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# NetDevOps & Automation

Why is it critical to the future of your network ?

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# NetDevOps

Just another buzzword ?

**Devops** - Developers have to think about ongoing maintenance and operations as part of the software lifecycle.

**DevSecOps** - Developers are expected to think about security as part of the application lifecycle.

**GitOps** - Developers and infrastructure teams use DevOps best practices to deliver infrastructure.

**NetDevOps** - Network connectivity becomes part of the application lifecycle using devops best practices.

# A few observations

Tell me what you want ?

- Business wants to drive more value from existing customers
- Business wants to attract new customers
- Business wants to ensure customers get great service
- Business wants to increase customer satisfaction



# A few observations

## How do we actually deliver

- Business must deliver new innovative services to customers.
- Those services need to be reliable and responsive
- Business needs new exciting applications to drive those services. They need to be agile, so the business can change them at a moments notice.
- We need to make sure during peak times we don't turn customers away. Application agility.

Everyone has an opinion

All we need to do is connect them all

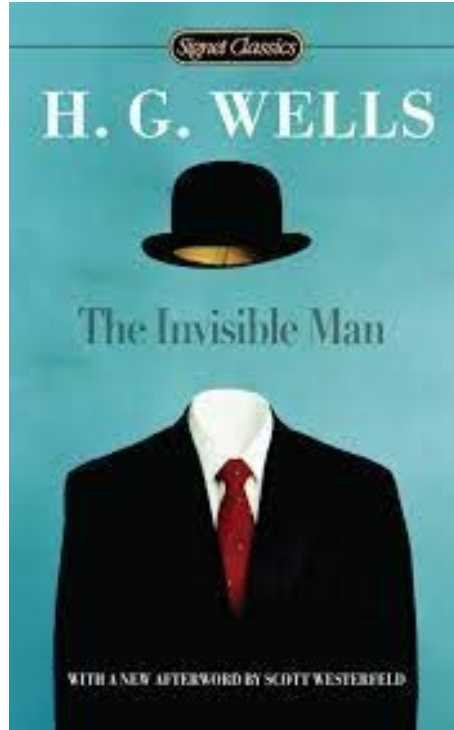


OPENSIFT



# Where does networking fit in ?

Tell me what you want ?



In case it was ever in doubt

For any Slashdot readers - Circa 2006

They want to deliver vast amounts of information over the Internet. And again, the Internet is not something that you just dump something on. It's not a big truck. **It's a series of tubes.**





# Greenfield ? Brownfield ?

Tell me what you want ?



## Questions that aren't asked early enough

Tell me what you want ?

**“Connectivity back to our on prem data is probably quite complex. How will we make sure we can still scale our application ?”**

**“How do we make sure we can automatically decommission the routes, services and firewalls when we decommission the service ?”**

**“What would the impact be on the users of our app when we apply our cloud exit strategy, and are forced to move clouds in X days as mandated by the regulator.”**

**“How do ensure the network infrastructure can automatically allow grow to use new services on prem, as well as in the cloud ?”**

Why does it take so long to deploy our new service ?

Who do you blame ?



Don't blame it on the sunshine

Don't blame it on the Moonlight



**Blame it on the network !**



# A reality check

Tell me what you want ?

- An application alone is not enough to deliver a service into production.
- New services can only be delivered as fast as the slowest delivery step
- Not everything can run on the same cluster
- Not everything can run in the same cloud, address, country, region, continent
- Networks are **really** important

# So let's give developers the access they need

What could go wrong ?

“Today, network changes are normally large and complex, changes are seen as high risk, avoided if possible and subjected to rigorous, costly, and lengthy vetting processes. Even so, problems still occur. Human error and/or lack of the correct verification still creep in. All of which results in, what some call a "culture of fear" mentality around the network and in turn, network changes.[1]”

# So let's give developers the access they need

What could go wrong ?



The screenshot shows the top portion of a news article on the website 'THE INDEPENDENT'. The navigation bar includes links for NEWS, SPORT, VOICES, CULTURE, LIFESTYLE, TRAVEL, PREMIUM, and MORE. A 'Visit The USA' button is visible on the right. The article is categorized under 'Tech' and has the headline 'European mobile traffic mysteriously routed through China for two hours'. A sub-headline reads 'Any unencrypted data could have been viewed or even edited by malicious actors'. The author is 'Anthony Cuthbertson' and the article was published on 'Tuesday 11 June 2019 16:52 BST'. There is a 'Comments' link. The main image features a blurred Chinese flag in the background and a computer monitor in the foreground displaying lines of green code on a black background.

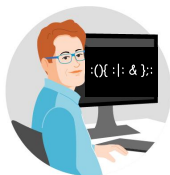
# So let's bring the network teams into the fold

## Abstraction & Pipelines



Network  
Admin

Responsible for abstracting common tasks as code



Developer / SRE

Responsible for running one or more pipelines

# The balance

I can't get no..... abstraction (except, yes, I can and should).

- Define infrastructure as code
- Deploy infrastructure based on dev environment.
- Deal with capabilities, not features.
- Break the dependency on Network Teams
- Provide a standard set of functions
- Cross vendor workflows
- Retain access control
- Self service via API
- Auditing / logging / debugging
- Dependency management



Developer / SRE



Network Admin

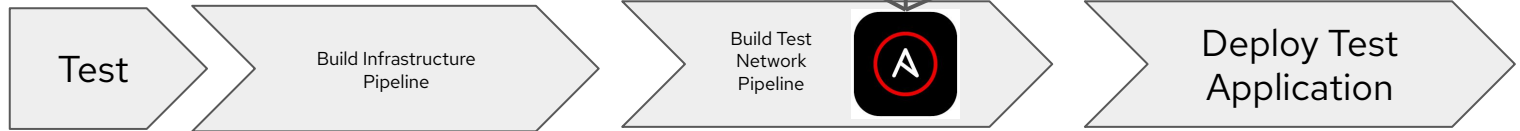


# Developer view

## Abstraction & Pipelines



Network Admin



Developer



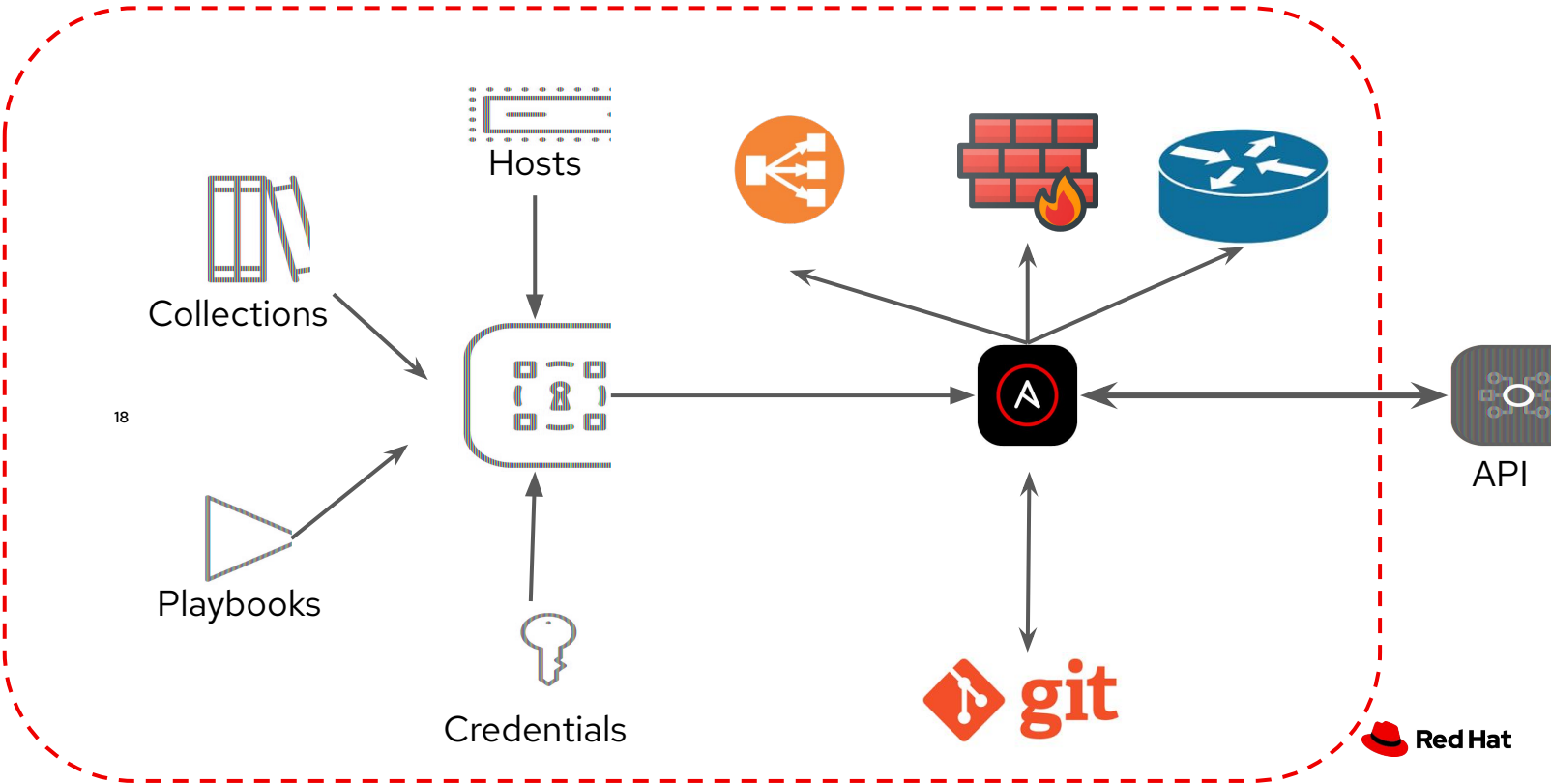
Test Branch



Network Admin

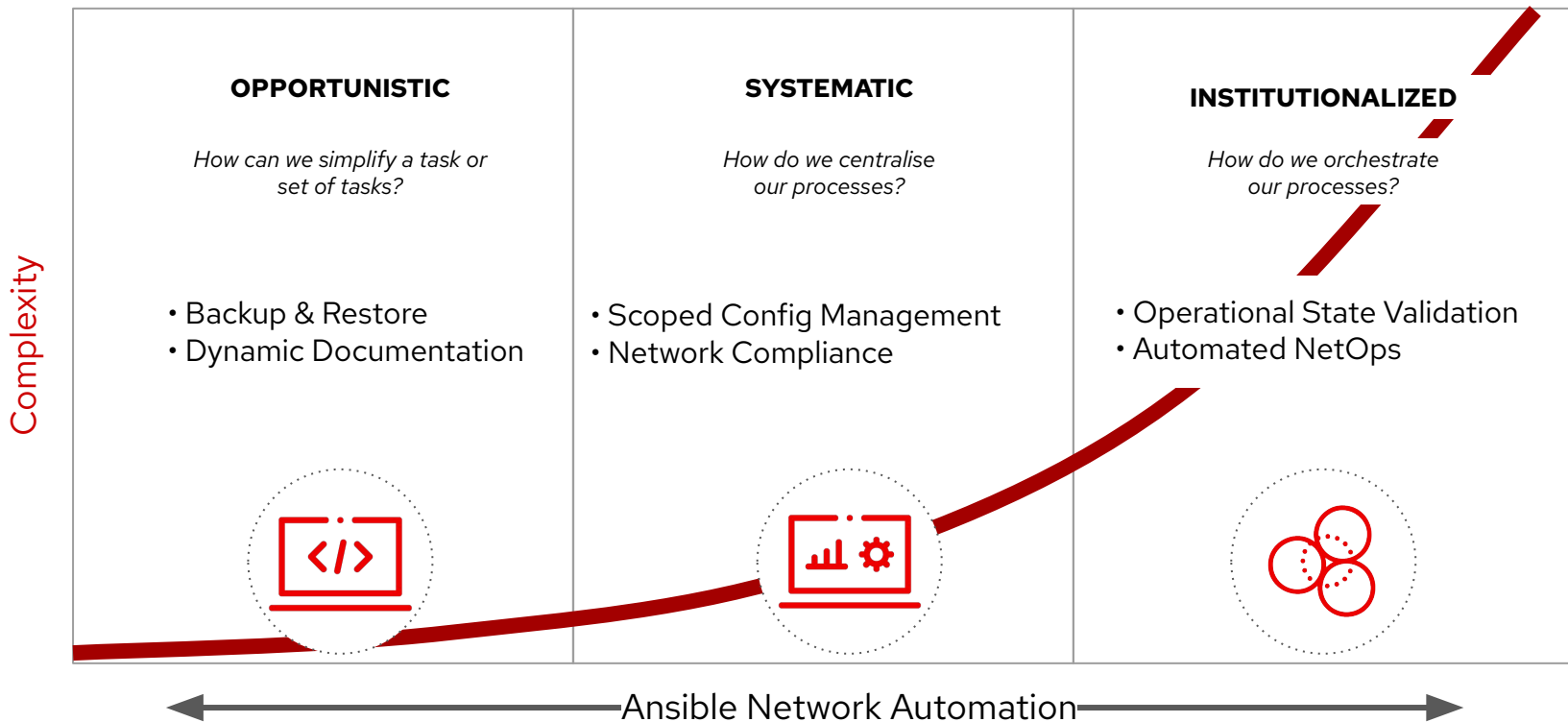
# Network view

Abstraction & Pipelines



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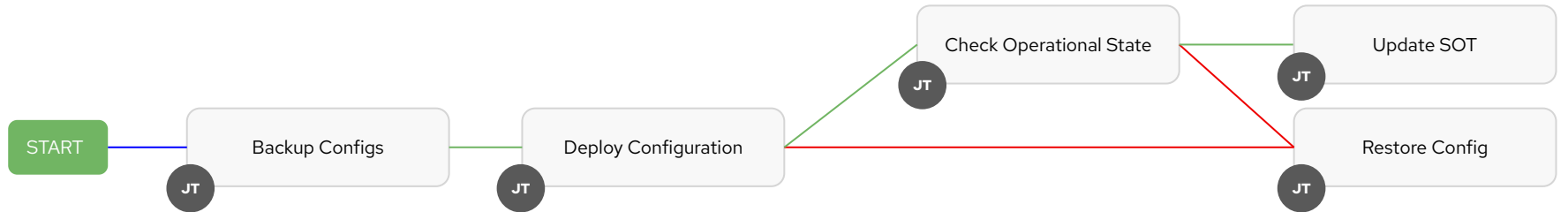
# Network Automation Journey



# Ansible Automation Platform

Using workflows to enhance your automation

## WORKFLOW VISUALIZER | Operational State Workflow



CLOSE

SAVE

# Learning resources

Continue your automation journey with Red Hat® Ansible® Network Automation



**Red Hat**  
Ansible Automation  
Platform



**Networking workshop**

<https://aap2.demoredhat.com>



**E-Books**

Part 1: Modernize Your Network with Red Hat

[red.ht/network-book1](https://red.ht/network-book1)

Part 2: Automate Your Network with Red Hat

[red.ht/network-book2](https://red.ht/network-book2)



**Red Hat Certification**

**Ansible for Network Automation**

**(DO457)**

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