



A JOURNEY TO DEVOPS IN THE BRITISH ARMY

Lessons Learnt for Successful Automation

Aidan Beeson
Linux Architect (Contractor)
May 2018





<https://www.flickr.com/photos/uk-forces-afghanistan>

The plan...



Information Application Services (IAS)



Military



Civil Servants



IT Contractors

100+ Staff



200+ Services



3 Security
Domains



Army, Navy
& Air Force



~10



~300,000



Training Recruits



Families



Injured



Regular



Reserves



Veterans



Public Cloud



Official Sensitive
Private Cloud



Secret
Private Cloud

Army Hosting Environments

Virtualization:

vmware®

Operating Systems:

 **redhat.**
ENTERPRISE
LINUX®


Windows Server

Development:

ORACLE®
APPLICATION EXPRESS

 Microsoft®
.NET



HR



Geo
Mapping



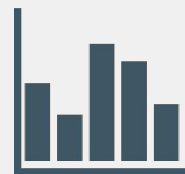
Training



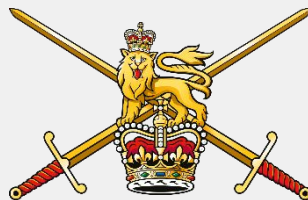
CRM



ERP



Analytics



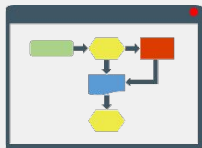
ARMY Hosting Environment



Secure
Comms



Legal



Planning



Logistics



Data
Warehouse



Accounting

MY JOURNEY TO “DEVOPS”



Year 2000 – “UNICOM” Project

UNICOM Server



Lovely Screen

All Mod-Cons

Very Beige

Typical UNICOM System Administrator

- Soldier in the Army
- Not necessarily technical
- Part time Sys-Admin



"Heather"

You also
have to
deal with
situations
with an
“Army”
twist to
them.



Tip #1:

KEEP IT SIMPLE
(for the end user)

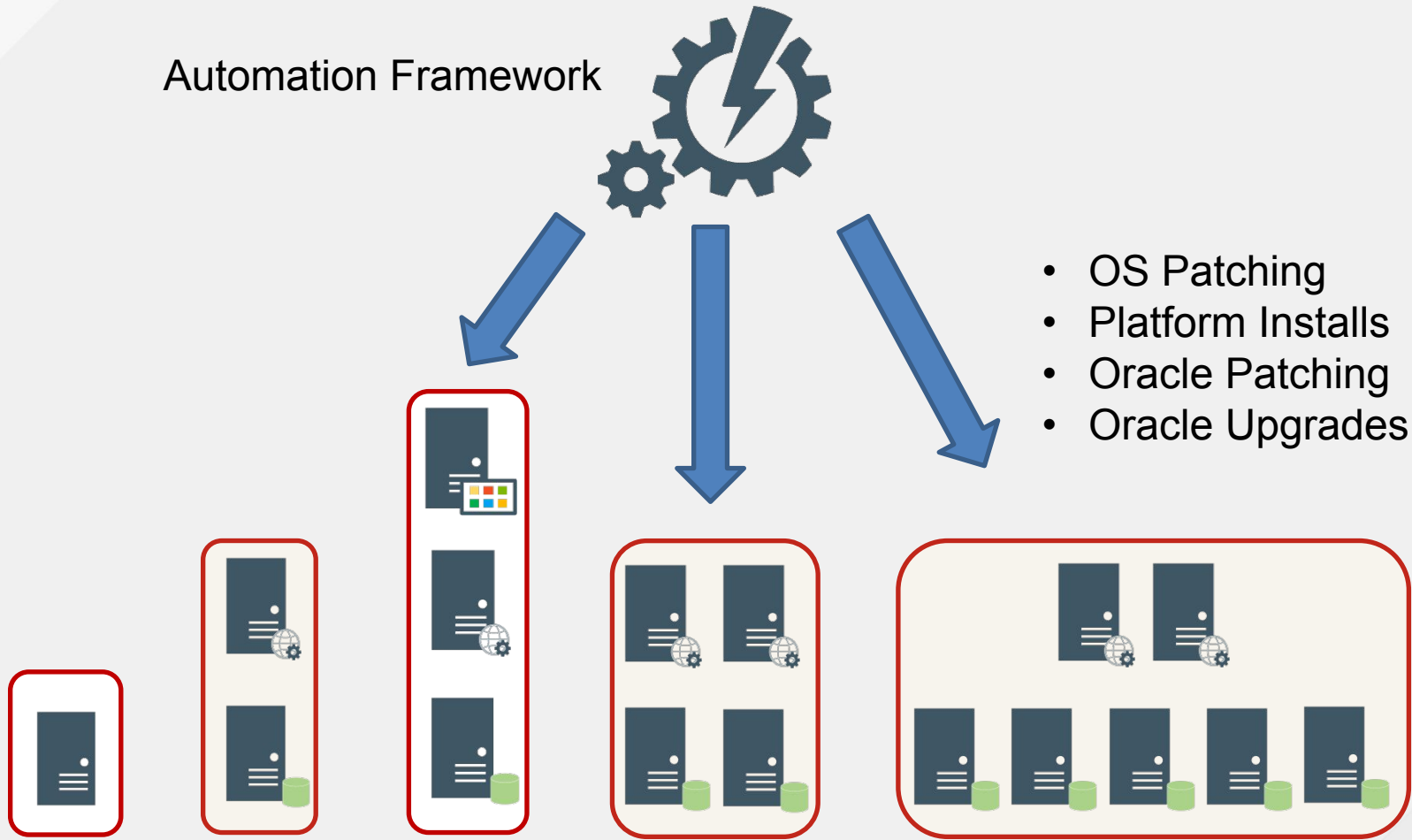


Complexity + Stress
= Misunderstandings



Year 2015 – Army HQ DevOps

Automation Framework



IAS 'DEVOPS' EXPECTATIONS



Empowering users (developers and operations)



Reducing the lead time to get platforms up and running



Removing the dependency on lots of different people to build a platform



Enabling consistency across domains



Reducing system downtime



Simplifying processes and, therefore, documentation

Tip #2:

LEGACY CAN BE “DEVOPS’d”
(Don’t throw away existing code or platforms)

TOP SECRET

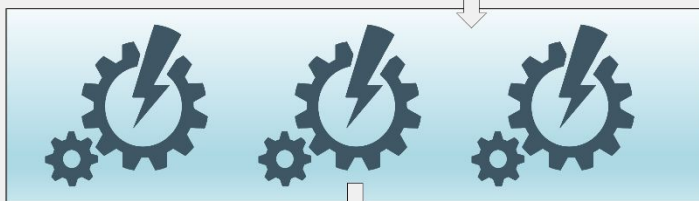
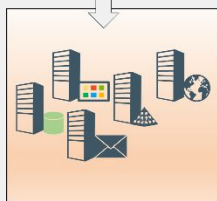
THE DEVOPS PLAN

TOP SECRET

Users interact
with Ansible.



Ansible layer
interacts with
existing scripts
and extended to
fully automate
jobs.



DevOps utopia!

Started with
"pure" Ansible



RED HAT®
ANSIBLE®
Automation

Quickly decided we
needed a GUI



RED HAT®
ANSIBLE®
Tower

Tip #3:

USE ANSIBLE TOWER FROM THE START
(If you think you'll need a GUI)

Supported by
Red Hat

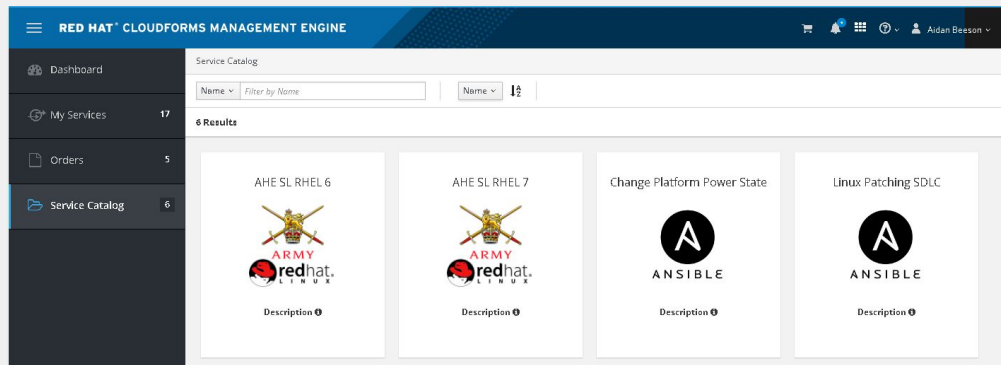


Open Source!

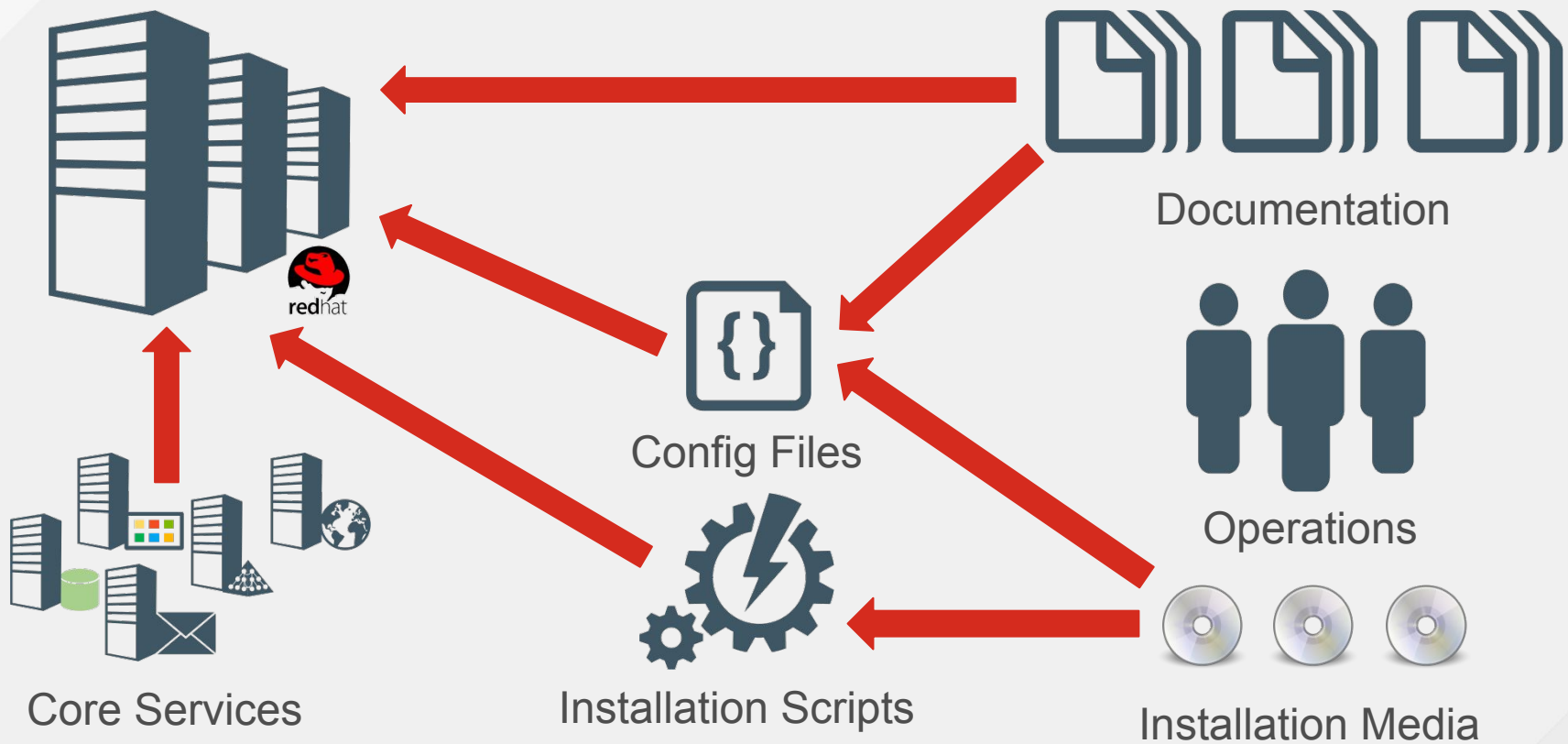


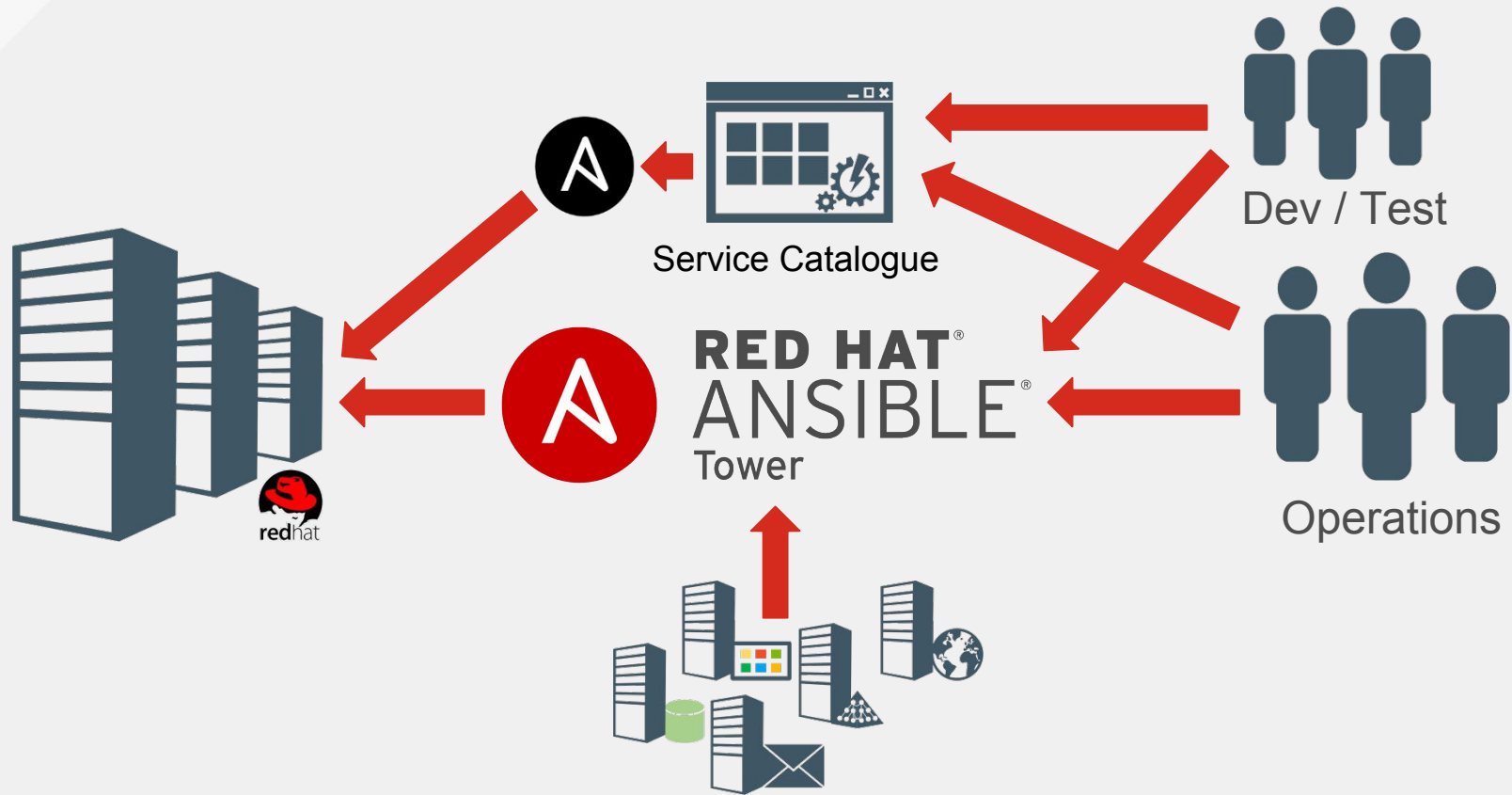
<https://www.ansible.com/products/tower>

<https://github.com/ansible/awx>

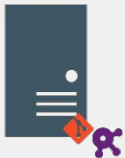


CloudForms (or "ManageIQ"
for Open Source version)

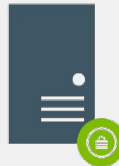




KEY COMPONENTS



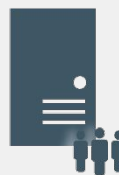
SCM – *Playbook Code*



Password Management



Hypervisor – *VM Control*



MatterMost – *Job Status Info*



Artefact Server – *Software ISOs*



Service Catalogue –
Virtual Hardware provisioning

Tip #4:

ANSIBLE TOWERCLI
(Because we love the command line)

Our Ansible Tower installation and configuration is

100%

Software Defined

...Software Installation, Projects, Inventories,
Job Templates, Access Controls, Surveys, Credentials...

Tip #5:

TOWER JOB SURVEYS (Keeping It Simple)

JOB SURVEYS

LAUNCH JOB | LINUX OCP APEX UPGRADE SDLC-DEV

INVENTORY SURVEY

*APEX VERSION

The target APEX version

5.1.4

*TARGET DATABASES

Databases to be upgraded

★ ALL

INVENTORY CREDENTIAL
SDLC-DEV TDO_OCP4_NODES DLC-DEV

CANCEL

LAUNCH

LAUNCH JOB | LINUX OCP CPU UPDATES SDLC-DEV

INVENTORY

SURVEY

*CPU LEVEL

CPU Update Level

Latest

Latest

JAN_2018

JUL_2017

JAN_2017

INVENTORY CREDENTIAL
SDLC-DEV TDO_OCP4_NODES DLC-DEV

CANCEL

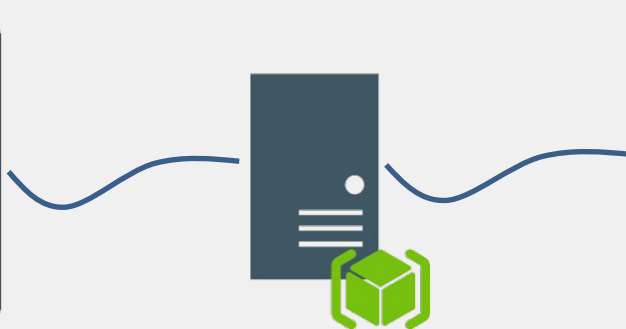
LAUNCH

Drop downs or Pick Lists limit what users can select

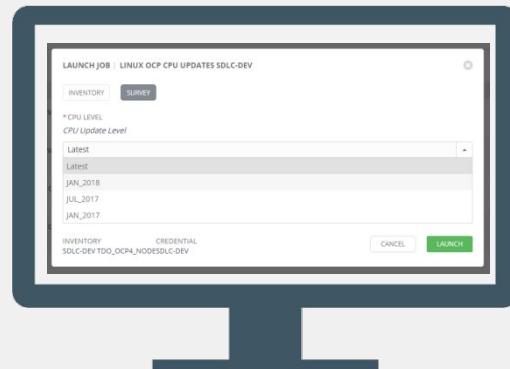
AUTOMATIC SURVEY REFRESH



User promotes a release
using a Tower job.



Playbook scans the
artefact server for
changes



Survey is regenerated
with new options against
all relevant job templates

MISSION DEBRIEF

KEY TAKE-AWAYS



Keep It Simple



Recycle existing automation code



Decide early on if you need a GUI



Automate GUI configuration



Give users the power, but retain control

ACHIEVEMENTS



All major new Linux based software deployed using Tower



Zero patch related downtime during working hours



Development, Test, Pre-Production and Production all aligned



Documentation complexity reduced



Happy Users!

“I’m seriously impressed at how quickly and smoothly you guys are able to get the Oracle CPUs rolled out across all the environments”

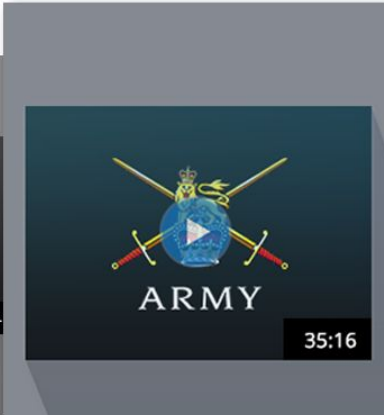
IAS Lead DBA

“‘*Legacy*’ no longer refers to the platform itself, but the way you deliver and maintain the platform”



Applying Ansible at HSBC
HSBC

[PRESENTATION DETAILS](#)



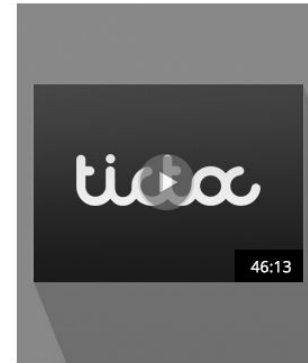
Efficiency and Effectiveness
through DevOps
British Army

[PRESENTATION DETAILS](#)



Applying Ansible at Siemens
Siemens

[PRESENTATION DETAILS](#)



Lessons Learned from a Year
with Ansible
tictoc digital

[PRESENTATION DETAILS](#)

<https://www.ansible.com/videos-ansiblefest-london-2017>



THANK YOU



plus.google.com/+RedHat



facebook.com/redhatinc



linkedin.com/company/red-hat



twitter.com/RedHat



youtube.com/user/RedHatVideos