keys on the salt master |

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| / # salt-key --list-all  Accepted Keys:  r11  Denied Keys:  Unaccepted Keys:  r14  Rejected Keys: |

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| Accept minion key |

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| / # salt-key --accept r14  The following keys are going to be accepted:  Unaccepted Keys:  r14  Proceed? [n/Y] y  Key for minion r14 accepted. |

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| Check that salt master can communicate with minions |

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| / # salt '\*' test.ping  r14:  True  r11:  True |

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| At this step we can get some op-mode information from VyOS nodes: |

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| / # salt '\*' network.interface eth0  r11:  |\_  ----------  address:  192.0.2.11  broadcast:  192.0.2.255  label:  eth0  netmask:  255.255.255.0  r14:  |\_  ----------  address:  192.0.2.14 |

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| broadcast:  192.0.2.255  label:  eth0  netmask:  255.255.255.0 |

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| / # salt r14 network.arp  r14:  ----------  aa:bb:cc:dd:f3:db:  192.0.2.1  aa:bb:cc:dd:2e:80:  203.0.113.1 |

**Netmiko-proxy**[](https://docs.vyos.io/en/latest/automation/vyos-salt.html#netmiko-proxy)

It is possible to configure VyOS via [netmiko](https://docs.saltproject.io/en/latest/ref/modules/all/salt.modules.netmiko_mod.html#module-salt.modules.netmiko_mod) proxy module. It requires a minion with installed

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| packet python3-netmiko module who has a connection to VyOS nodes. Salt-minion have to   |  | | --- | |  | |

communicate with salt master   
**Configuration**[](https://docs.vyos.io/en/latest/automation/vyos-salt.html#configuration)

Salt master configuration:

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| / # cat /etc/salt/master  file\_roots:  base:  - /srv/salt/states |

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| pillar\_roots:  base:  - /srv/salt/pillars |

Structure of /srv/salt:

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| / # tree /srv/salt/  /srv/salt/  |\_\_\_ pillars  | |\_\_ r11-proxy.sls  | |\_\_ top.sls  |\_\_\_ states  |\_\_ commands.txt |

top.sls

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| / # cat /srv/salt/pillars/top.sls  base:  r11-proxy:  - r11-proxy |

r11-proxy.sls Includes parameters for connecting to salt-proxy minion

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| / # cat /srv/salt/pillars/r11-proxy.sls  proxy:  proxytype: netmiko # how to connect to proxy minion, change it device\_type: vyos #  host: 192.0.2.250  username: user  password: secret\_passwd |

commands.txt

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| --- |
| / # cat /srv/salt/states/commands.txt  set interfaces ethernet eth0 description 'WAN'  set interfaces ethernet eth1 description 'LAN' |

Check that proxy minion is alive:

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| / # salt r11-proxy test.ping  r11-proxy:  True  / # |

**Examples**[](https://docs.vyos.io/en/latest/automation/vyos-salt.html#examples)

Example of op-mode:

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| / # salt r11-proxy netmiko.send\_command 'show interfaces ethernet eth0 brief' host=192.0.2.14 device\_type=vyos username=vyos password=vyos  r11-proxy:  Codes: S - State, L - Link, u - Up, D - Down, A - Admin Down  Interface IP Address S/L Description  --------- ---------- --- -----------  eth0 192.0.2.14/24 u/u Upstream  / # |

Example of configuration:

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| / # salt r11-proxy netmiko.send\_config config\_commands=['set interfaces ethernet eth0 description Link\_to\_WAN'] commit=True host=192.0.2.14 device\_type=vyos username=vyos password=vyos r11-proxy:  configure  set interfaces ethernet eth0 description Link\_to\_WAN  [edit]  vyos@r14# commit  [edit]  vyos@r14#  / # |

Example of configuration commands from the file “/srv/salt/states/commands.txt”

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| / # salt r11-proxy netmiko.send\_config config\_file=salt://commands.txt commit=True host=192.0.2.11 device\_type=vyos username=vyos password=vyos  r11-proxy:  configure  set interfaces ethernet eth0 description 'WAN'  [edit]  vyos@r1# set interfaces ethernet eth1 description 'LAN'  [edit]  vyos@r1# commit |

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| [edit]  vyos@r1#  / # |