Enterprise Automation: Your Pass to the Fast Lane

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Staff Solutions Architect
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Introduction

Who Am I?
Damien Eversmann

- Developer
- Development Manager
- Systems Engineer
- Enterprise Architect
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Who Am I Really?
Automation Workflows can take your IT Department from the Department of No to the Department of Go. Whether your market is Citizens, Students or Sales, your customers are constantly looking for ways to go to market quicker than ever before. They want a fast lane to get from point A to point B and their initial choice is you. But you currently can only provide toll booths and traffic control. Learn how to give them a fast lane to success before they veer off into the unknown neighborhoods and intersections of Shadow IT. By unifying the silos of IT through automation and the collaboration of workflows, not only will you be in the fast lane, you’ll BE the fast lane in no time.
What we’ll discuss today

- What is Automation?
- What’s it good for?
- Where does collaboration fit in this?
- What is Enterprise Automation?
- Some pitfalls to watch for
- Some wins in the real world
Why Automate?
What is Automation?

Definition of automation

1: the technique of making an apparatus, a process, or a system operate automatically

2: the state of being operated automatically

3: automatically controlled operation of an apparatus, process, or system by mechanical or electronic devices that take the place of human labor

SOURCE: https://www.merriam-webster.com/dictionary/automation
Automation: the technique of making some process operate with the need for minimal or no human intervention
Red Hat Ansible Tower
by the numbers:

94%
Reduction in recovery time following
a security incident

84%
Savings by deploying workloads
to generic systems appliances
using Ansible Tower

67%
Reduction in man hours required
for customer deliveries

Financial summary:

146% ROI on Ansible Tower

<3 MONTHS Payback on Ansible Tower

SOURCE: “The Total Economic Impact™ Of Red Hat Ansible Tower, a June 2018 commissioned study conducted by Forrester Consulting on behalf of Red Hat.”
# Why Automate?

## Cloud
- AWS
- Azure
- Digital Ocean
- Google
- OpenStack
- Rackspace

## Virt & Container
- Docker
- VMware
- RHV
- OpenStack
- OpenShift

## Windows
- ACLs
- Files
- Packages
- IIS
- Regedits
- Shares
- Services
- Configs
- Users
- Domains

## Network
- A10
- Arista
- Aruba
- Cumulus
- Bigswitch
- Cisco
- Dell
- Extreme
- F5
- Lenovo
- MikroTik
- Juniper
- OpenSwitch

## Security
- Checkpoint
- Cisco
- CyberArk
- F5
- Fortinet
- Juniper
- IBM
- Palo Alto
- Snort

## Monitoring
- Dynatrace
- Datadog
- LogicMonitor
- New Relic
- Sensu

## Storage
- Netapp
- Red Hat Storage
- Infinidat

## Operating Systems
- RHEL
- Linux
- Windows

## Devops
- Jira
- GitHub
- Vagrant
- Jenkins
- Slack

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### Cloud Services
- AWS
- Azure
- Digital Ocean
- Google
- OpenStack
- Rackspace

### Virtualization & Containers
- Docker
- VMware
- RHV
- OpenStack
- OpenShift

### Windows Automation
- ACLs
- Files
- Packages
- IIS
- Regedits
- Shares
- Services
- Configs
- Users
- Domains

### Network Automation
- A10
- Arista
- Aruba
- Cumulus
- Bigswitch
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- Extreme
- F5
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### Security Solutions
- Checkpoint
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### Monitoring Tools
- Dynatrace
- Datadog
- LogicMonitor
- New Relic
- Sensu

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### Operating Systems
- RHEL
- Linux
- Windows
Grabbing Headlines is Not Usually a Good Thing

Monotony Breeds Thoughtlessness Breeds Error Breeds Catastrophe

Daniel Barber
@_danbarber

It’s kinda terrifying how much of the internet is down because of the AWS outage right now.

12:30 PM - Feb 28, 2017

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Amazon’s root cause analysis:

“...an authorized S3 team member... executed a command which was intended to remove a small number of servers.... Unfortunately, one of the inputs to the command was entered incorrectly and a larger set of servers was removed than intended.”
Automation is like Automotion

▸ Get from point A to point B in a faster and more reliable fashion (not always 100%)
▸ A repeatable process that is more dependable than what came before (horses)
▸ A tool in a practitioner’s toolbox
The Collaboration Connection
What is Collaboration?

Definition of collaboration

1: to work jointly with others or together especially in an intellectual endeavor

2: to cooperate with or willingly assist an *enemy* of one's country and especially an occupying force

3: to cooperate with an agency or instrumentality with which one is not immediately connected

SOURCE: https://www.merriam-webster.com/dictionary/collaboration

Perhaps they had IT Departments in mind?
The Next Step
Sharing Leads to Collaboration, Collaboration Leads to DevOps, and DevOps Leads to Enlightenment

The main tenets of DevOps are CALMS:

- Culture - the foundation upon which everything is built
- Automation - remove the “toil”
- Lean - smoothly transition work between “work centres”
- Measurement - measure all the things
- Sharing - focus on breaking down silos, sharing knowledge and best practices

Automation Piston

Culture Camshaft

Lean Piston

Measurement Piston

Sharing Piston
DevOps is the Guard Rail of IT

It holds some things together and keeps others apart

- By defining roles thoroughly, everyone knows what everyone is responsible for and nobody steps on anyone’s toes.
- Defined processes and automation keep everything moving smoothly without hiccups and Lean removes all the delays
- Everyone shares best practices to everyone’s benefit
Collaboration is like the Roads and the Rules

- It’s the infrastructure we share
- It’s the laws we abide by
- It’s the unspoken agreement we have with all the other drivers to “do what is right”
- It is the culture of the road and the support of the roadway
Enterprise Automation
What is Enterprise?

Definition of enterprise

1: a project or undertaking that is especially difficult, complicated, or risky

2. a: a unit of economic organization or activity especially : a business organization
   b: a systematic purposeful activity

3: readiness to engage in daring or difficult action : INITIATIVE

It's like M-W had this in mind

SOURCE: https://www.merriam-webster.com/dictionary/enterprise
Enterprise Automation is the Racecar of Automation

Rally, F1, Stock Car, NASCAR, whatever; the analogy is getting thin

- Automation and collaboration to the extreme
- Bringing teams closer together and enabling cross-silo automation
- Achieving end benefits by automating from the start
An Enterprise Automation Journey

Without Automation

- Manual processes take significant time
- Process shifting and handoff is interminably slow

<table>
<thead>
<tr>
<th>Step</th>
<th>Manual Time (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision VM+OS</td>
<td>1:00</td>
</tr>
<tr>
<td>Secure VM+OS</td>
<td>1:00</td>
</tr>
<tr>
<td>Allocate/Attach Storage</td>
<td>1:00</td>
</tr>
<tr>
<td>Configure Network</td>
<td>1:00</td>
</tr>
<tr>
<td>Deploy Application</td>
<td>1:00</td>
</tr>
<tr>
<td>Secure Application</td>
<td>1:00</td>
</tr>
<tr>
<td>Launch Application</td>
<td>0:30</td>
</tr>
</tbody>
</table>

- Total Time Processing: 6:30
- Total Standby Time: 48:00
- Time To Complete Task: 54:30
An Enterprise Automation Journey

With Task Automation

- Fast automated processes means more efficient workers
- Handoff is still the time sink

**Total Time Processing**: 1:20
**Total Standby Time**: 48:00
**Time To Complete Task**: 49:20
An Enterprise Automation Journey

With Enterprise Automation

- Handoff: 0:05
- Handoff: 0:05
- Handoff: 0:05
- Handoff: 0:05
- Handoff: 0:05
- Handoff: 0:05

Provision VM+OS
Automated time: 0:15

Secure VM+OS
Automated time: 0:10

Allocate/Attach Storage
Automated time: 0:15

Configure Network
Automated time: 0:10

Deploy Application
Automated time: 0:15

Secure Application
Automated time: 0:10

Launch Application
Automated time: 0:05

Total Time Processing 1:20
Total Standby Time 0:30
Time To Complete Task 1:50

- Repeated process happen automatically and in quick succession
- Employees free to focus on larger more important tasks
Ansible Tower is a UI and RESTful API allowing you to scale IT automation, manage complex deployments and speed productivity.

- Role-based access control
- Deploy entire applications with push-button deployment access
- All automations are centrally logged
- Powerful workflows match your IT processes

Enable the Masses

Anybody can Automate
Ansible Tower’s multi-playbook workflows chain any number of playbooks, regardless of whether they use different inventories, run as different users, run at once or utilize different credentials.
Enterprise Automation is like Self-Driving Smart Cars

- More like a world where **ALL** of the cars are smart and work together
- All of the fun, little of the work
- It keeps the eyes on the road and the hands on the wheel for you
- Makes sure only the right people ride but enables them to work wonders
Potholes on the Road to Enterprise Automation
Off the Beaten Path

Things to avoid

There are a few potholes or speed bumps you might want to pay attention for on your road trip to Enterprise Automation. Here are a few:

▸ Not everyone shares (or even knows) the vision
▸ A tendency to return to silos and kingdom building
▸ Fear of automation
▸ A lack of support from above
Enterprise Automation Needs to be a Shared Vision

- Enterprise Automation is a culture change.
- When not everyone shares the vision, the culture gets fractured.
- Once that happens, disconnections occur and latency and error creep back in.
- If people can’t trust the tool, they won’t use the tool.
- Like Tesla “Autopilot”, everyone needs to be on the same page for how it works or you’re due for an abrupt stop from 87 MPH.

Everyone Wants Their Own Kingdom

- Enterprise Automation is a culture of openness and sharing.
- Kingdoms are built with walls and wars.
- The two do not match and there is no place for battlements and barricades in Enterprise Automation.
- The only towers are Ansible Tower.
Day One: Automation; Day Two: Layoffs
Automation Alone Isn’t Enough; Domain Experts are Vital
Bottom Up or Top Down?

- The question is either/or but the answer is YES.
- In order for Enterprise Automation to be a success, it must have acceptance by all and support from the top reaches of the organization.
- Without an organization-wide direction, true Enterprise Automation will fail.
Whether a simple flat tire, a cracked engine block, or a multi-car pile up, not implementing Enterprise Automation can be enough to keep you off the road. There are many resources out there from learning programs to professional services that can help you get started.

Red Hat can either provide you with the tools to equip your own garage or bring in our top notch pit crew to get your Enterprise Automation engines running smoothly.
The Winner’s Circle
“Adopting Red Hat Ansible Automation has not only changed how our networks are managed, but also sparked a cultural transformation within our organization. By putting automation at the forefront of our strategy and not as an afterthought, we’ve been able to scale it in ways we did not know possible. Our engineers are now constantly looking for creative ways to solve their problems using Ansible Playbooks.”

Bart Dworak
Software engineering manager
Infrastructure and Operations, Network
Microsoft

“For our customers to more quickly and effectively deliver necessary services to healthcare professionals and their patients, prolonged system and service downtime is not an option. With Red Hat Ansible Automation we have been able to automate and streamline management of our infrastructure, allowing us to dramatically cut issue resolution time, reduce downtime and ultimately improve our customer satisfaction.”

Michael Perzel
Principal DevOps engineer, Surescripts

SOURCE:
“Our operations are IT-intensive due to the sophisticated market model, the quantity of data, multiple communication links and the requirement to operate the market on a 24-hour basis every day. With Red Hat technologies, we have been able to digitally transform our infrastructure, preparing us for future growth in the market as well as enabling us to scale the NEMS System upwards and outwards easily as needed.”

Lau Chee Kiong
Senior vice president, Technology
Energy Market Company

n-customer-systems-worldwide
“When looking at automation tools for Reserve Bank of New Zealand, we knew that the system would require high availability and reliable architecture with geographically separated redundancy and a high level of security and integrity. Ultimately, Red Hat Ansible Automation was chosen for its orchestration capabilities as well as its radical simplicity and efficiency for multi-tier enterprise level deployments.”

Joseph Tejal
Systems engineer, Datacom
Thank You!

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