#ANSIBLEAUTOMATES

Ansible Usage

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Philip Cornelius, Ansible Specialist @smapjb

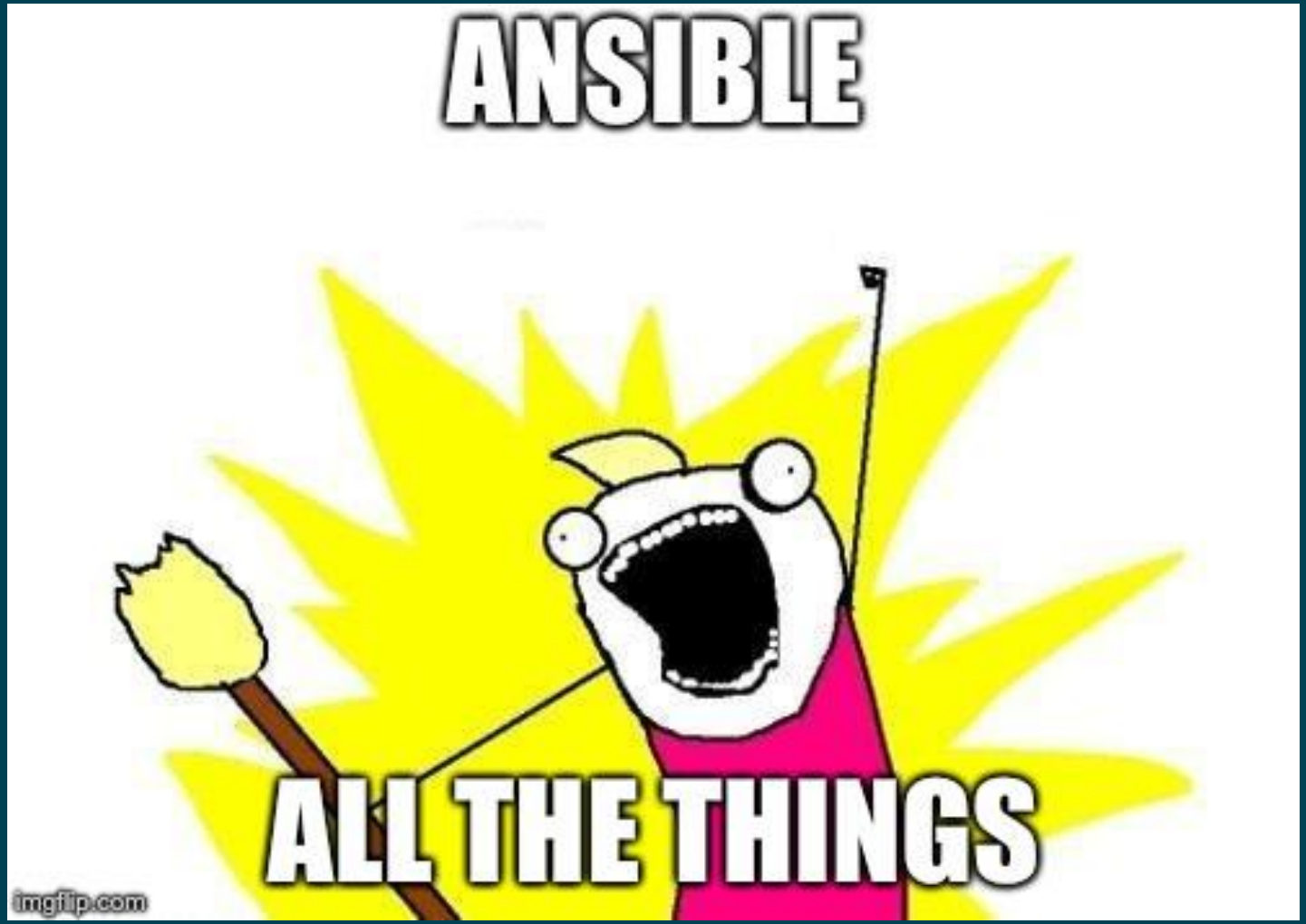
ANSIBLE

What are we talking about today?

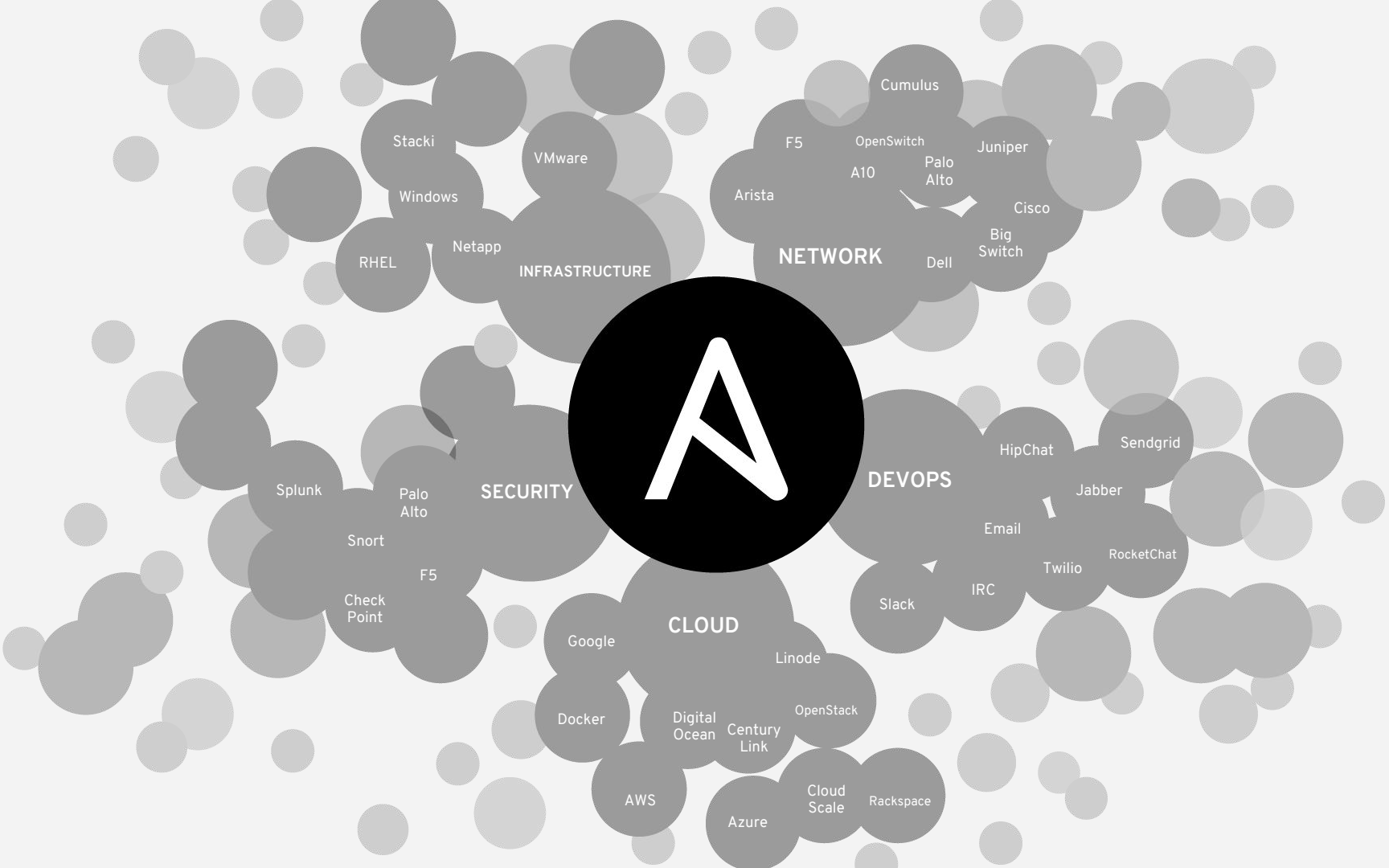
What you can Automate

Where you can Automate

How you should Automate


ANSIBLE
ALL THE THINGS
imgflip.com

I DON'T ALWAYS
AUTOMATE
BUT WHEN I DO,
I DO IT WITH ANSIBLE
imgflip.com


Stacki
VMware
Windows
RHEL
Netapp
INFRASTRUCTURE
Cumulus
F5
OpenSwitch
Juniper
A10
Palo Alto
Arista
Cisco
NETWORK
Big Switch
Dell
Splunk
Palo Alto
SECURITY
Snort
F5
Check Point
HipChat
Sendgrid
DEVOPS
Jabber
Email
Twilio
RocketChat
IRC
Slack
Google
CLOUD
Linode
Docker
Digital Ocean
Century Link
OpenStack
AWS
Azure
Cloud Scale
Rackspace

The purpose of Automation

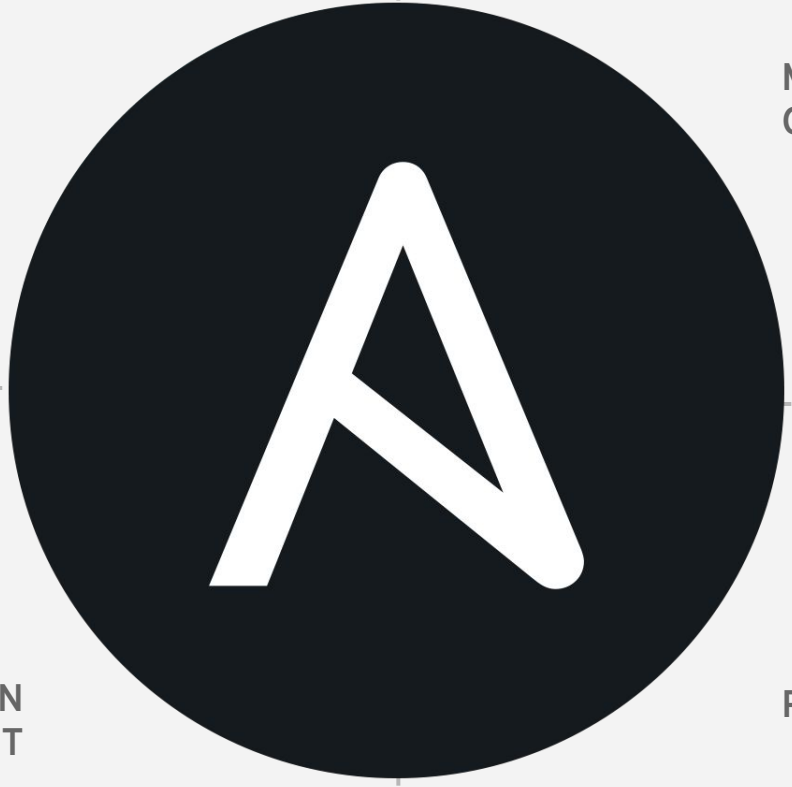
“This is what Ansible was written to do: ***Manage complex multi-tier deployments.***

We don’t just stop at configuration management or application deployment. To really do orchestration, you must do all of those well AND be an outstanding workflow engine. Real world app stacks involve lots of different classes of systems all working in concert.”

Michael DeHaan
Ansible project founder

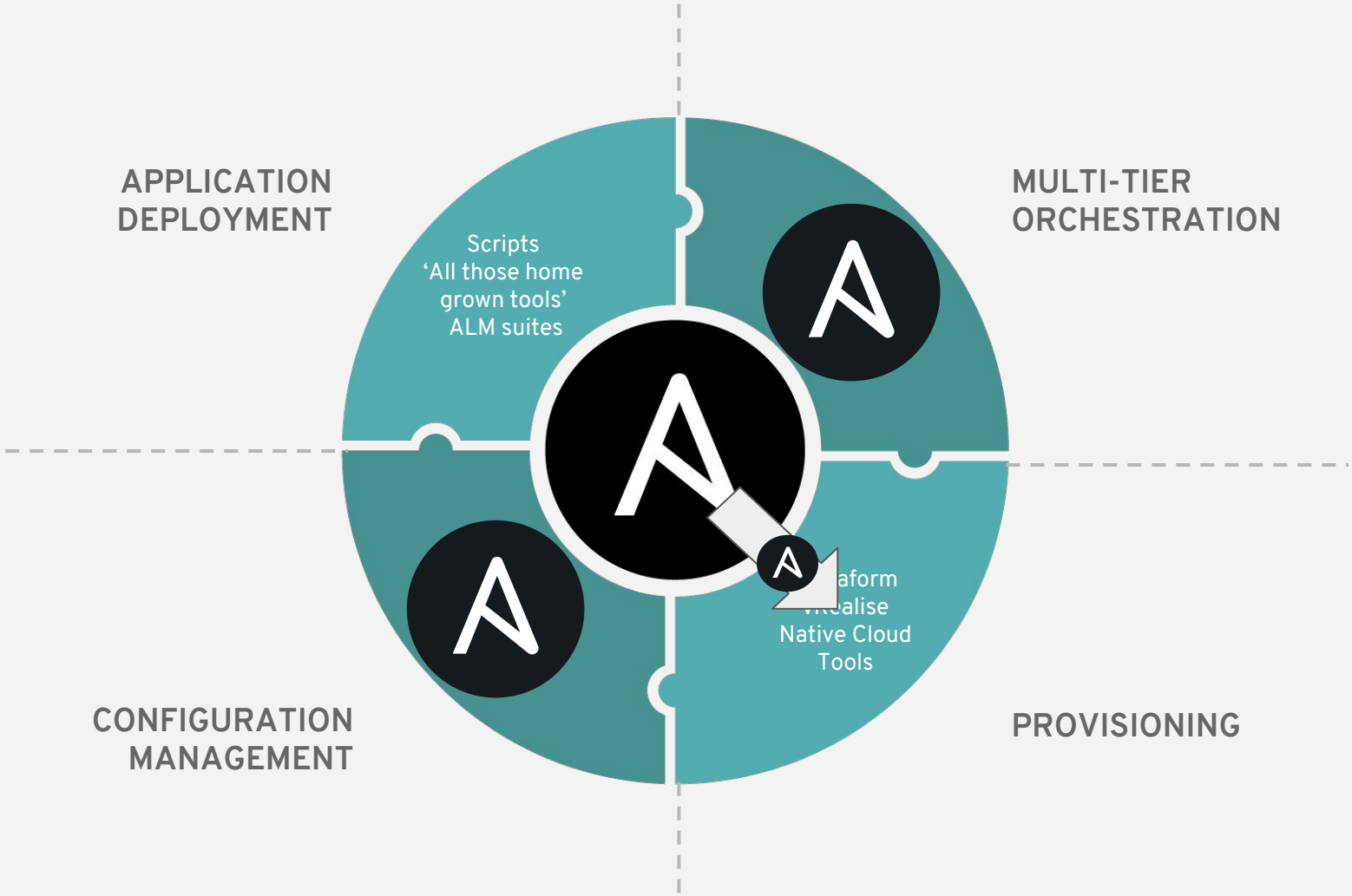
APPLICATION DEPLOYMENT

MULTI-TIER ORCHESTRATION



CONFIGURATION MANAGEMENT

PROVISIONING


APPLICATION DEPLOYMENT
Scripts
'All those home grown tools'
ALM suites
MULTI-TIER ORCHESTRATION
aform
alise
Native Cloud Tools
CONFIGURATION MANAGEMENT
PROVISIONING

Using Ansible for Everything

What are you trying to do?

PROVISIONING

CONFIG MANAGEMENT

ORCHESTRATION

APP DEPLOYMENT

CONTINUOUS DELIVERY

SECURITY/ COMPLIANCE

Provisioning

- Operating Systems
- Servers
- Virtual Machines
- Cloud IaaS and PaaS
- Databases
- SaaS Services

- Storage
- Physical Network
- SDNs
- VLANs
- Load Balancers
- Other?

DEMO

Configuration Management

- Managing file content
- Configuration Templating
- System and Service state
- Package Management
- Lifecycle Management

Application Deployment

DEMO

bit.ly/auto_abba

Orchestration

The Power of the Human Workflow

DEMO

Continuous Delivery

Pipelines

- Jenkins
- Bamboo
- TeamCity

Tool Chains

All things ‘ALM’

Security/Compliance

The act of securing your environment

The act of automating your security technology

DEMO

A bit about Culture...

....the Ansible Way

Approaches to Automation

TRADITIONAL	Automation within the team
CENTRAL	Automation by a team
DISTRIBUTED	Automation as a practice

The Ansible Way

CROSS PLATFORM

HUMAN READABLE DESCRIPTION OF APPLICATION

ENABLE REUSE

VERSION CONTROLLED

ENVIRONMENT TRANSPARENCY

ORCHESTRATION PLAYS WELL WITH OTHERS

The Ansible Way

CROSS PLATFORM

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Cross Platform

Agentless support for all Linux and Windows variants, physical, virtual, cloud and network devices

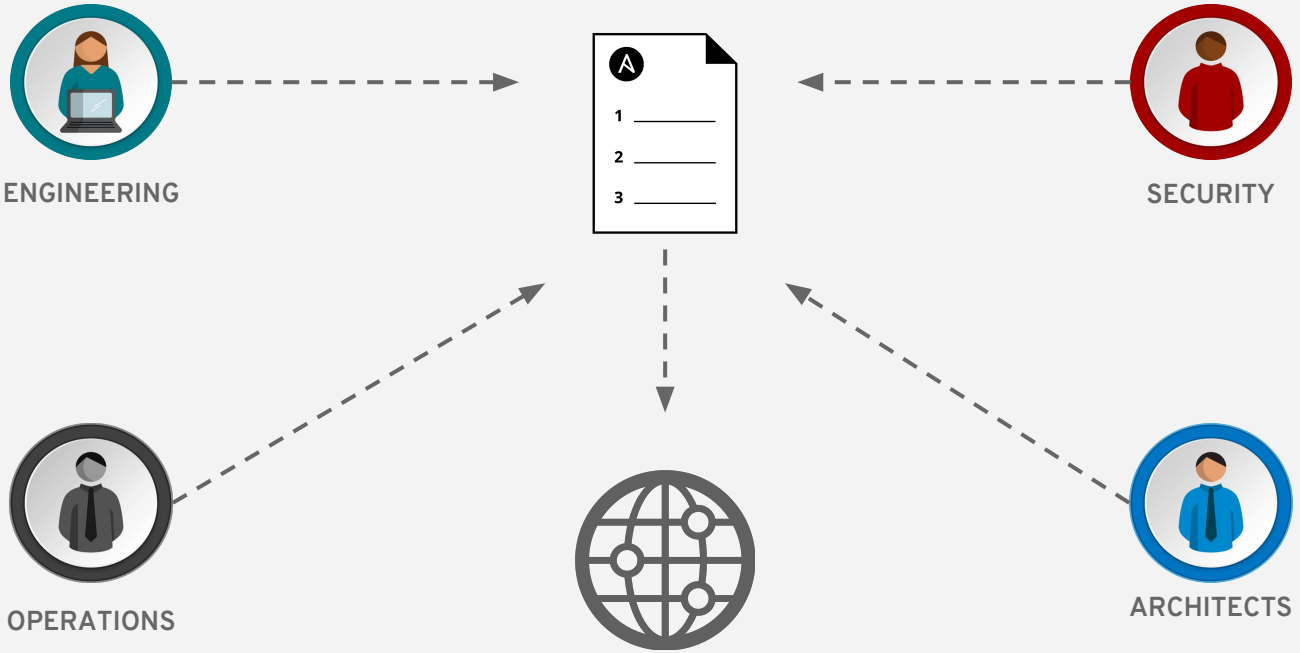
Do this...

Provisioning	Configuration Management	Application Deployment	Orchestration	Continuous Delivery	Security and Compliance

On these...

Firewalls	Load Balancers	Middleware	Applications	Containers
Servers	Infrastructure	Storage	Network Devices	**And more...**

Bringing Teams together



The Ansible Way

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Playbooks

```
- name: Create lab instances in AWS
  hosts: localhost
  connection: local
  become: no
  gather_facts: no
  roles:
    - manage_ec2_instances

- name: Configure common options on managed nodes and control nodes
  hosts: "managed_nodes:control_nodes"
  become: yes
  roles:
    - user_accounts
    - common
```

https://github.com/ansible/lightbulb/blob/master/tools/aws_lab_setup/provision_lab.yml

Playbooks

```
- name: Add hosts to groups
  add_host:
    name: "{{ item.invocation.module_args.instance_tags.Name }}"
    ansible_host: "{{ item.tagged_instances[0].public_ip }}"
    ansible_user: "{{ ec2_login_names[item.item.1.type] }}"
    ansible_port: "{{ ssh_port | default('22') }}"
    groups: lab_hosts,managed_nodes
  with_items: "{{ instances.results }}"
  when: "'ansible' not in item.invocation.module_args.instance_tags.Name"
  changed_when: no
  tags:
    - always
    - provision
```

https://github.com/ansible/lightbulb/blob/master/tools/aws_lab_setup/roles/manage_ec2_instances/tasks/create.yml

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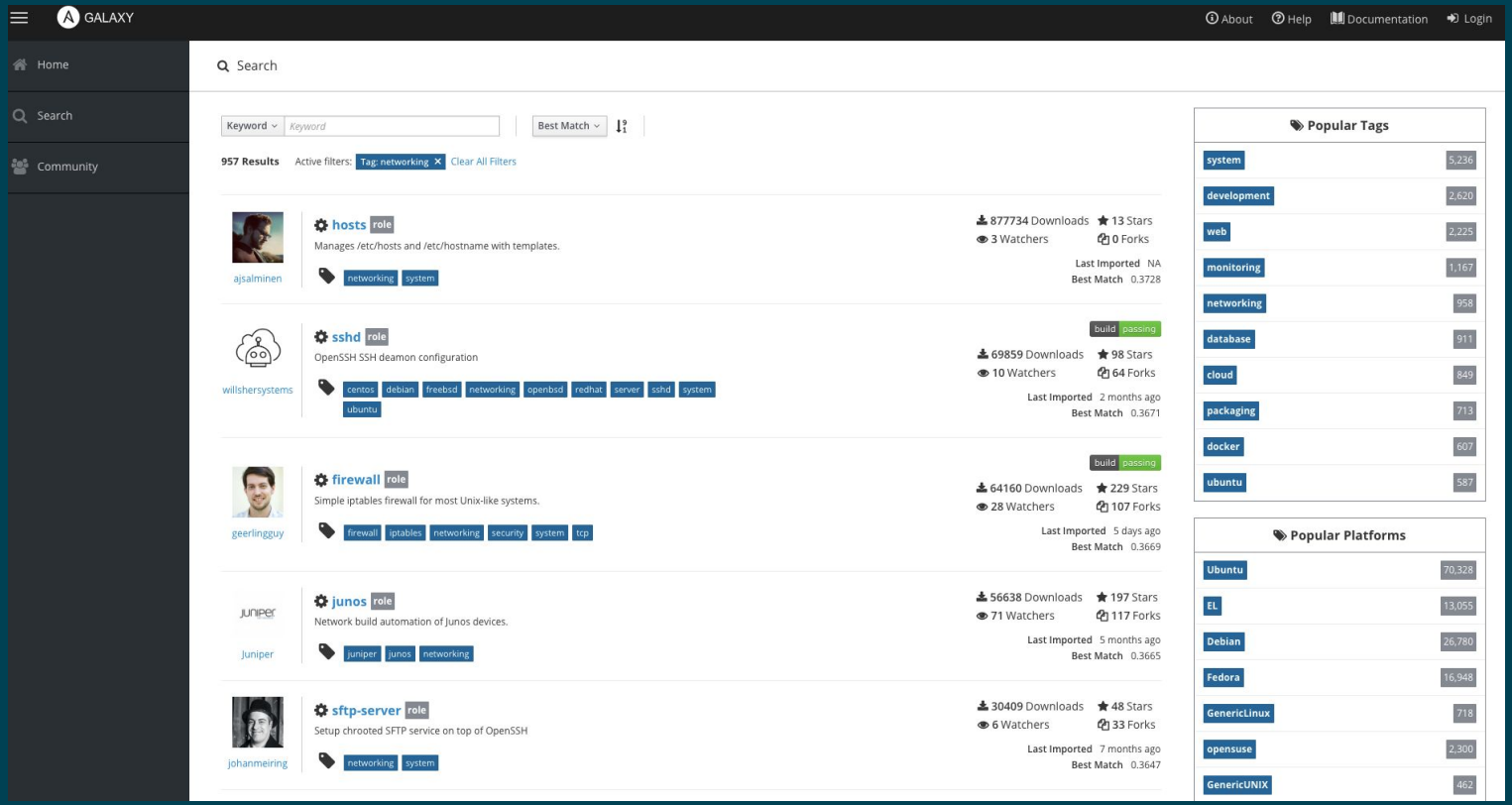
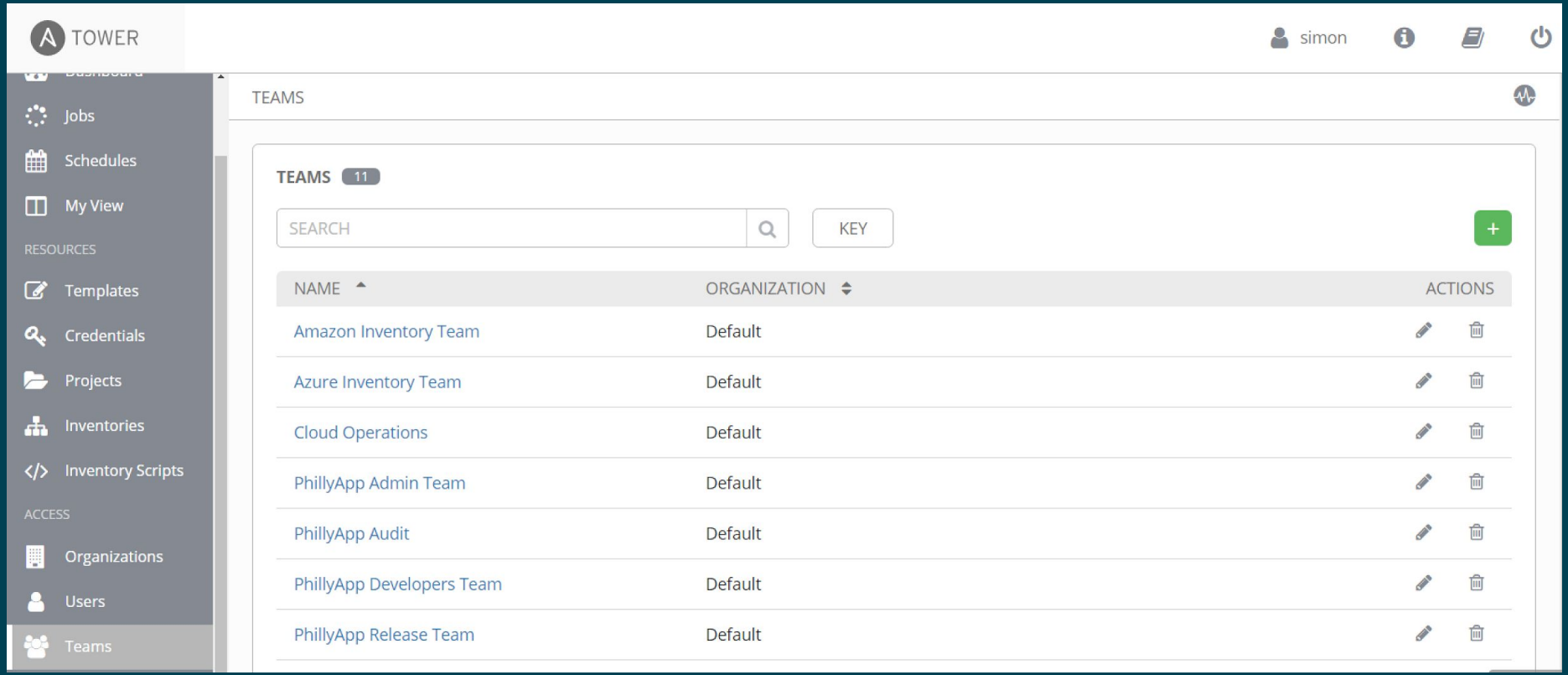
Galaxy


GALAXY
About
Help
Documentation
Login
Home
Search
Community
Search
Keyword
Keyword
Best Match
957 Results
Active filters:
Tag: networking
Clear All Filters
hosts role
Manages /etc/hosts and /etc/hostname with templates.
ajsalminen
networking
system
877734 Downloads
13 Stars
3 Watchers
0 Forks
Last Imported NA
Best Match 0.3728
sshd role
OpenSSH SSH deamon configuration
willshersystems
centos
debian
freebsd
networking
openbsd
redhat
server
sshd
system
ubuntu
build passing
69859 Downloads
98 Stars
10 Watchers
64 Forks
Last Imported 2 months ago
Best Match 0.3671
firewall role
Simple iptables firewall for most Unix-like systems.
geerlingguy
firewall
iptables
networking
security
system
tcp
build passing
64160 Downloads
229 Stars
28 Watchers
107 Forks
Last Imported 5 days ago
Best Match 0.3669
junos role
Network build automation of Junos devices.
Juniper
juniper
junos
networking
56638 Downloads
197 Stars
71 Watchers
117 Forks
Last Imported 5 months ago
Best Match 0.3665
sftp-server role
Setup chrooted SFTP service on top of OpenSSH
johanmeiring
networking
system
30409 Downloads
48 Stars
6 Watchers
33 Forks
Last Imported 7 months ago
Best Match 0.3647
Popular Tags
system 5,236
development 2,620
web 2,225
monitoring 1,167
networking 958
database 911
cloud 849
packaging 713
docker 607
ubuntu 587
Popular Platforms
Ubuntu 70,328
EL 13,055
Debian 26,780
Fedora 16,948
GenericLinux 718
opensuse 2,300
GenericUNIX 462

Ansible Tower - RBAC



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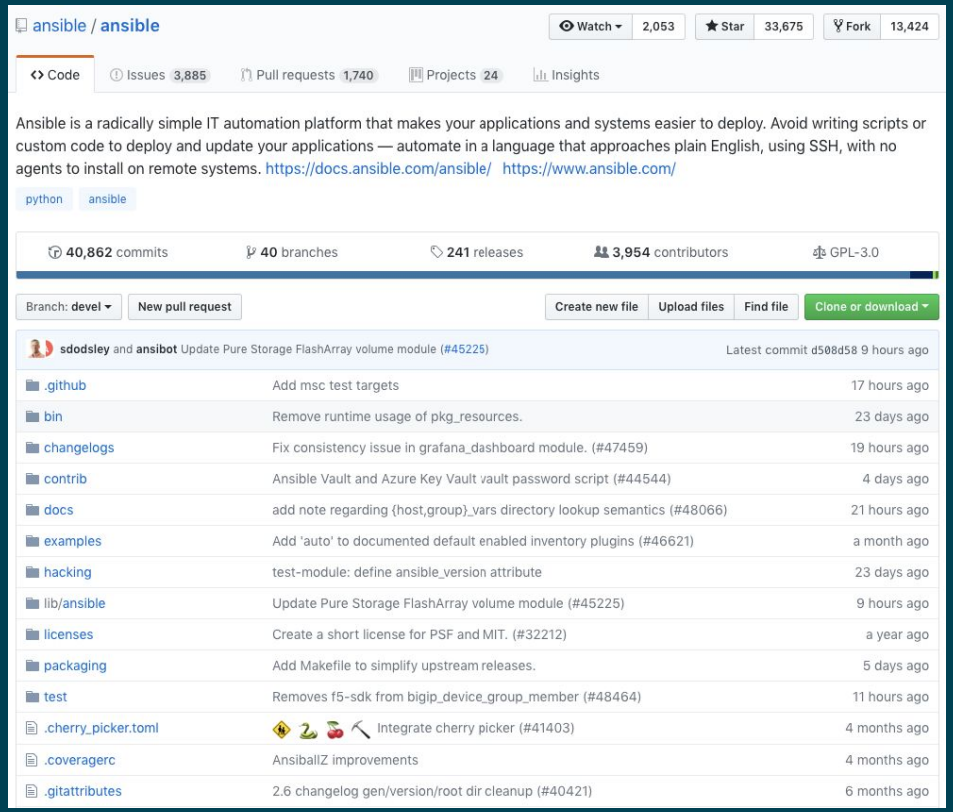
Source Code Control



ansible / ansible

Watch 2,053 | Star 33,675 | Fork 13,424

Code | Issues 3,885 | Pull requests 1,740 | Projects 24 | Insights

Ansible is a radically simple IT automation platform that makes your applications and systems easier to deploy. Avoid writing scripts or custom code to deploy and update your applications — automate in a language that approaches plain English, using SSH, with no agents to install on remote systems. https://docs.ansible.com/ansible/ https://www.ansible.com/

python ansible

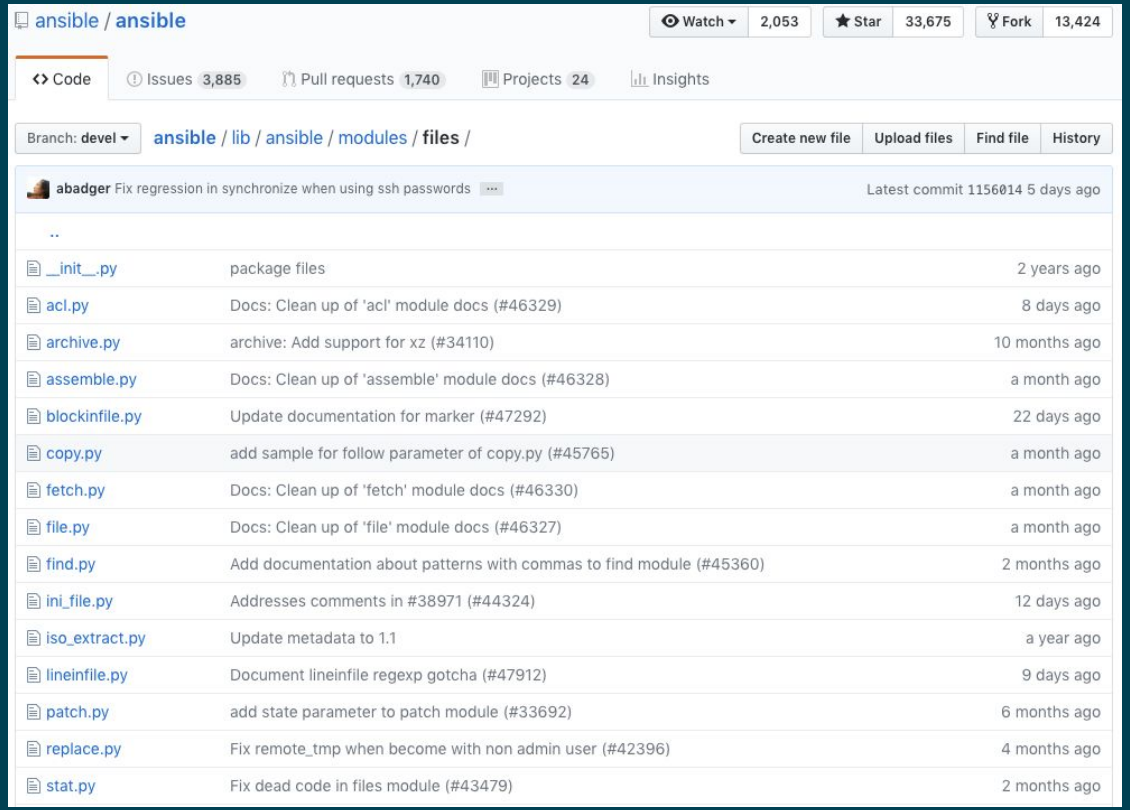
40,862 commits | 40 branches | 241 releases | 3,954 contributors | GPL-3.0

Branch: devel | New pull request | Create new file | Upload files | Find file | Clone or download

sdodsley and ansibot Update Pure Storage FlashArray volume module (#45225) — Latest commit d508d58 9 hours ago

.github	Add msc test targets	17 hours ago
bin	Remove runtime usage of pkg_resources.	23 days ago
changelogs	Fix consistency issue in grafana_dashboard module. (#47459)	19 hours ago
contrib	Ansible Vault and Azure Key Vault vault password script (#44544)	4 days ago
docs	add note regarding {host,group}_vars directory lookup semantics (#48066)	21 hours ago
examples	Add 'auto' to documented default enabled inventory plugins (#46621)	a month ago
hacking	test-module: define ansible_version attribute	23 days ago
lib/ansible	Update Pure Storage FlashArray volume module (#45225)	9 hours ago
licenses	Create a short license for PSF and MIT. (#32212)	a year ago
packaging	Add Makefile to simplify upstream releases.	5 days ago
test	Removes f5-sdk from bigip_device_group_member (#48464)	11 hours ago
.cherry_picker.toml	Integrate cherry picker (#41403)	4 months ago
.coveragerc	AnsiballZ improvements	4 months ago
.gitattributes	2.6 changelog gen/version/root dir cleanup (#40421)	6 months ago

Source Code Control



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Branch: devel — ansible / lib / ansible / modules / files / — Create new file | Upload files | Find file | History

abadger Fix regression in synchronize when using ssh passwords ··· — Latest commit 1156014 5 days ago

..		
__init__.py	package files	2 years ago
acl.py	Docs: Clean up of 'acl' module docs (#46329)	8 days ago
archive.py	archive: Add support for xz (#34110)	10 months ago
assemble.py	Docs: Clean up of 'assemble' module docs (#46328)	a month ago
blockinfile.py	Update documentation for marker (#47292)	22 days ago
copy.py	add sample for follow parameter of copy.py (#45765)	a month ago
fetch.py	Docs: Clean up of 'fetch' module docs (#46330)	a month ago
file.py	Docs: Clean up of 'file' module docs (#46327)	a month ago
find.py	Add documentation about patterns with commas to find module (#45360)	2 months ago
ini_file.py	Addresses comments in #38971 (#44324)	12 days ago
iso_extract.py	Update metadata to 1.1	a year ago
lineinfile.py	Document lineinfile regexp gotcha (#47912)	9 days ago
patch.py	add state parameter to patch module (#33692)	6 months ago
replace.py	Fix remote_tmp when become with non admin user (#42396)	4 months ago
stat.py	Fix dead code in files module (#43479)	2 months ago

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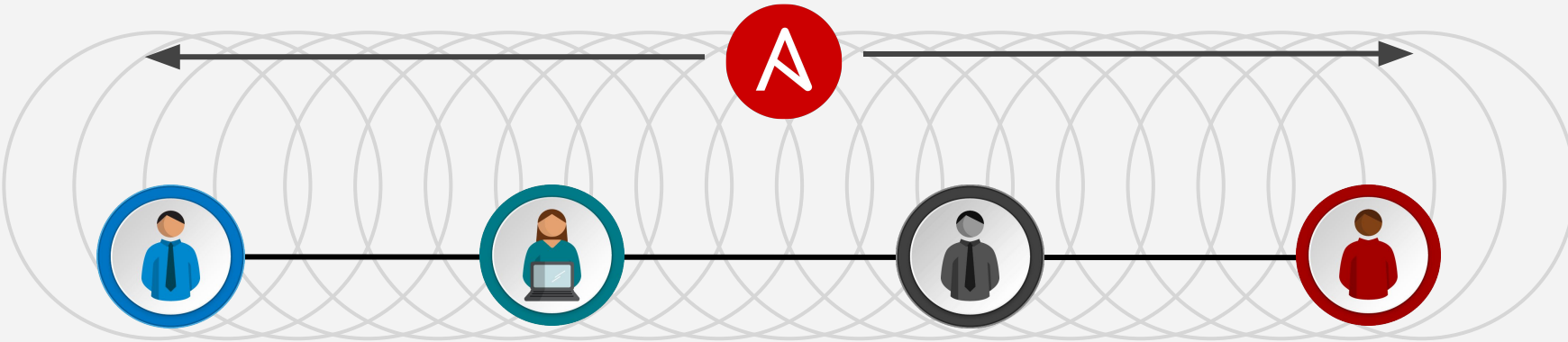
Conducting the Orchestra

- Puppet
- CloudFormation
- TerraForm
- Cisco ACI
- VMware vSphere
- Azure Resource Manager
- AWS Lamda
- GCP Platform Services
- Kubernetes

ANSIBLE IS THE UNIVERSAL LANGUAGE



BUSINESS DEV QA/SECURITY IT OPERATIONS