

Future Directions

An Ansible Developer and Ecosystem Story

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```
$ git show f31421576b00f0b167cdbc61217c31c21a41ac02
```

```
Author: Michael DeHaan <michael.dehaan@gmail.com>
```

```
Date: Thu Feb 23 14:17:24 2012 -0500
```

```
Genesis.
```

```
diff --git a/README.md b/README.md
```

```
new file mode 100644
```

```
index 0000000000..60bbc9f813
```

```
--- /dev/null
```

```
+++ b/README.md
```

```
@@ -0,0 +1,88 @@
```

```
:
```

THE ANSIBLE WAY



SIMPLE

- Human readable automation
- No special coding skills needed
- Tasks executed in order
- Usable by every team
- Get productive quickly**



POWERFUL

- App deployment
- Configuration management
- Workflow orchestration
- Network automation
- Orchestrate the app lifecycle**



AGENTLESS

- Agentless architecture
- Uses OpenSSH & WinRM
- No agents to exploit or update
- Get started immediately
- More efficient & more secure**

OPTIMIZED FOR CONTRIBUTION

“Modularity and option value create opportunities for the exchange of valuable work among developers, opportunities that do not exist in codebases that are not modular or have no option value.”

SOURCE: The Architecture of Participation. Carliss Y. Baldwin, Kim B. Clark, Harvard Business School, Oct. 2005.

BATTERIES INCLUDED

Ansible ships with a rich and versatile standard library which is immediately available without making the user download separate packages.

- cloud
- clustering
- containers
- cryptography
- database
- DNS
- files

- inventory
- identity
- messaging
- monitoring
- network
- notifications
- packaging
- security

- source control
- storage
- system
- testing
- utilities
- web infrastructure
- windows

IT HAS BEEN WORKING

Octoverse 2018: #7 for unique contributors (~4100)

14,000

FORKS

35,000

STARS

40k

COMMITTS

“Whenever an individual or a business decides that success has been attained, progress stops.”

Thomas J. Watson

GROWING PAINS

- Volume of contributions is weighing down releases
- Bottlenecks to participation
- Different release cadences of integrations
- Dramatic expansion of the use cases over time
- Opportunities to provide more value to users
- Embedding of Ansible in other projects/products

What Does This Mean?



Ansible is evolving and needs to become
a **platform** for automation

A few sane options are needed to supplement
the ease and simplicity of the
“batteries included” distribution model

CURRENT ASSUMPTIONS

Current assumptions under the “batteries included” only distribution model will no longer be valid and cannot be relied on going forward.

- Only `ansible/ansible/devel` matters
- Compatibility, namespace conflicts & quality checks managed thru code review
- Streamlined testing -- only the current version matters
- Functionality is part of a single bundle

ASSUMPTIONS CHANGE

In adjusting to these changes in the assumptions that Ansible has relied upon, these issues now need to be addressed:

- Managing namespace conflicts & incompatibilities
- Initialization performance
- Quality control and testing
- Versioning

NEW REQUIREMENTS

New and additional tooling will have to be developed for the platform ecosystem to thrive

- A New Packaging Format for Ansible Content
- Content Package Management
- Developer Tools
- Enhance Roles
- Enhance The Galaxy Hub (galaxy.ansible.com)

A NEW PACKAGING FORMAT

Ansible will need a new means of packaging and shipping content that is independent and external to the core engine

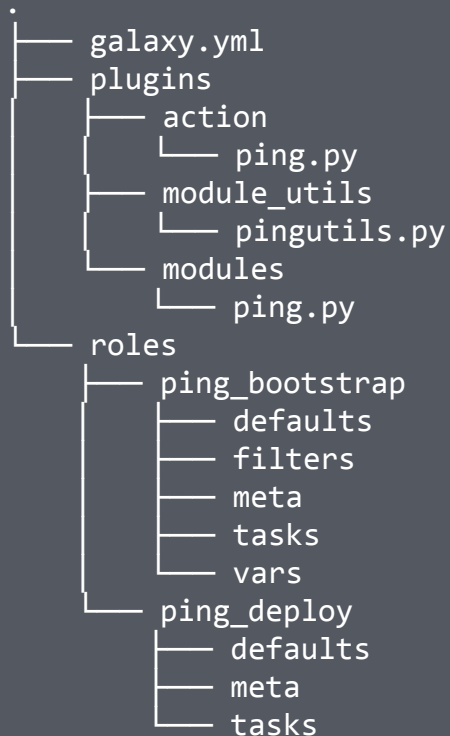
- The Ansible Role packaging format is insufficient
- Simple, lightweight and consistent with the Ansible way
- Can contain multiple Ansible modules, plugins, roles and maybe more

ANSIBLE CONTENT COLLECTION

A new format for delivering content independently of the Ansible core engine

- A collection is the unit of distribution and versioning of Ansible content
- A collection may contain 1-N of roles, modules, plugins and module utilities
- Installable as system, user or project (content adjacent) resources

ANSIBLE CONTENT COLLECTION PREVIEW



ANSIBLE CONTENT COLLECTION PREVIEW

```
hosts: somehosts
collections:
  - tima.pinger
  - redhat.open_ping

tasks:
  - tima.pinger.ping:

  - ansible.builtin.ping: # use only the ping packaged in core

  - ansible.legacy.ping: # use core or library(etc)/ping.py
    when: thing | tima.pinger.filter == 42

  - ping: # searches collections "path" otherwise...
    # still works, == ansible.legacy.ping:
```

CONTENT PACKAGE MANAGEMENT

The introduction of a new content packaging format requires a means of managing it

- The `ansible-galaxy` CLI is insufficient (and not really a package manager)
- Minimize the inherent pitfalls of package management
- Prioritize simplicity over flexibility and package management norms
- Focus strictly on management functions and not development
- This requirement will be addressed by Mazer
 - <https://github.com/ansible/mazer>

DEVELOPER TOOLS

New tools are needed to provide an effective and standardized means of developing content that is independent of the core engine

- The Ansible core engine benefited from the extensive developer tools for its own development and testing
- Some additional tools exist expressly for Ansible development as a convenience
- These tools are insufficient outside of the single repo “batteries included” model
- Needs to encourages participation, reuse, stability and best practices in an Ansible way as possible -- being simple, powerful and frictionless.
- Needs to automate and scale more of what’s been done through manual code review by core committers and others

DEVELOPER TOOLS

New tools are needed to provide an effective and standardized means of developing content that is independent of the core engine

- Molecule: An Ansible testing framework
 - <http://github.com/ansible/molecule>
 - Lots of improvements and alignment planned -- too many to list
 - Collections support
 - ansible-test lint and sanity tests integration
 - <https://github.com/ansible/ansible/tree/devel/test/runner>

DEVELOPER TOOLS

New tools are needed to provide an effective and standardized means of developing content that is independent of the core engine

- ansible-lint: Static analyser for Ansible best practices and other checks
 - <http://github.com/ansible/ansible-lint>
 - Already integrated into new galaxy.ansible.com submissions
 - More rules and continue functionality

ENHANCE ROLES

Feature enhancements and design patterns for Roles to support greater reuse and reduce the need for fork-and-modify activities

- Implement role argument spec validation similar to modules
 - <https://github.com/ansible/proposals/issues/39>
 - <https://github.com/ansible/ansible/pull/44983>
- Implement “adhoc” role execution
- Provide standardized embedded documentation format functionality of roles
 - <https://github.com/ansible/proposals/issues/19>

ENHANCE THE GALAXY HUB

<https://galaxy.ansible.com/>

- Support for Collections and Mazer
- Continued search, feedback and UX improvements
- Address the “dash quandary” in namespaces
- Lay groundwork to break dependency on GitHub
 - Tech preview push architecture using Pulp infrastructure

So when are we getting this?

WHEN?

We're at the beginning of a *multi-year effort* with details emerging over time

Now

- Changes to the Galaxy Hub are continuing to roll out
- Molecule and ansible-lint are now official Ansible projects

Ansible 2.8 (RC1 “Soon”/May Release)

- Tech Preview of Collections & Mazer
- PluginLoader enhancements¹
 - Collections Content Path Support
 - Namespace Support
- Role enhancements
 - Argument spec validation
 - “Adhoc” role execution

¹ <https://github.com/ansible/ansible/pull/52194>

CONTRIBUTING

Try it out and open issues please

- github.com/ansible/galaxy
- github.com/ansible/mazer
- github.com/ansible/ansible-lint
- github.com/ansible/molecule
- galaxy-dev.ansible.com
- #ansible-galaxy on IRC
- #ansible-molecule on IRC

SEPTEMBER 24-26

#ANSIBLEFEST
ATLANTA
2019



redhat

ANSIBLE

Thank you