Prevent the zombie apocalypse

With Red Hat automation

Agenda

- Background
- The zombie treadmill analogy
- Have a plan!
- Choose your weapons!
- Survive until sunrise with services!

Purpose of this talk

- This talk is not prescriptive.
- To encourage you to think about your own environments.
- Learn from the mistakes of others.
- Spot patterns before they become a problem.
- Help you avoid your own zombie apocalypse.

Background

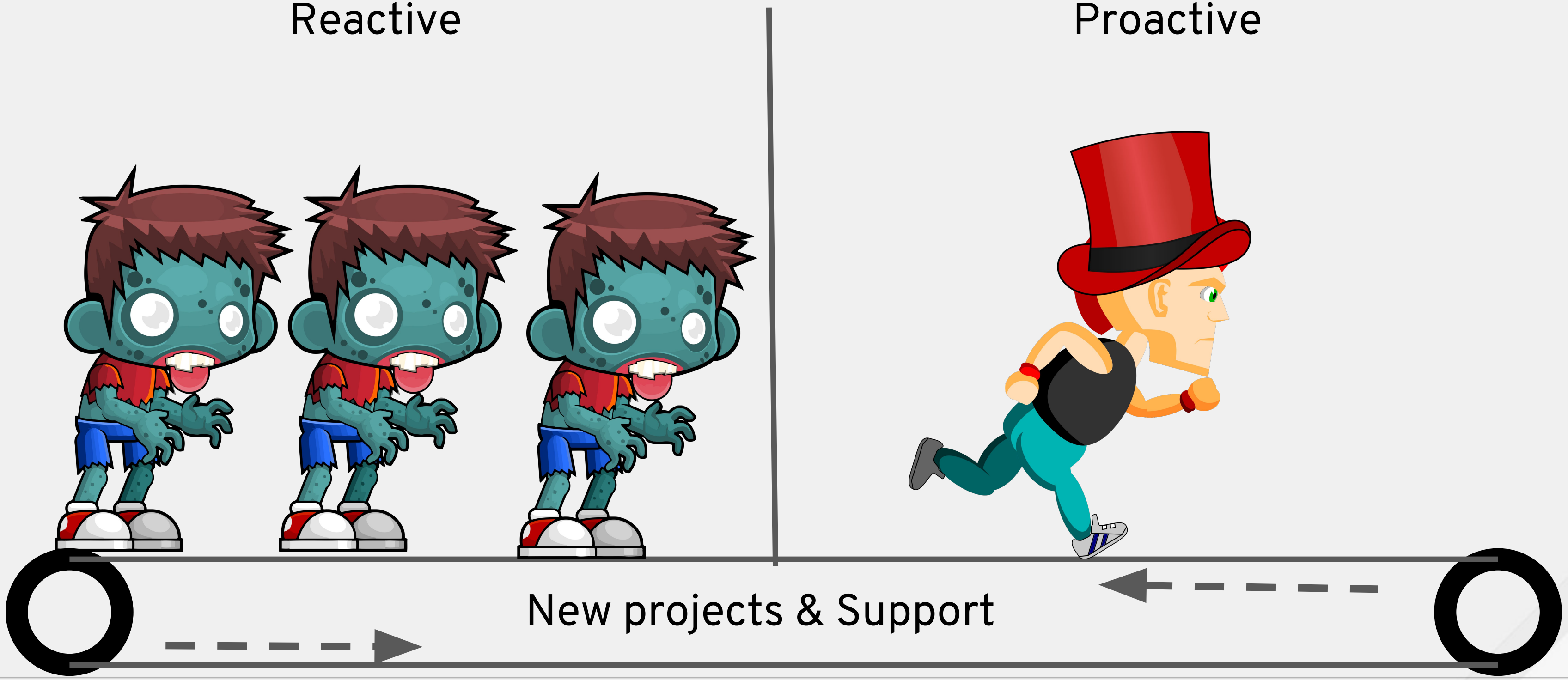
What do we know about zombies

Zombies : Not all zombies are created equally

- They run at different speeds
- They all look slightly different
- How do you track a zombie apocalypse ?
- Some can hide better than others

Apocalypse : When the zombies take over!

Zombie treadmill



Reactive

Proactive

New projects & Support

Zombie treadmill

Reactive

- Lots of variation across the estate
- Lots of one off servers
- Multiple management tools
- Lots of manual lifting
- Manual documentation
- Team silos
- Fighting other teams

Proactive

- Standard builds
- Repeatable processes
- Automation where appropriate
- Good up to date documentation
- Single source of truth
- Regular maintenance
- Good relationships with other teams

New projects & Support

Impact of the apocalypse

Infra teams struggle to...

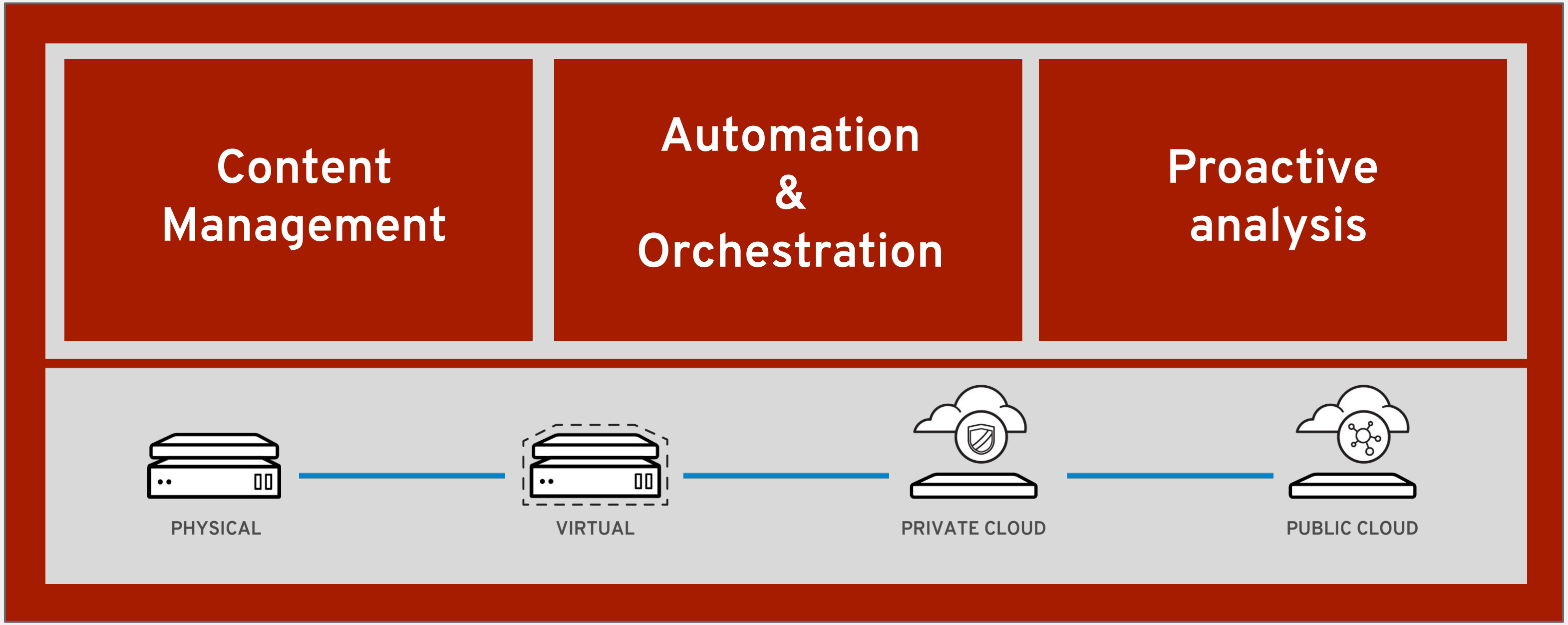
- Deliver new projects
- Prioritise support cases over remediation work
- Make good decisions due to external pressure
- Stay proactive
- Stay motivated

Automating a reactive environment

Technology != Automation

Have a plan!

Standard Operating Environment



Content Management

Automation & Orchestration

Proactive analysis

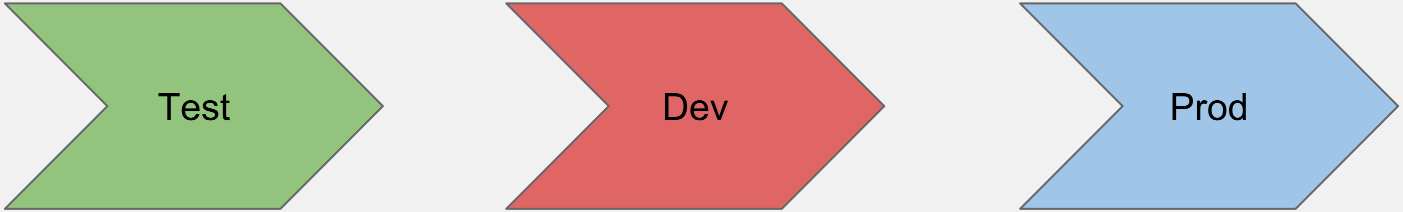
Standard Operating Environment

Common problems customers face

- Non-Standard RHEL builds
- Application vendors stuck on minor releases
- Moving patching targets
- Different security standards for different applications
- Multiple systems of record

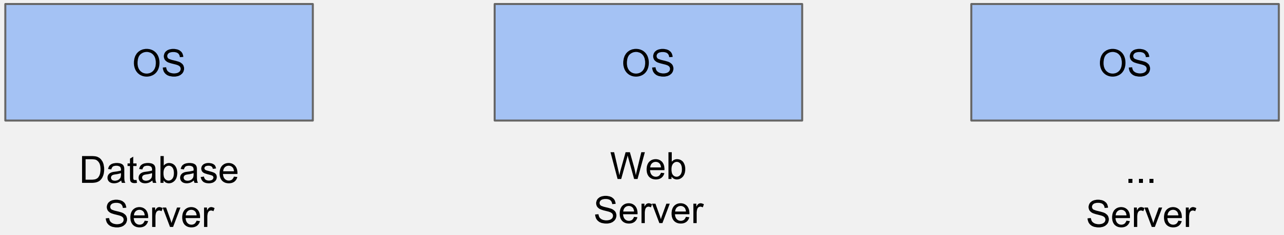
Standard Operating Environment

Part 1 - Define Lifecycle environments



Standard Operating Environment

Part 2 - Define Standard Operating System



OS

Database Server

OS

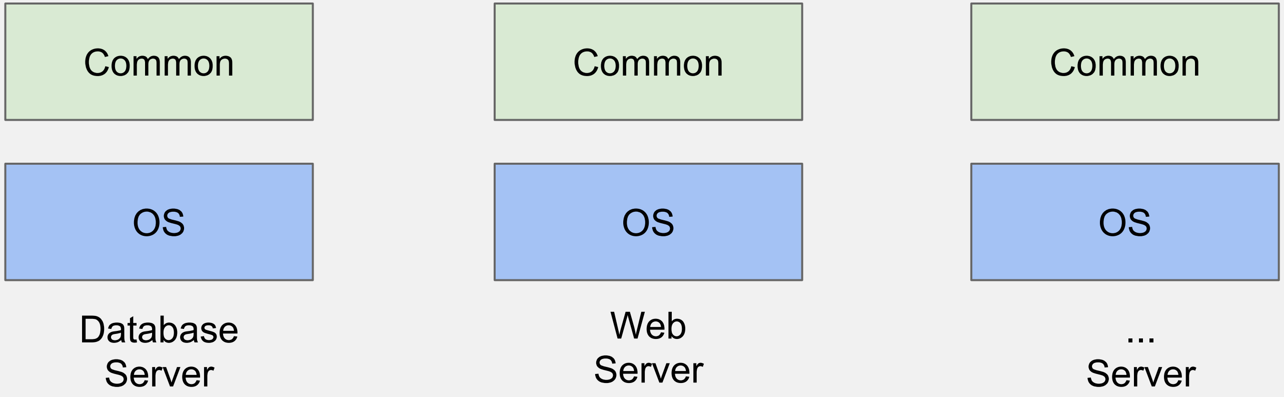
Web Server

OS

... Server

Standard Operating Environment

Part 3 - Automate Common Configuration



Common

OS

Database Server

Common

OS

Web Server

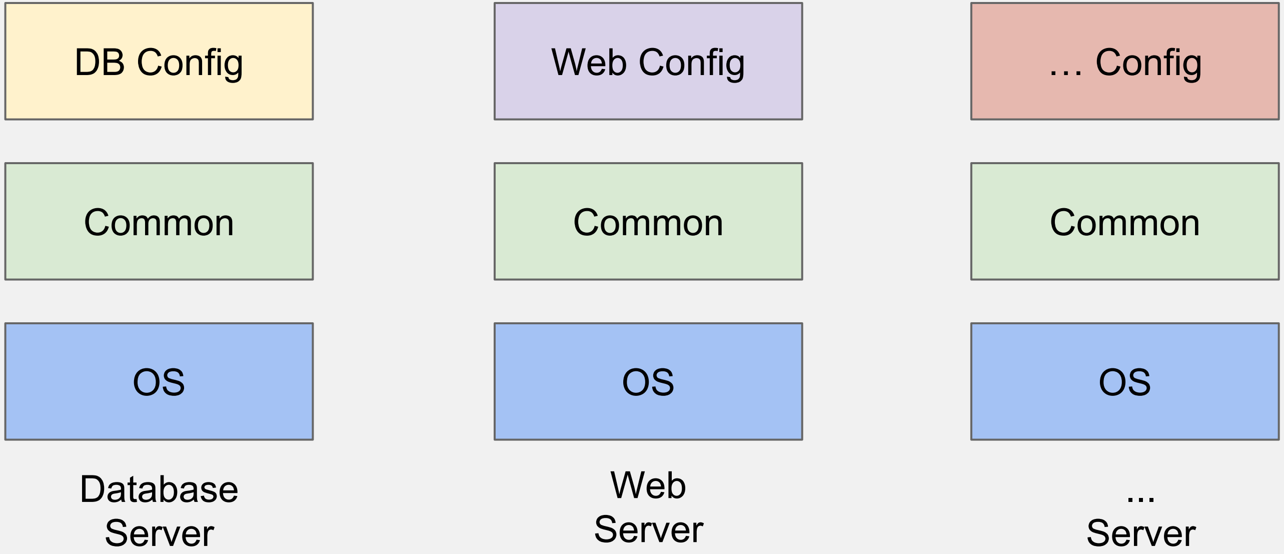
Common

OS

... Server

Standard Operating Environment

Part 4 - Automate Role Specific Configuration

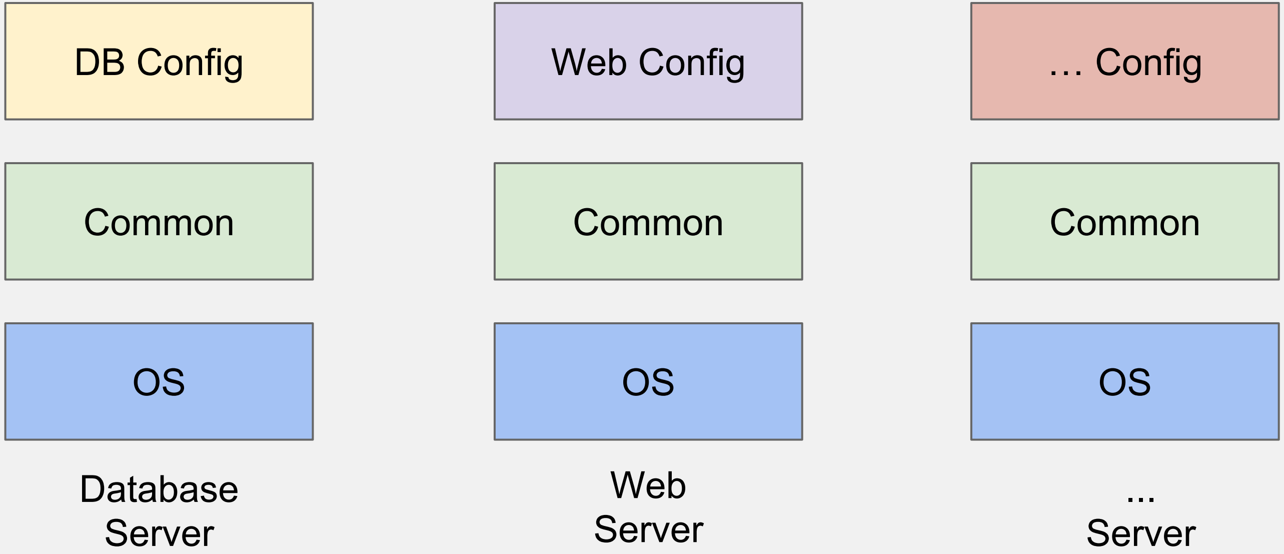


DB Config	Web Config	… Config
Common	Common	Common
OS	OS	OS
Database Server	Web Server	... Server

Standard Operating Environment

Tooling

RED HAT SATELLITE



Database Server	Web Server	… Server
DB Config	Web Config	… Config
Common	Common	Common
OS	OS	OS

ANSIBLE

Choose your weapons

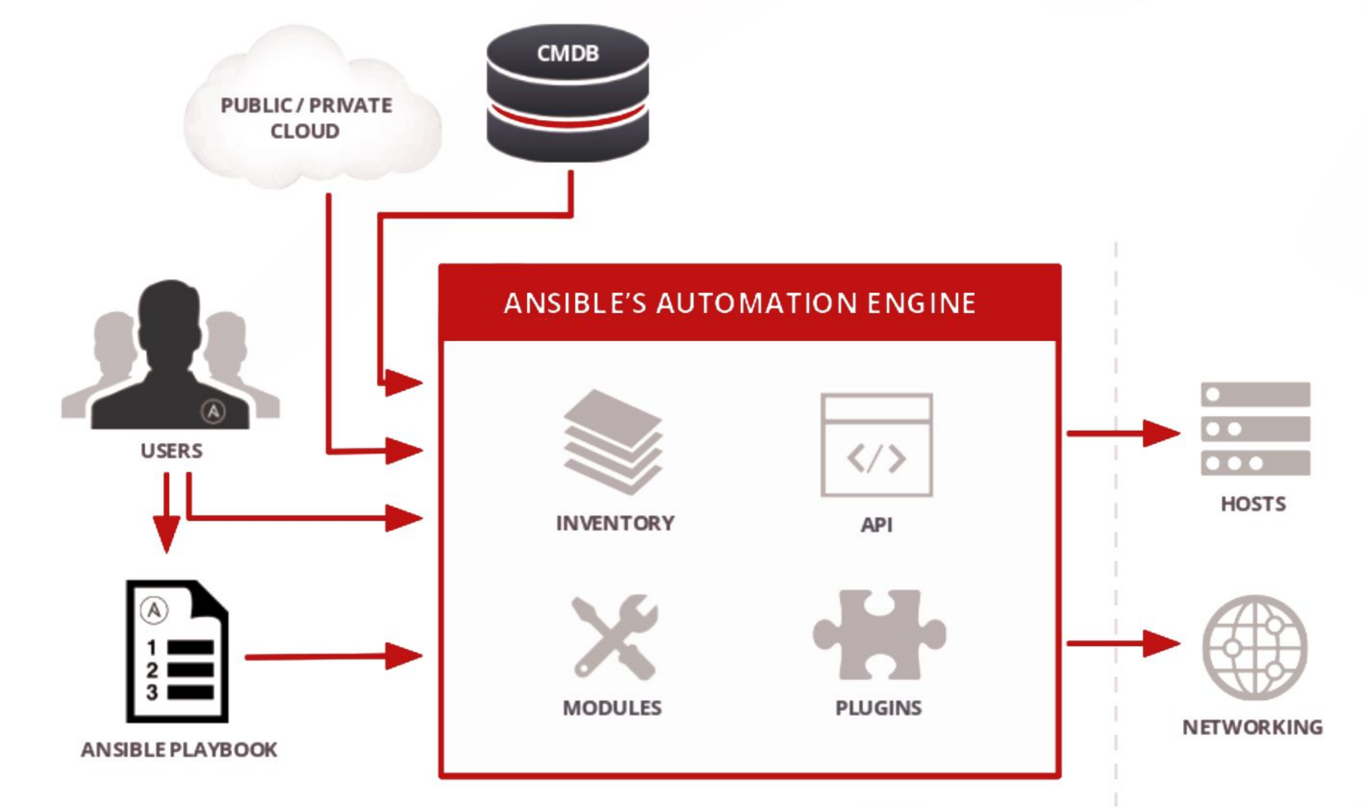
Content sources

RED HAT CDN

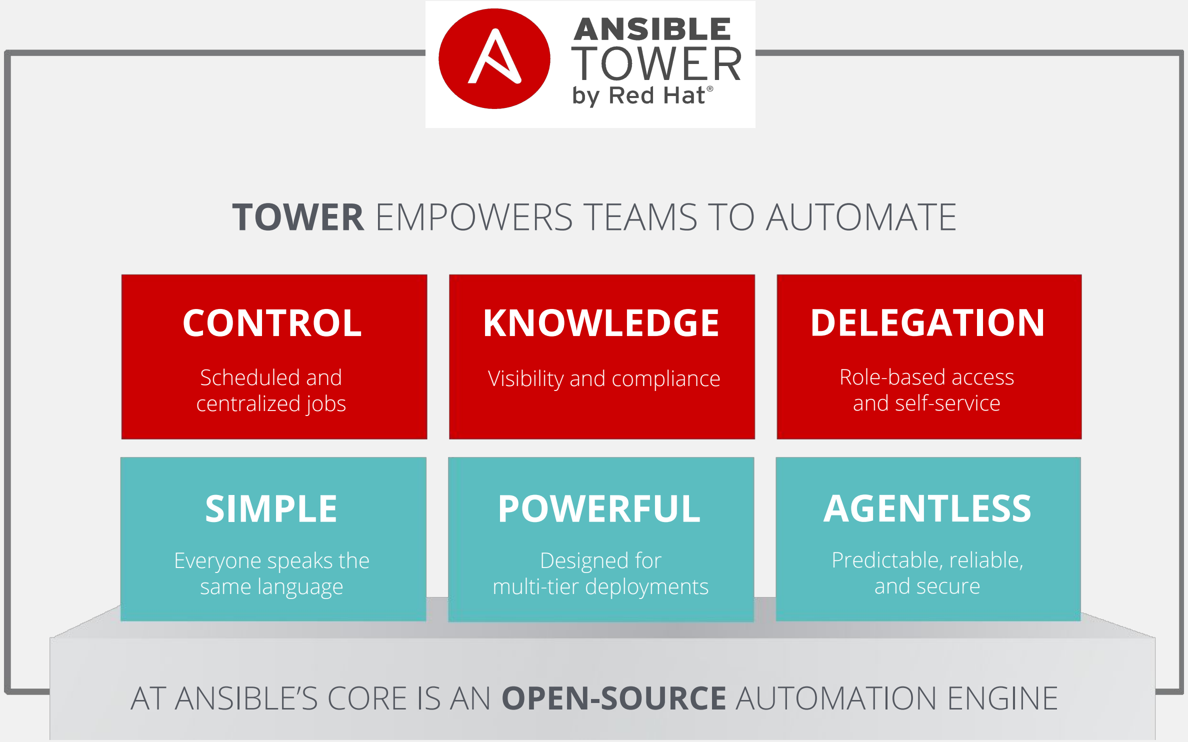
RED HAT® SATELLITE

Select Repositories

Automation - Ansible Engine



Orchestration - Ansible Tower



ANSIBLE TOWER by Red Hat®

TOWER EMPOWERS TEAMS TO AUTOMATE

CONTROL
Scheduled and centralized jobs

KNOWLEDGE
Visibility and compliance

DELEGATION
Role-based access and self-service

SIMPLE
Everyone speaks the same language

POWERFUL
Designed for multi-tier deployments

AGENTLESS
Predictable, reliable, and secure

AT ANSIBLE'S CORE IS AN **OPEN-SOURCE** AUTOMATION ENGINE

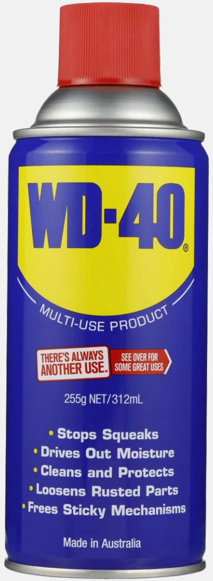
Ansible - Lubrication for technology

RED HAT® ENTERPRISE LINUX®

RED HAT® CLOUDFORMS

RED HAT® SATELLITE

openstack™

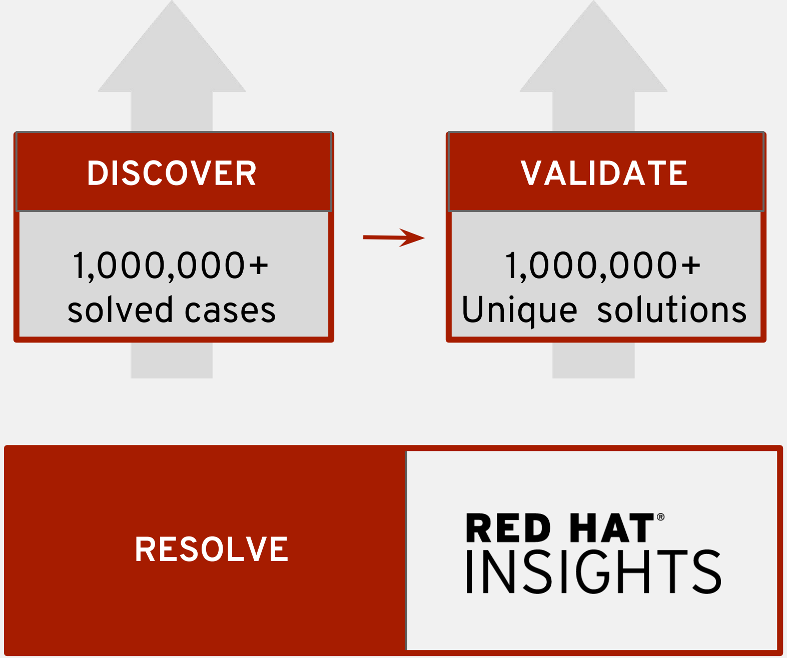


ceph

OPENSHIFT

Red Hat
Identity Manager

Proactive monitoring - What is Insights?



DISCOVER

1,000,000+ solved cases

VALIDATE

1,000,000+ Unique solutions

RESOLVE

RED HAT® INSIGHTS

- Continuous identification of new risks driven by unique industry data
- Based on real-world results from millions of enterprise deployments

> *“ 85% of critical issues raised to Red Hat® support are already known to Red Hat or our partners.”*
>
> – RED HAT GLOBAL SUPPORT SERVICES

Where to start ?

Analyse - Where should I start ?

How hard to standardise ?

Current time consumed

	Easy	Moderate	Hard
High	3	2.5	1.5
Moderate	2.5	2	1
Low	1.5	1	0.5

Normalise, Parameterise - What commonality ?

- Operating System
- Locations
- Environments
- Applications
- Hardening
- Security standards
- Monitoring tools

Supporting infrastructure - What do we need ?

- Single source of truth
- Automation tools
- Access Control
- Auditing
- Content Provision
- 3rd party access
- Collaboration
- Version control

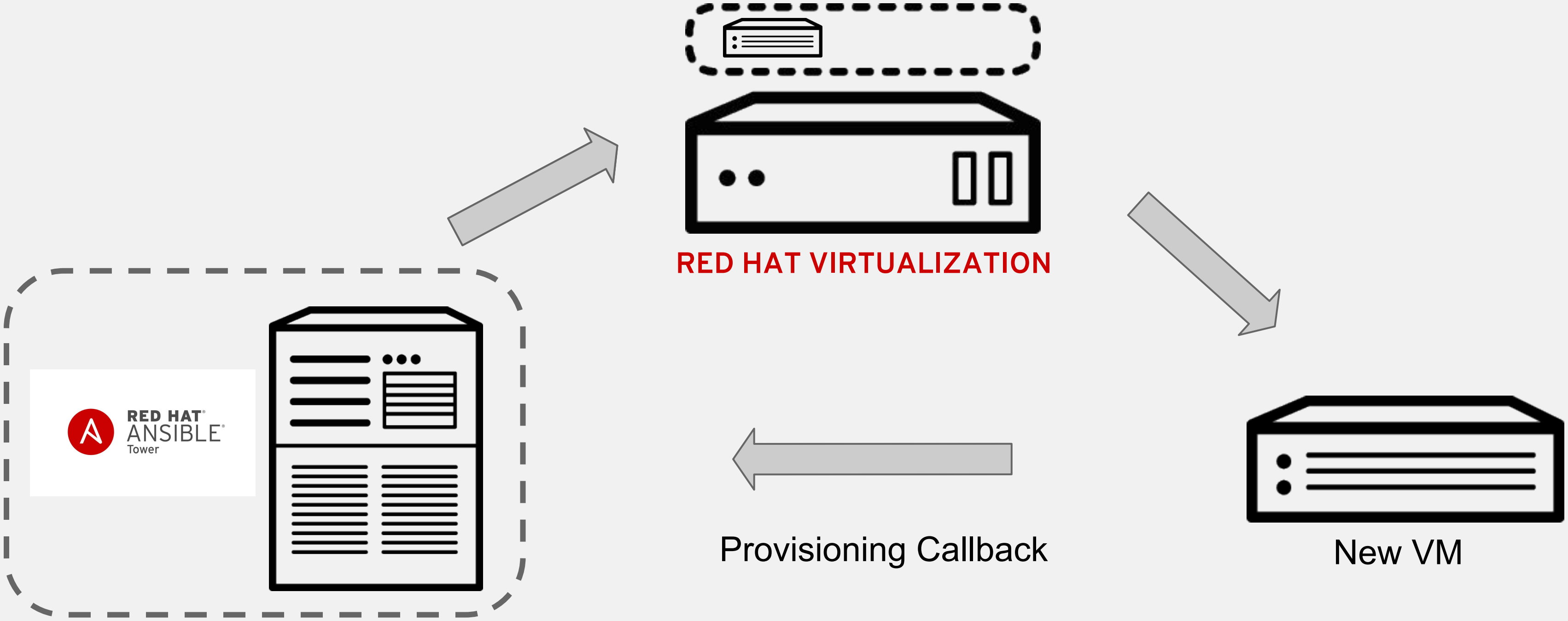
Start Small - Pick a process

- Pick an existing process and document the **desired state.**
- Review the existing process.
- Test the desired state with smoke tests.
- Define your desired state as code.
- Test your toolchain.
- Build confidence.

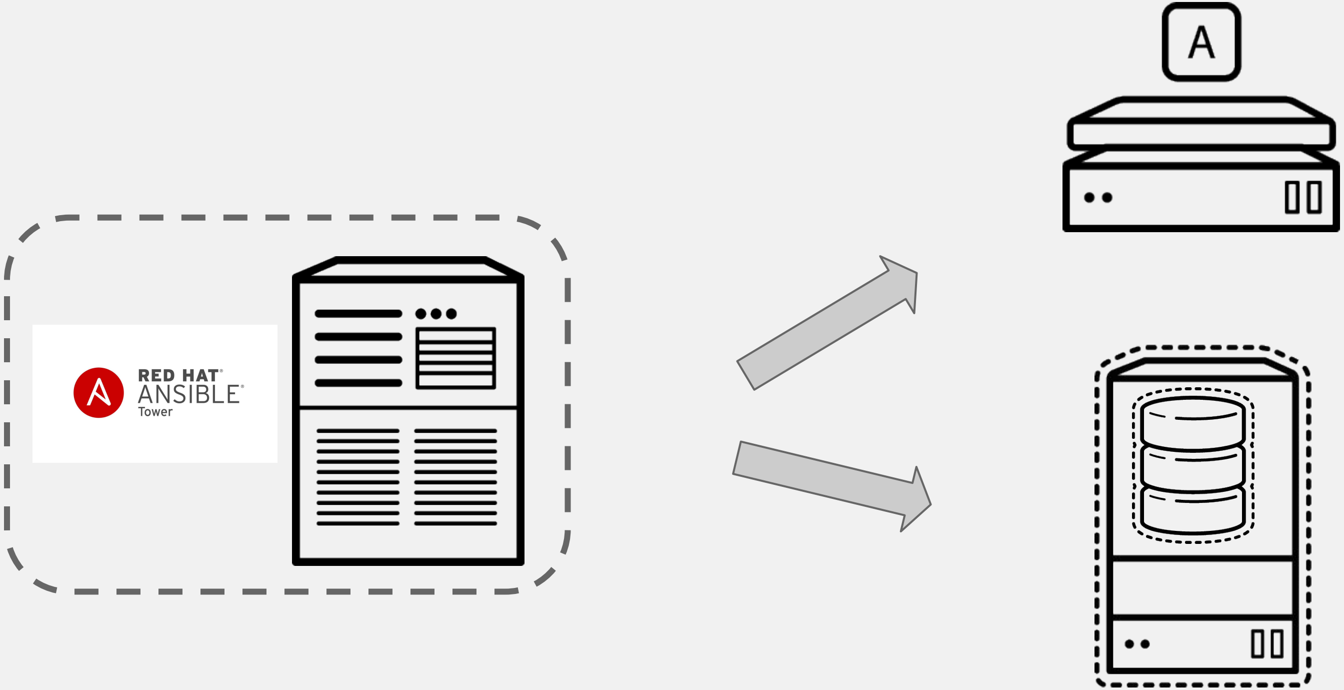
Collaborate - Cross team automation

- Cross team processes
- Abstract
- Delegate
- Orchestrate
- Build confidence in others

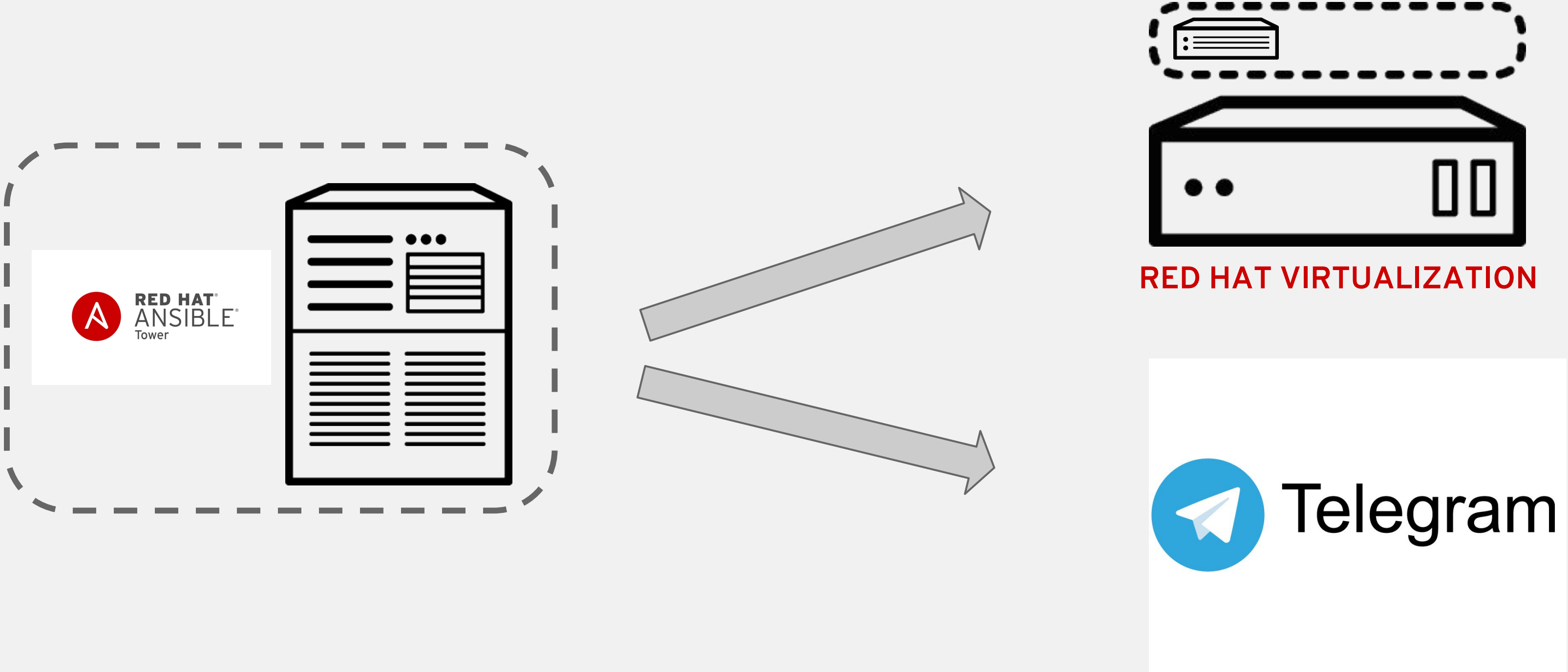
Ansible to build VM's



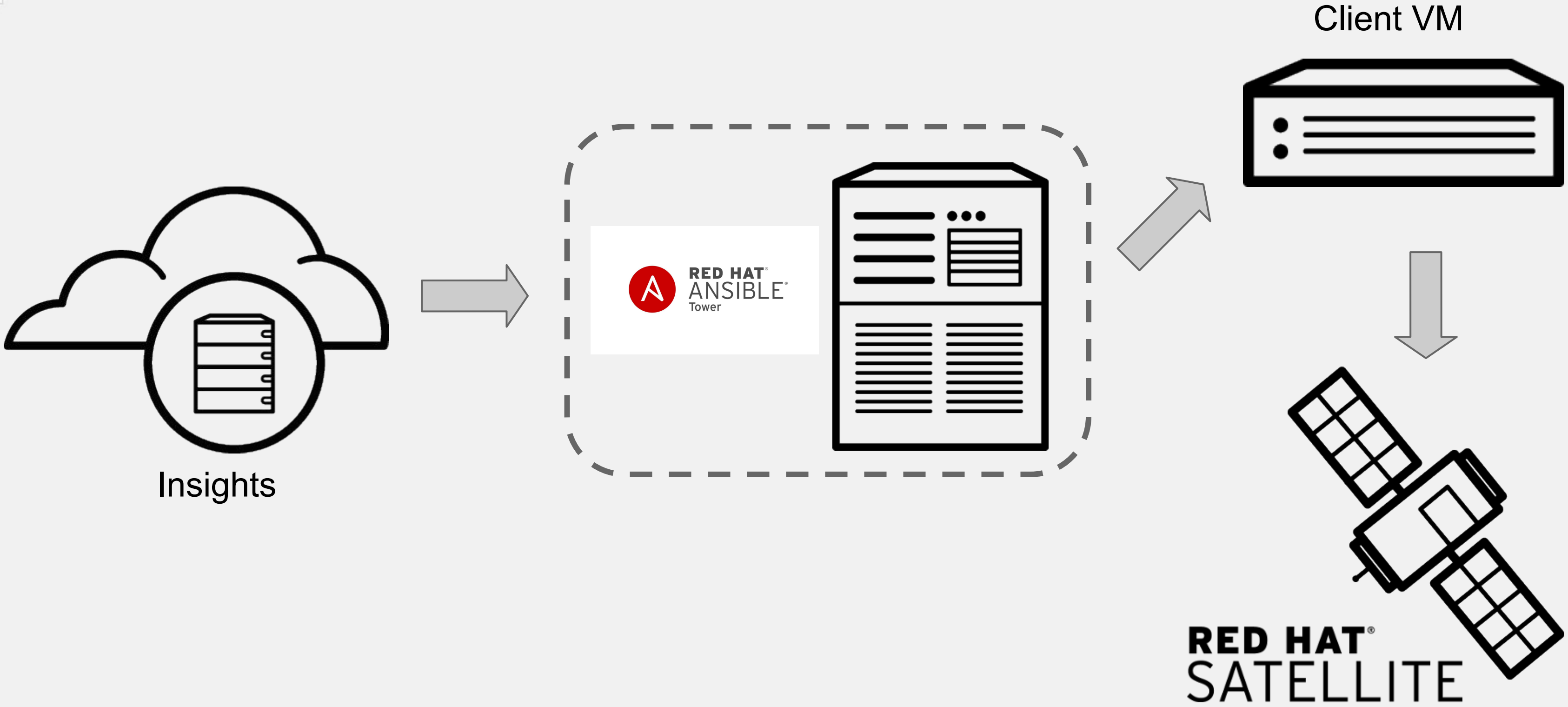
Orchestrate Application deployments



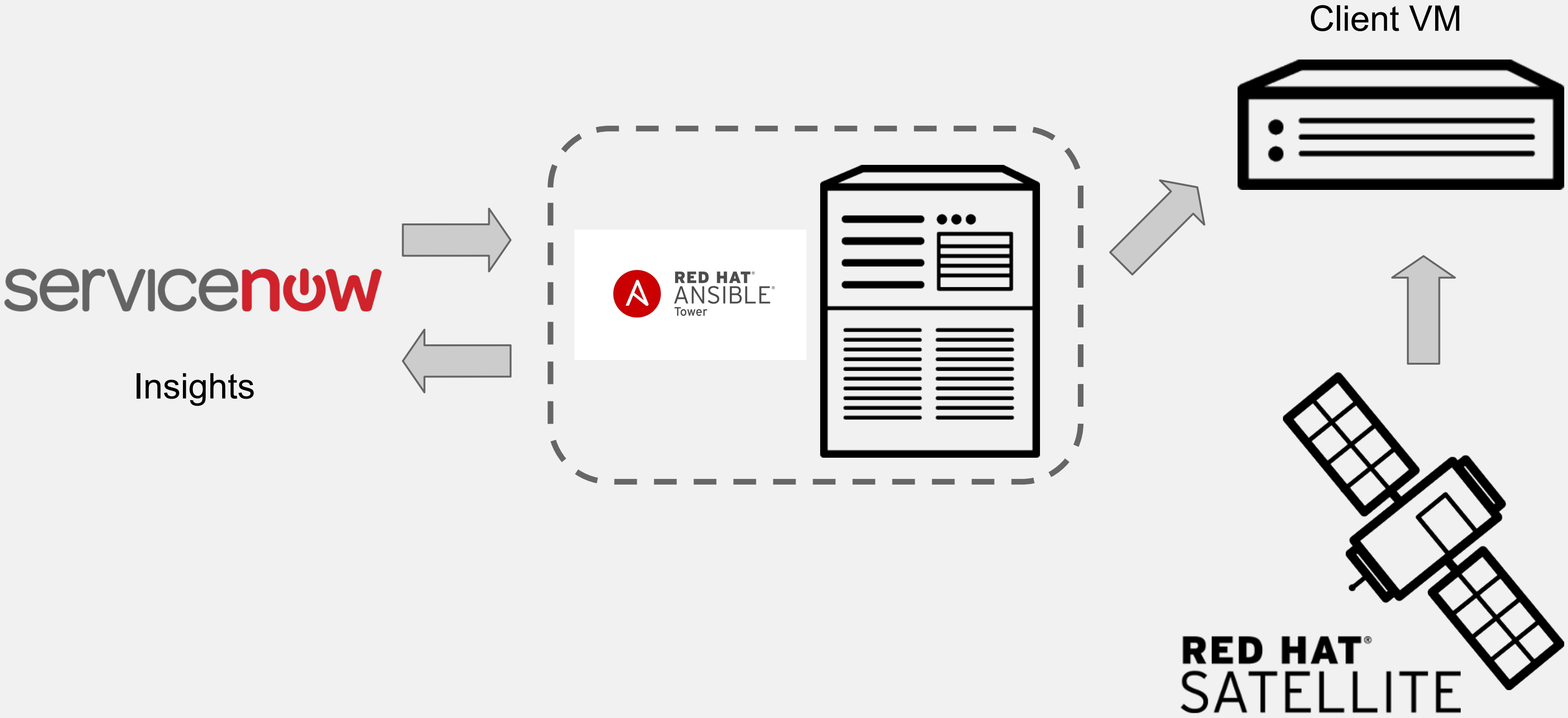
Manage Infrastructure with notifications



Insights + Tower



Patching with Servicenow + Tower



Survive until sunrise with services ?

- Expert Architecture & Consulting
- Open source technology
- Ansible is the common language
- Experience across many verticals
- 25 years of understanding Linux

Credit to the public domain graphics

www.goodfreephotos.com - Zombies
www.youtube.com/watch?v=-KQ2pfIsGRw - Lego video

References

https://github.com/sean797/foreman-ansible-modules - Satellite Ansible Modules
https://www.ansible.com/resources/videos - Ansible video resources
http://100things.wzzrd.com/author/wzzrd/ - Blogs by my colleague Maxim
https://www.youtube.com/watch?v=jTt_yZaaYN0 - Sat6 + Ansible tower integration
https://www.youtube.com/watch?v=mCBhUuxRCgA - Satellite 6.4 + Insights

Thank You