



#ANSIBLEAUTOMATES

MADRID - 30 ENERO 2019



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ANSIBLE NETWORK AUTOMATION

Beatriz Martínez Santos
Solution Architect



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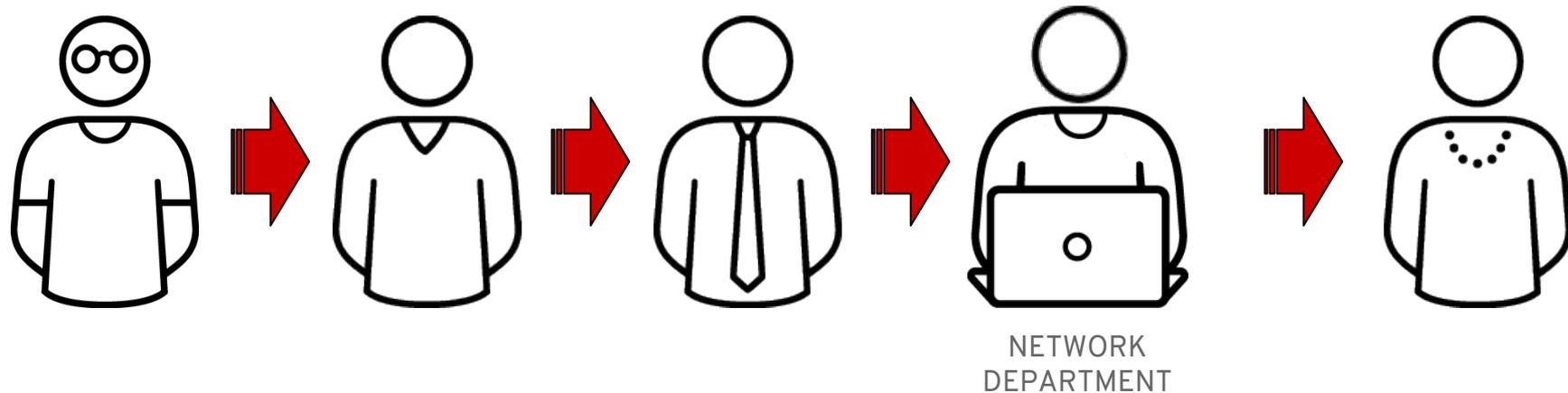
Traditional Network Operation

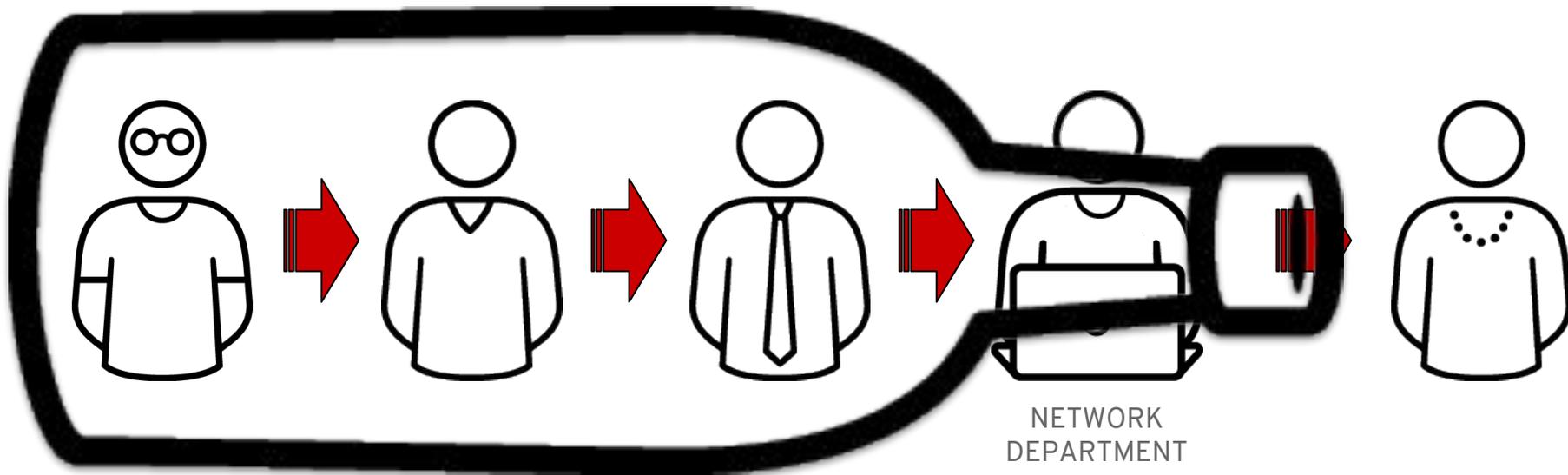
Daily workflow

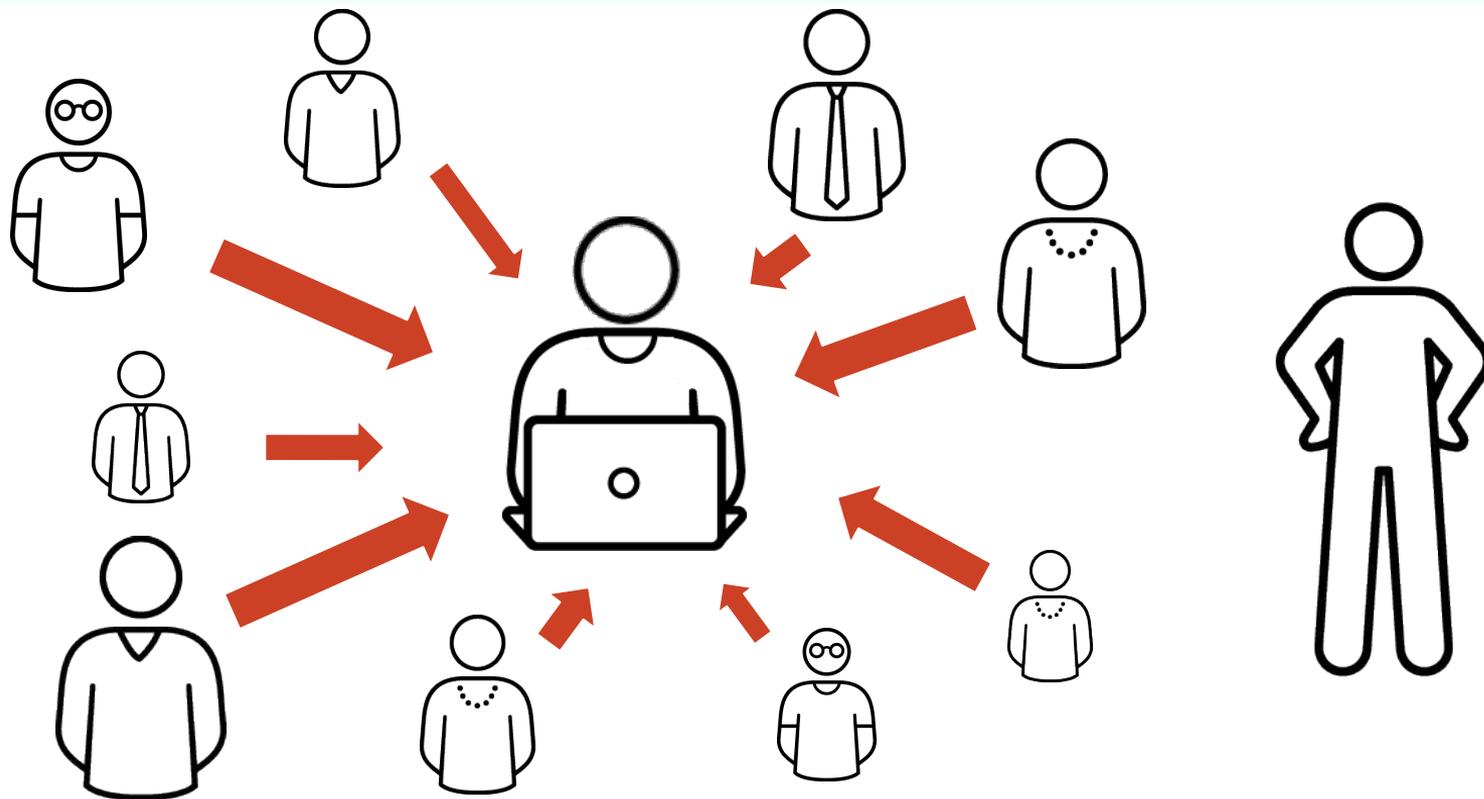


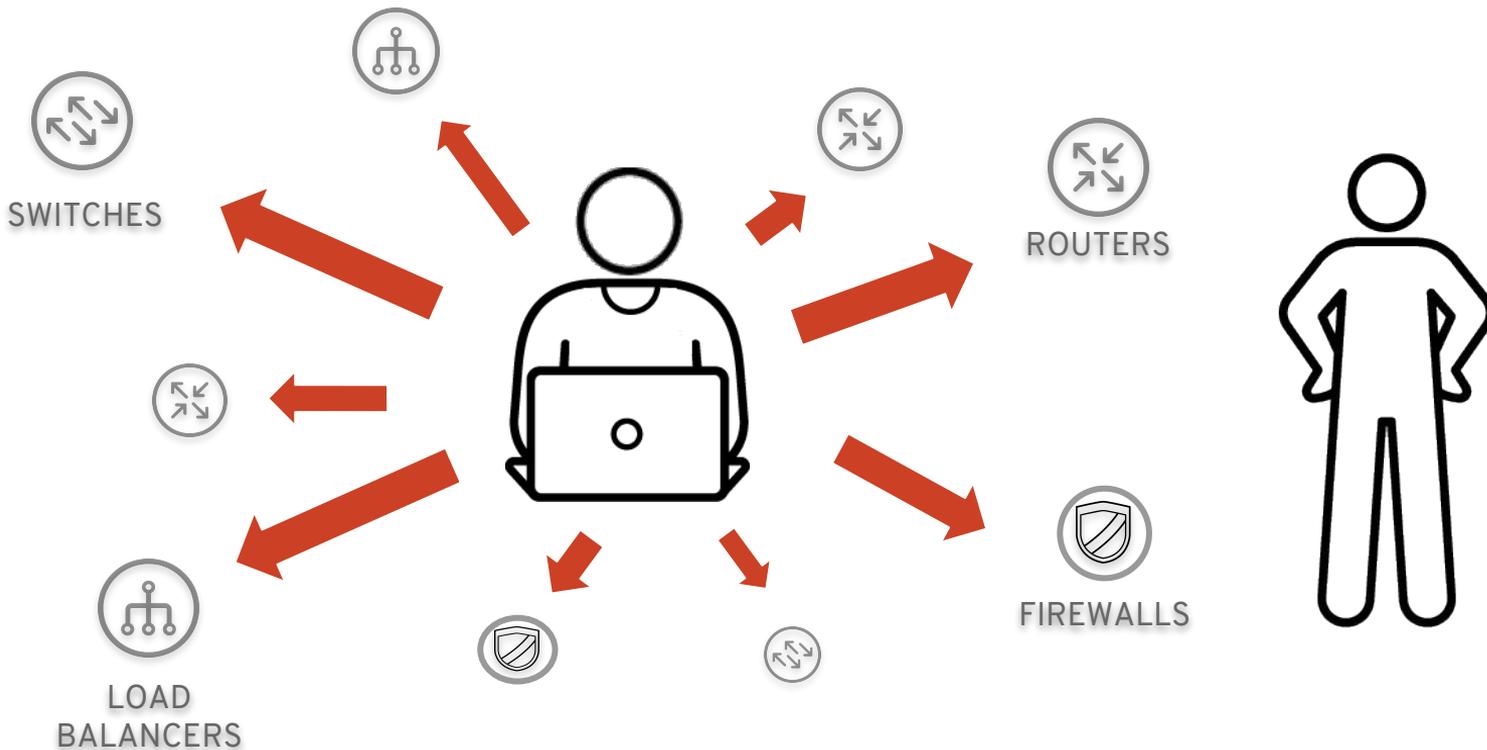
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Traditional Network Operation Vs. Next-Gen Network Operation

Traditional Network Ops

- Legacy culture
- Risk averse
- Proprietary solutions
- Siloed from others
- “Paper” practices, MOPs
- “Artisanal” networks

Next-Gen Network Ops

- Community culture
- Risk aware
- Open solutions
- Teams of heroes
- Infrastructure as code
- Virtual prototyping / DevOps

Other Challenges: Complexity, Lack of Agility, OpEX, Anything Manual

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Next-Gen Network Ops

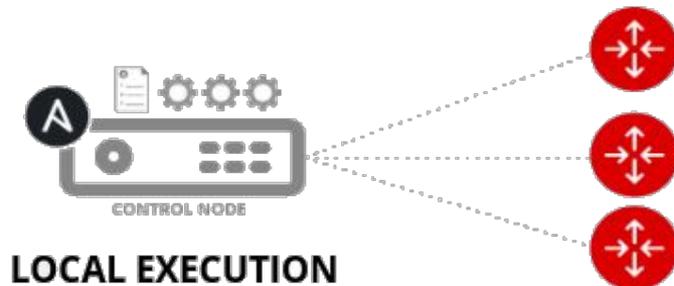
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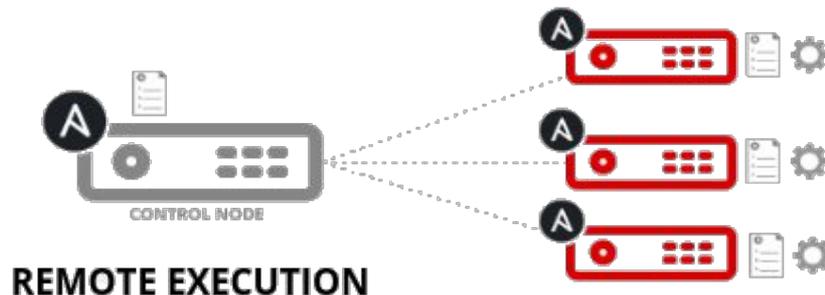
A10	Exoscale	MikroTik RouterOS
Apstra AOS	Extreme EX-OS, NOS, SLX-OS, VOSS	Openswitch (OPX)
Arista EOS, CVP	F5 BIG-IP, BIG-IQ	Ordnance
Aruba Networks	Fortinet FortiOS, FMGR	NETCONF
AVI Networks	Huawei CloudEngine	Netvisor
Big Switch Networks	Illumos	OpenSwitch
Brocade Ironware	Infoblox NIOS	Open vSwitch (OVS)
Cisco ACI, AireOS, ASA, Firepower, IOS, IOS-XR, Meraki, NSO, NX-OS	Juniper JunOS	Palo Alto PAN-OS
Citrix Netscaler	Lenovo CNOS, ENOS	Nokia NetAct, SR OS
Cumulus Linux	Mellanox ONYX	Ubiquiti EdgeOS
Dell OS6, OS9, OS10		VyOS

Module code is executed locally on the control node



NETWORKING DEVICES

Module code is copied to the managed node, executed, then removed



LINUX/WINDOWS HOSTS



```
- name: configure network interface
  net_interface:
    name: "{{ interface_name }}"
    description: "{{ interface_description }}"
    enabled: yes
    mtu: 9000
    state: up

- name: configure bgp neighbors
  net_bgp_neighbor:
    peers: "{{ item.peer }}"
    remote_as: "{{ item.remote_as }}"
    update_source: Loopback0
    send_community: both
    enabled: yes
    state: present
```



```
- ios_interface:
  ...
- ios_bgp_neighbor:
  ...
```

```
- eos_interface:
  ...
- eos_bgp_neighbor:
  ...
```

```
- junos_interface:
  ...
- junos_bgp_neighbor:
  ...
```

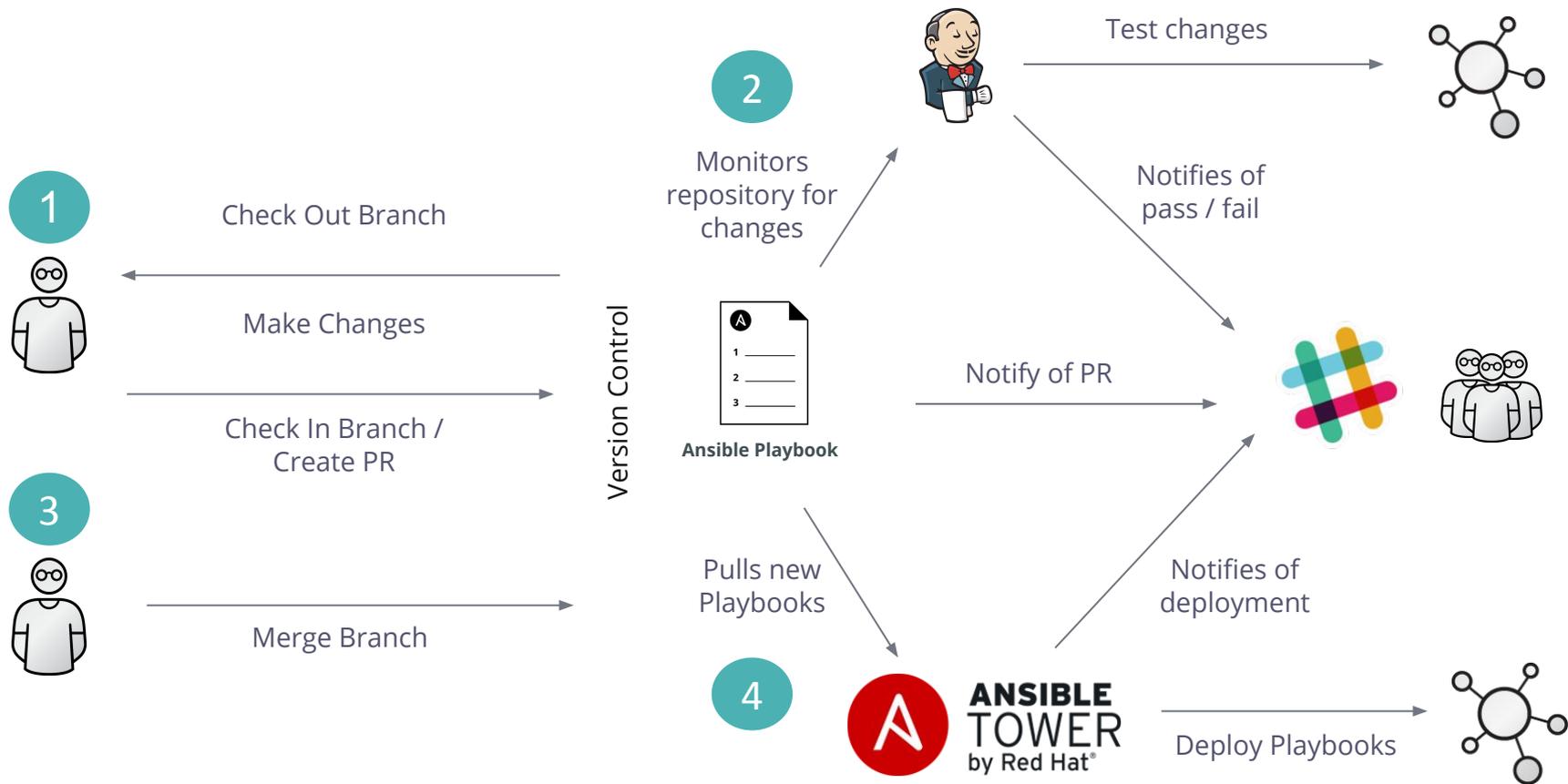
```
- nxos_interface:
  ...
- nxos_bgp_neighbor:
  ...
```

```
- iosxr_interface:
  ...
- iosxr_bgp_neighbor:
  ...
```

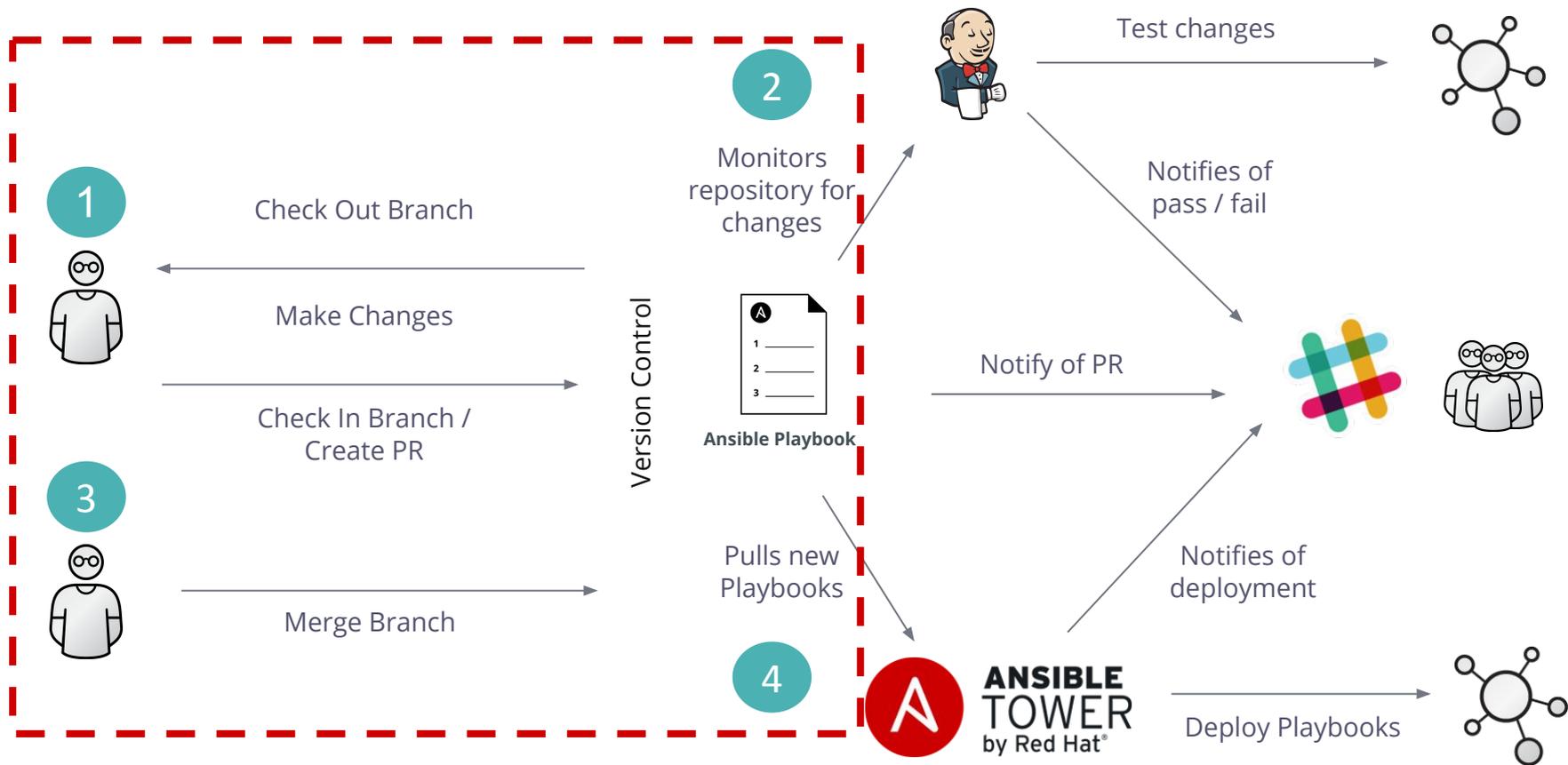


- **Information / Inventory Retrieval and Configuration**
 - Ad hoc or bulk
- **State Checking and Validation**
 - Compare running configs to desired configs
- **Invocation of Tasks/Playbooks**
 - Manually, API via Tower, Scheduled via Tower
- **Continuous Compliance and remediation**
 - Combining stateful validation with schedules
- **Integrations**
 - Ansible Tower APIs

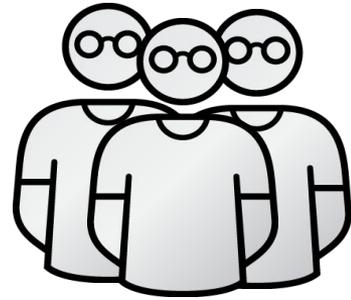
Network CI/CD



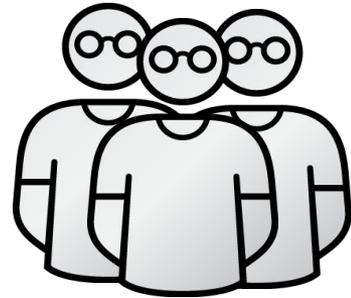
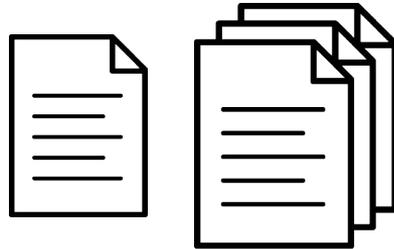
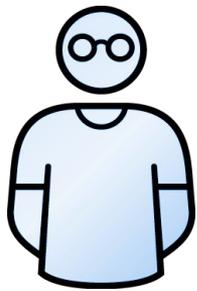
Network CI/CD



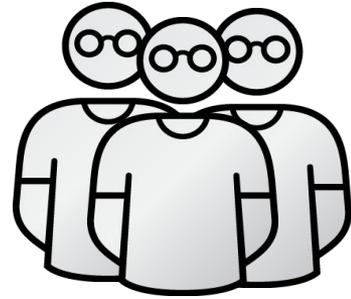
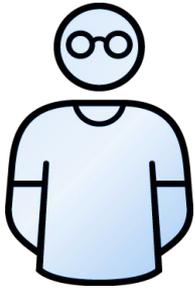
Usual Scenario - Working locally



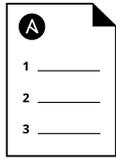
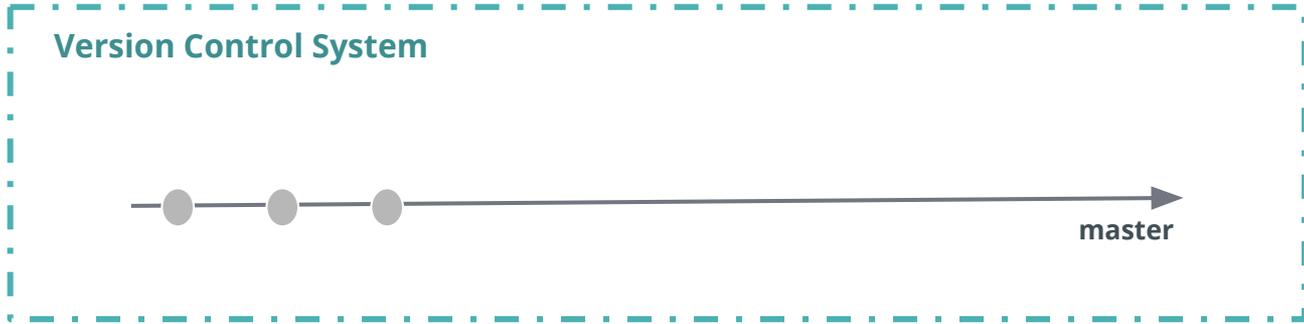
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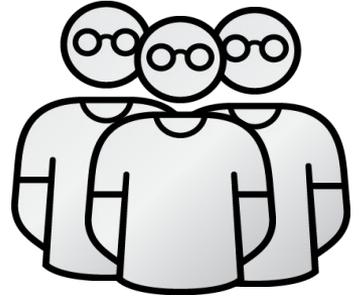
Using Version Control Systems



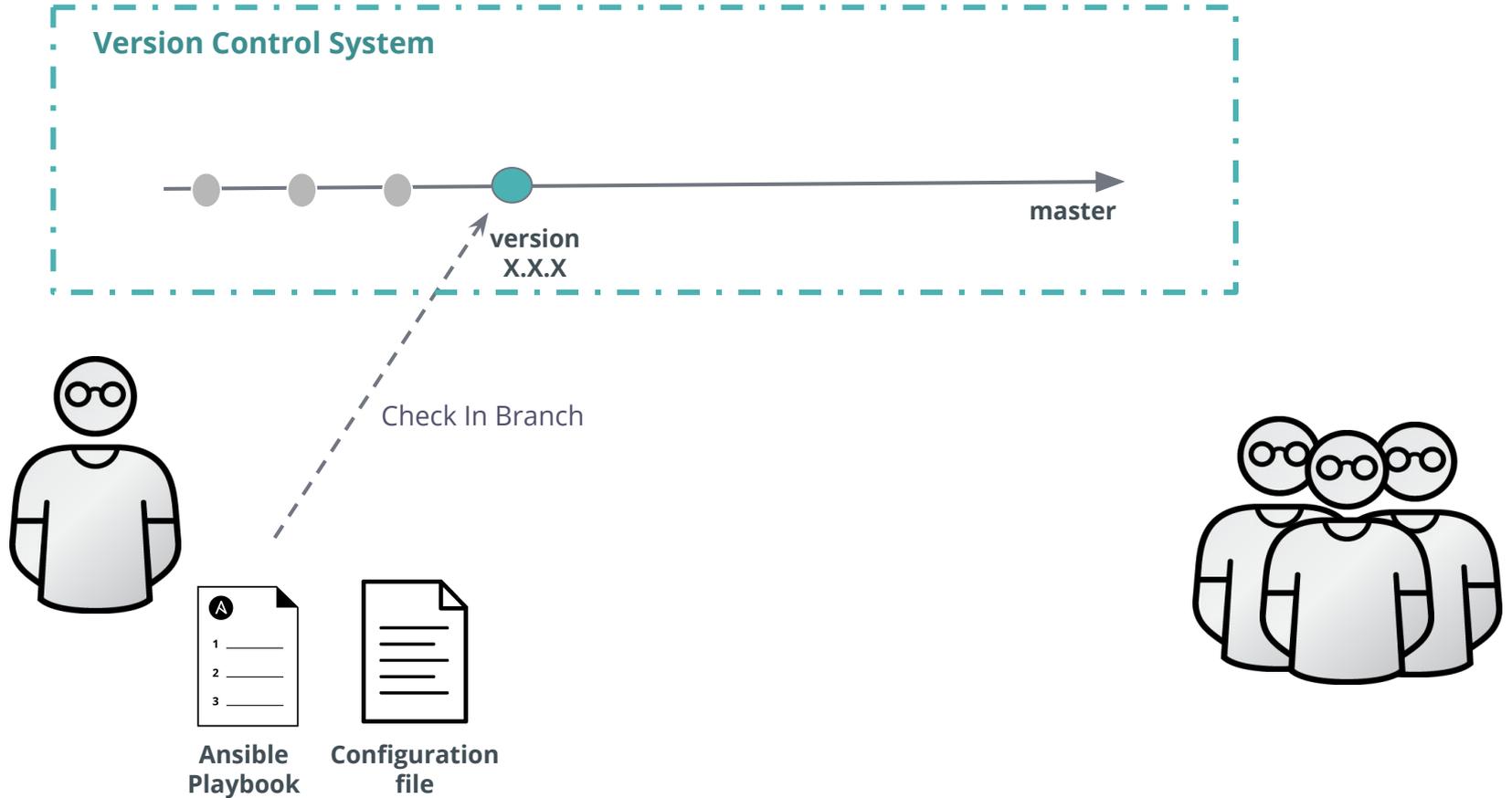
Ansible
Playbook



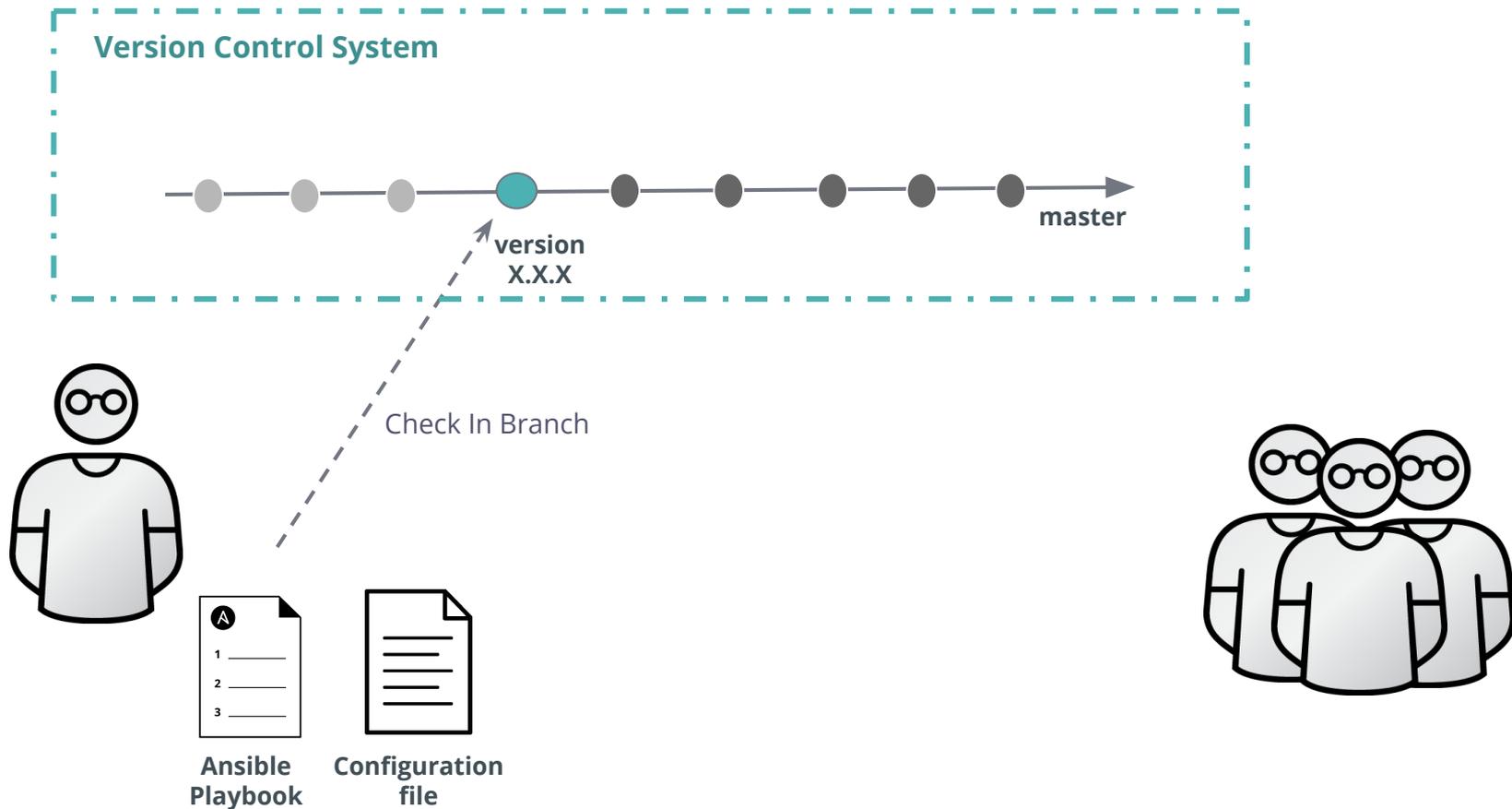
Configuration
file



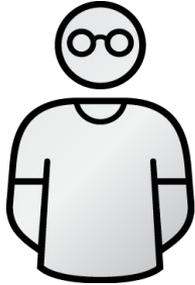
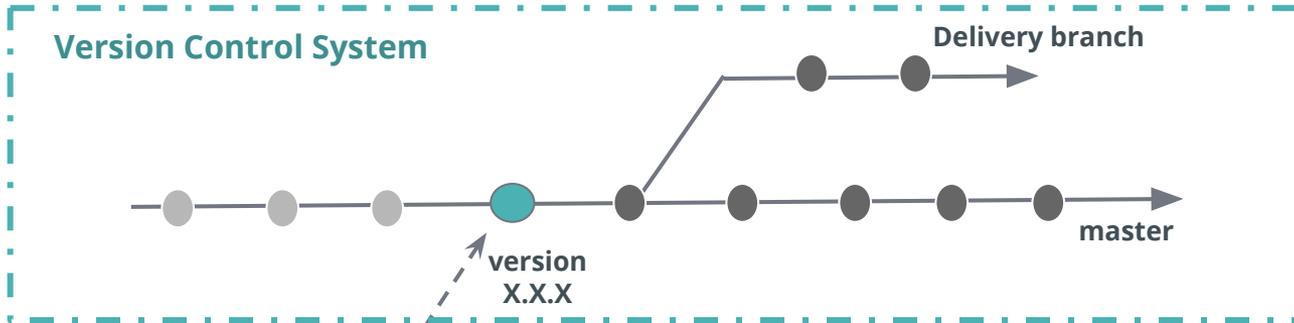
Using Version Control Systems



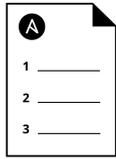
Using Version Control Systems



Using Version Control Systems



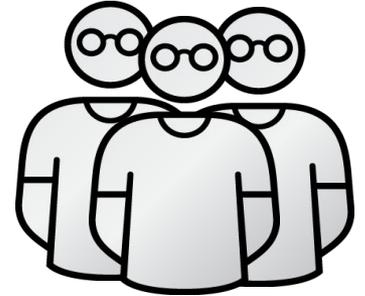
Check In Branch



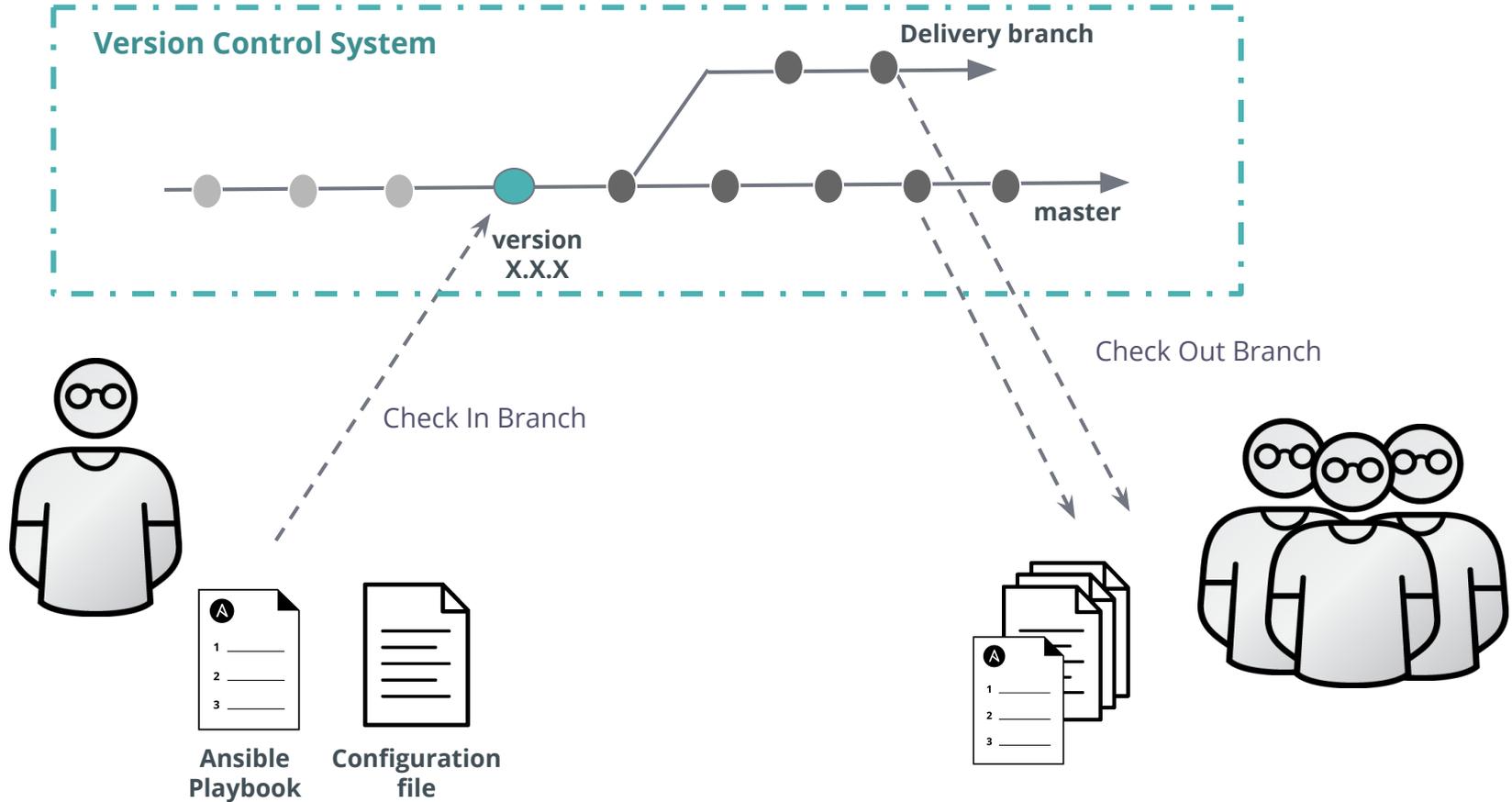
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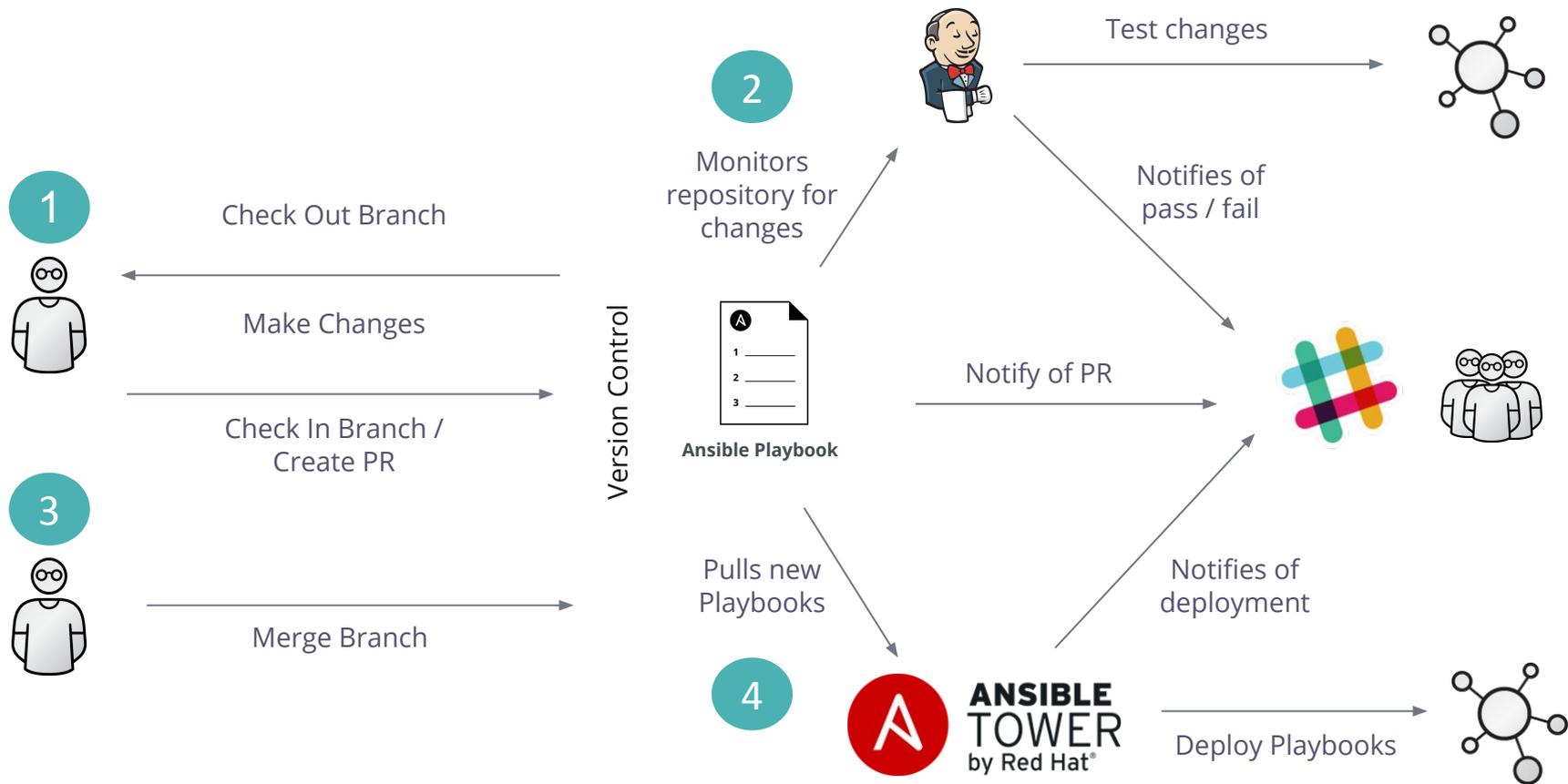
Configuration
file



Using Version Control Systems

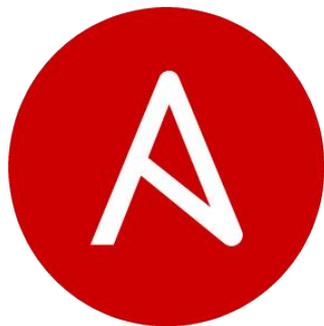


Network CI/CD - Now we can!





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RED HAT[®] ANSIBLE[®] Network Automation

Inventories

Credentials

Modules

UI

Roles

Scheduler

and more...

SCM integration

API

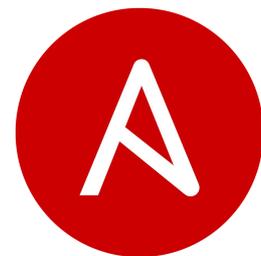
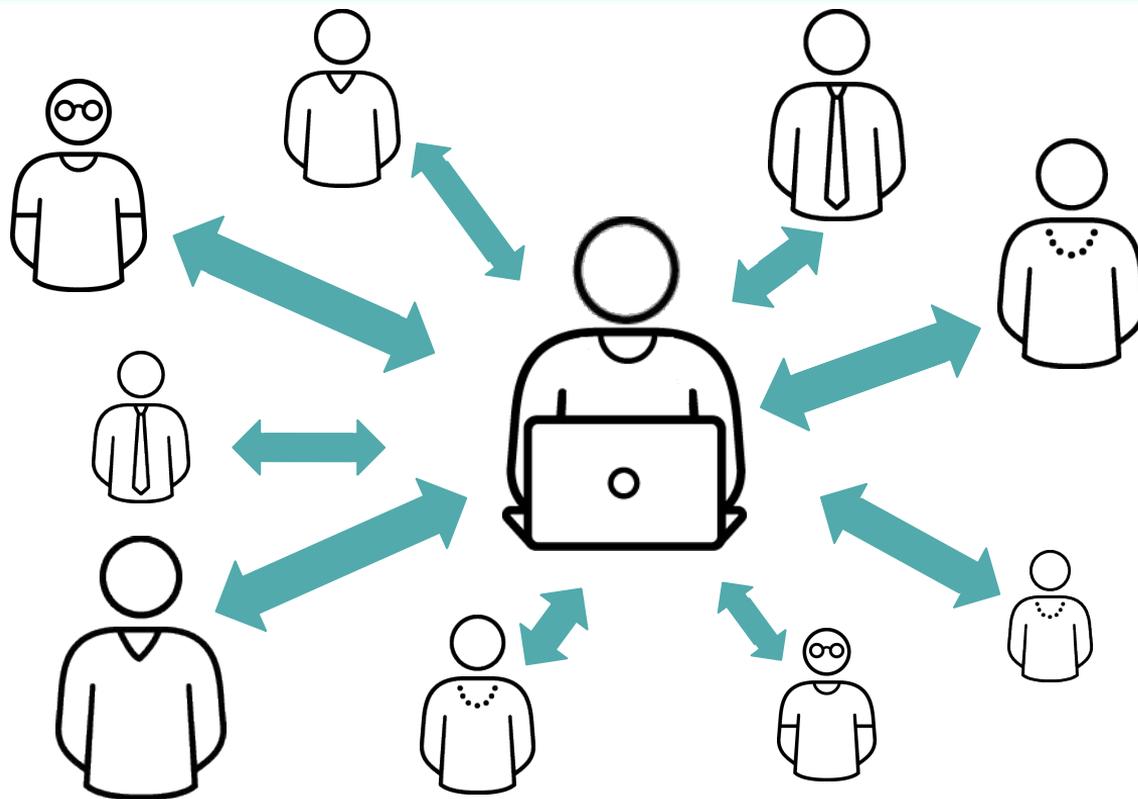
*Platform
agnostic*

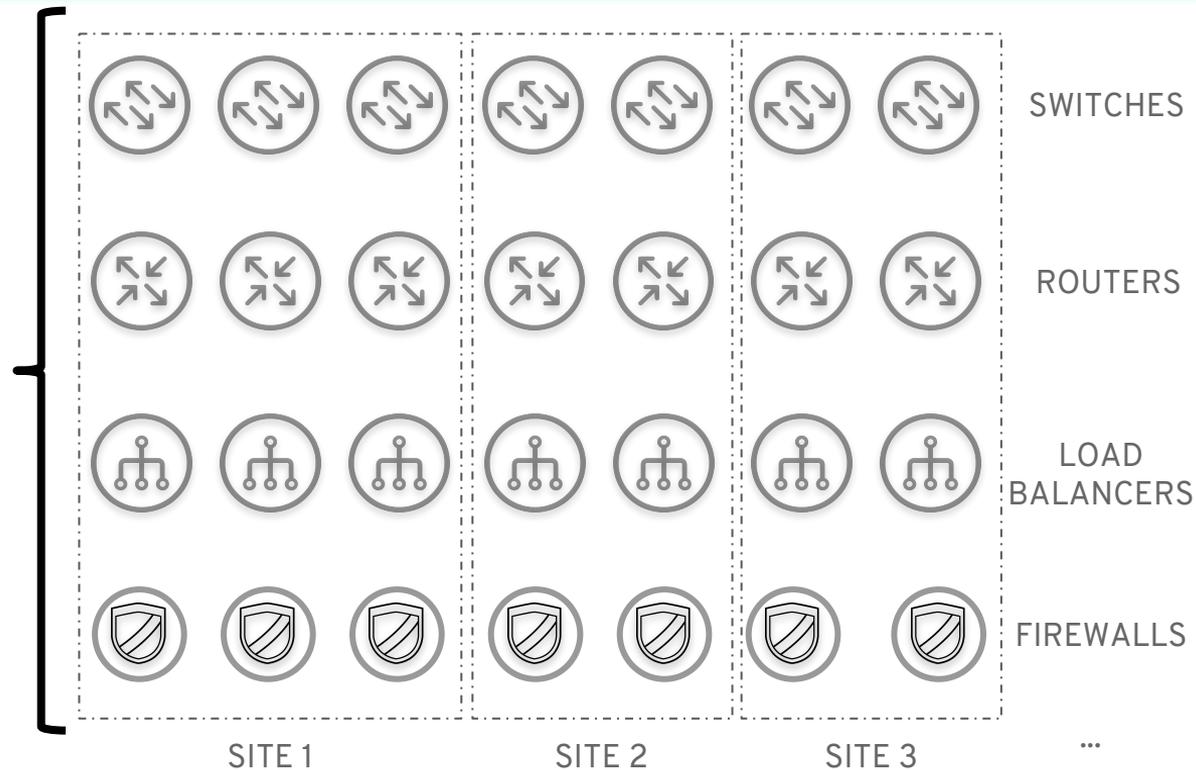
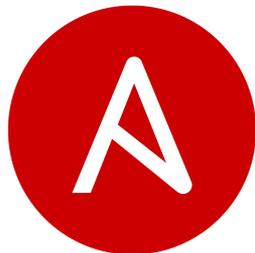


redhat.

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Demo time

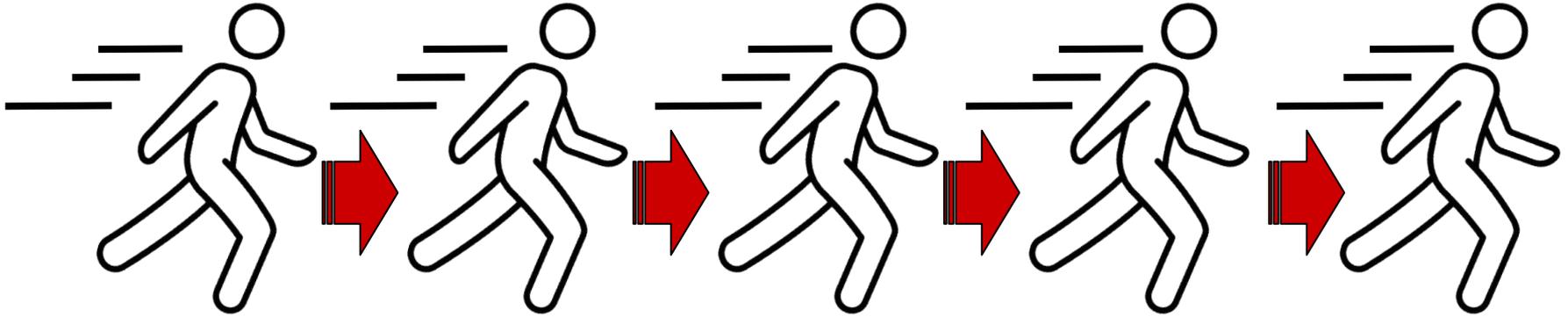


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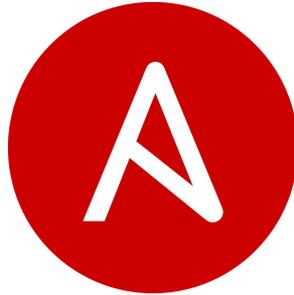




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NETWORK
DEPARTMENT



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MUCHAS GRACIAS



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