

# INTENTIONET

**your network,  
exactly as you intended.**

[www.intentionet.com](http://www.intentionet.com)

# Intentionet: Who are we?

## Company

Founded: 2015

Headquarters: Seattle, WA

Funding: NSF, True Ventures, USAF



## Mission

Eliminate network outages and breaches

# What is Batfish?



A ***pre-deployment change validation*** solution

Started as a Microsoft Research project in 2012

- Open sourced in 2014 (Apache 2.0)
- Contributors from Intentionet, BBN, Colgate University, Microsoft, Princeton, UCLA, USC, ...

batfish / batfish

<> Code ⓘ Issues 116 🔄 Pull requests 9 📖 Wiki 📊 Insights

Batfish is a network configuration analysis tool that can find bugs and guarantee the network configurations. It enables network engineers to rapidly and safely evolve the security breaches. <http://www.batfish.org>

network configuration configuration-parser configuration-analysis network-verification

📦 6,295 commits

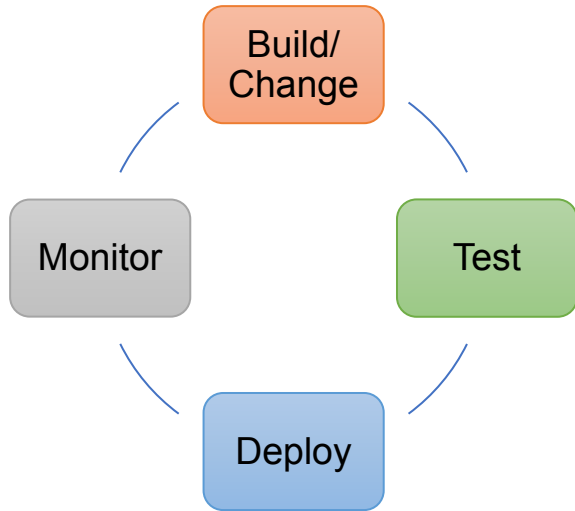
🌿 87 branches

👤 52 r

Used by many Fortune 500 companies

# Why Batfish?

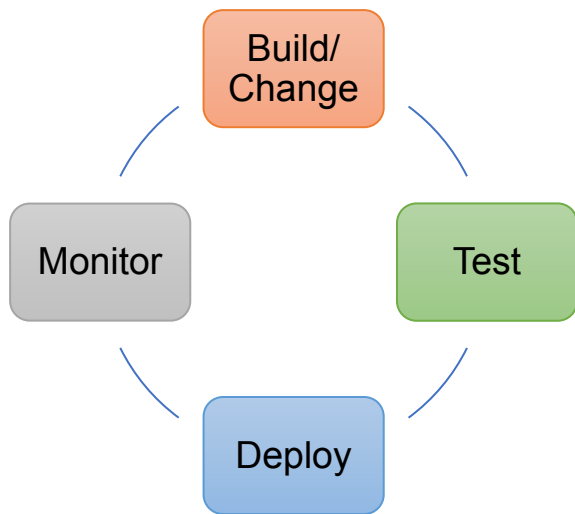
Testing is the weak link in network lifecycle



Emulation cannot mimic production networks  
Custom scripts provide limited test coverage

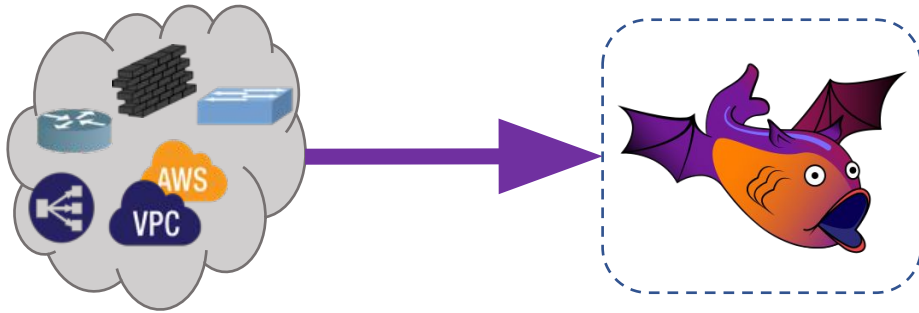
# Why Batfish?

Testing is the weak link in network lifecycle



**Batfish provides exhaustive test coverage at production scale**

# How it works?



# How it works?

CUMULUS



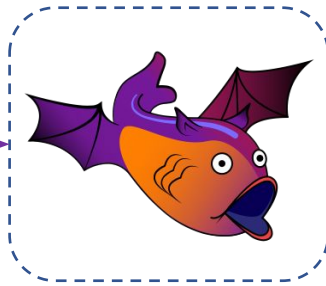
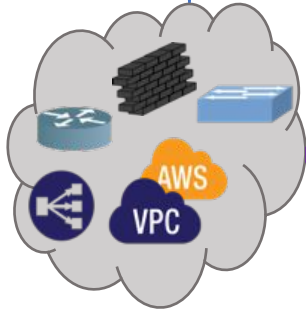
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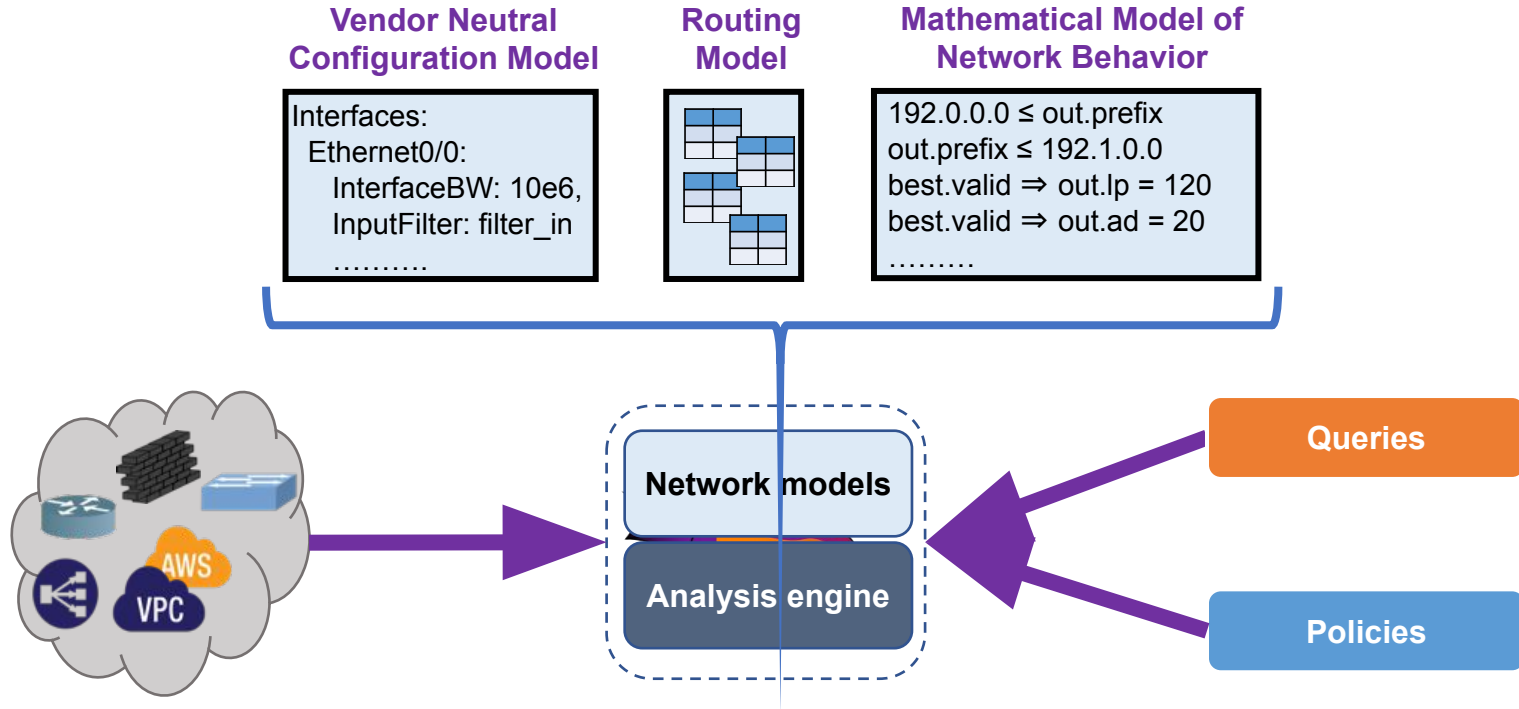
aws

ARISTA

*And many  
more...*

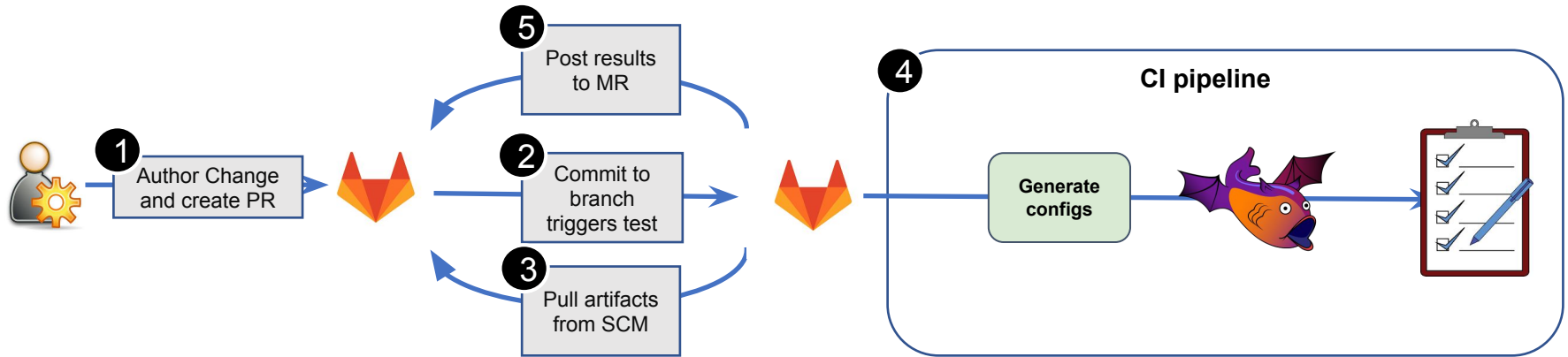


# How it works?





# DEMO



# Batfish policies and queries

## Configuration Audit



- Are all devices compliant with site standards?
- Are all protocol sessions (BGP, IPsec, MLAG, ...) compatible?

## Route and Forwarding analysis



- Is my network redundant?
- What happens if I change this route policy?

## Comprehensive Firewall/ACL analysis



- Is my firewall protecting sensitive services?
- What is the impact of this ACL change?

## Comprehensive Reachability analysis



- Can any flow violate cross-site isolation?
- Is the DNS server accessible from anywhere?

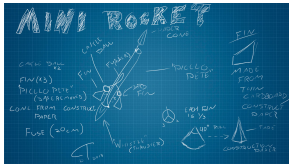
# How organizations are using Batfish



## CI/CD: Ensure policy compliance *before* deployment




## Change validation: Ensure correctness of changes

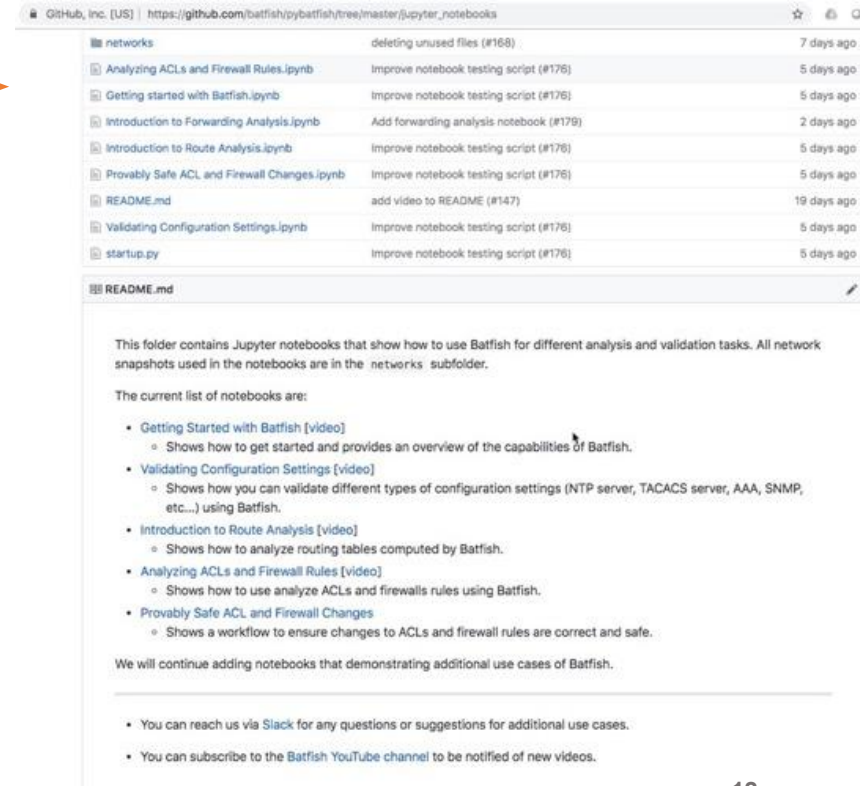


## Design validation: Ensure that design has desired impact



# Getting Started with Batfish

- Jupyter Notebooks 
  - [https://www.github.com/batfish/pybatfish/tree/master/jupyter\\_notebooks](https://www.github.com/batfish/pybatfish/tree/master/jupyter_notebooks)
- Videos
  - <https://www.youtube.com/c/intentionet>
- Slack
  - [Join Batfish Slack!](#)



GitHub, Inc. [US] | [https://github.com/batfish/pybatfish/tree/master/jupyter\\_notebooks](https://github.com/batfish/pybatfish/tree/master/jupyter_notebooks)

File/Folder	Description	Updated
networks	deleting unused files (#168)	7 days ago
Analyzing ACLs and Firewall Rules.ipynb	Improve notebook testing script (#176)	5 days ago
Getting started with Batfish.ipynb	Improve notebook testing script (#176)	5 days ago
Introduction to Forwarding Analysis.ipynb	Add forwarding analysis notebook (#179)	2 days ago
Introduction to Route Analysis.ipynb	Improve notebook testing script (#176)	5 days ago
Provably Safe ACL and Firewall Changes.ipynb	Improve notebook testing script (#176)	5 days ago
README.md	add video to README (#147)	19 days ago
Validating Configuration Settings.ipynb	Improve notebook testing script (#176)	5 days ago
startup.py	Improve notebook testing script (#176)	5 days ago

### README.md

This folder contains Jupyter notebooks that show how to use Batfish for different analysis and validation tasks. All network snapshots used in the notebooks are in the `networks` subfolder.

The current list of notebooks are:

- [Getting Started with Batfish \[video\]](#)
  - Shows how to get started and provides an overview of the capabilities of Batfish.
- [Validating Configuration Settings \[video\]](#)
  - Shows how you can validate different types of configuration settings (NTP server, TACACS server, AAA, SNMP, etc...) using Batfish.
- [Introduction to Route Analysis \[video\]](#)
  - Shows how to analyze routing tables computed by Batfish.
- [Analyzing ACLs and Firewall Rules \[video\]](#)
  - Shows how to use analyze ACLs and firewalls rules using Batfish.
- [Provably Safe ACL and Firewall Changes](#)
  - Shows a workflow to ensure changes to ACLs and firewall rules are correct and safe.

We will continue adding notebooks that demonstrating additional use cases of Batfish.

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- You can reach us via [Slack](#) for any questions or suggestions for additional use cases.
- You can subscribe to the [Batfish YouTube channel](#) to be notified of new videos.

# Summary

**Build a secure and reliable network**

**Know before you deploy with Batfish**

# INTENTIONET

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