



ANITA B.ORG 2024  
GRACE HOPPER  
**CELEBRATION**

me  
**+we**

# 7 Skills To Jumpstart Your Technical Career

**Dr. Sally Wahba**  
**@sallyky**

# Agenda

## 1. Contributing to existing code

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1. Contributing to existing code
2. **Software debugging**

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3. **Scripting and software testing**

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4. **Version control**

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5. **Building code**

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1. Contributing to existing code
2. Software debugging
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4. Version control
5. Building code
- 6. Continuous Integration/Continuous delivery/deployment**



# Agenda

1. Contributing to existing code
2. Software debugging
3. Scripting and software testing
4. Version control
5. Building code
6. Continuous Integration/Continuous delivery
- 7. Linux and Containers**

# Story time



Story time



PROJECT SHORTCUTS

Mars Team HipChat Room

Space Station Dev Roadmap

Teams in Space Org Chart

Orbital Spotify Playlist

Hyperspeed Bitbucket Repo

+ Add shortcut

## TIS-70 Scrum Board

QUICK FILTERS: [Critical partners](#) [Only my partners](#) [Recently updated](#)

### 12 To do

▼ TIS Developer Love 3 issues

#### TIS-37

↑ Service should return prior trip details and info

SeeSpaceEZ plus

2

▼ Everything Else 21 issues

#### TIS-68

↑ Homepage footer uses an inline style-should use class

Large Team Support

#### TIS-20

↑ Engage Saturn Shuttle lines for group tours

Space Travel Partners

3

#### TIS-12

⊘ Create 90 day plans for all departments in Mars office

### 2 In progress

#### TIS-10

↑ Bad JSON data coming back from hotel API

SeeSpaceEZ plus

#### TIS-17

↑ Engage Saturn's Rings Resort as preferred

Space Travel Partners

### 3 Done

#### TIS-8

↑ Requesting flights is now taking > 5 seconds

SeeSpaceEZ plus

#### TIS-56

↑ Add pointer to main css file to create child themes

Large Team Support

#### TIS-45

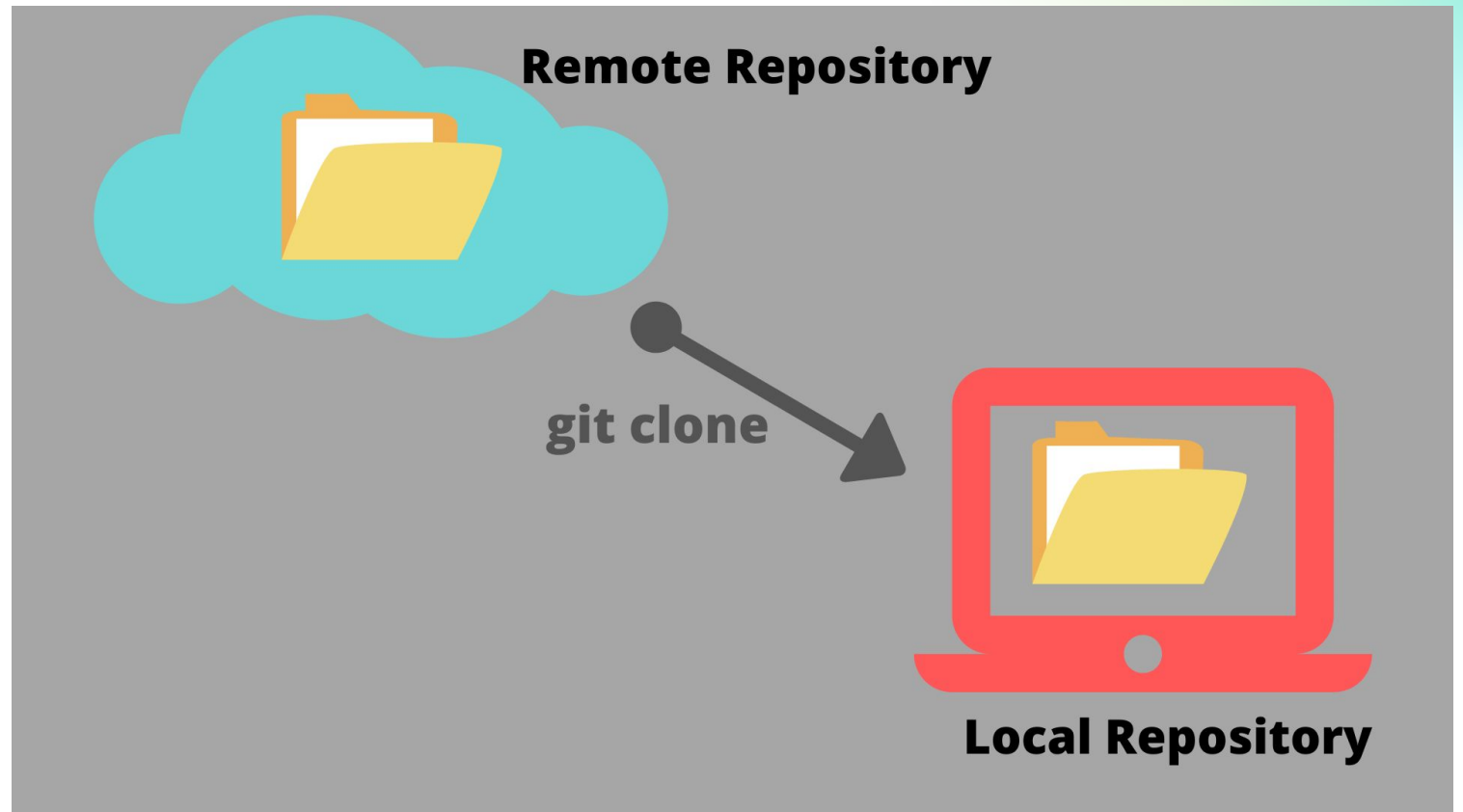
↑ Email non registered users to sign up with TIS

SeeSpaceEZ plus

# Version Control

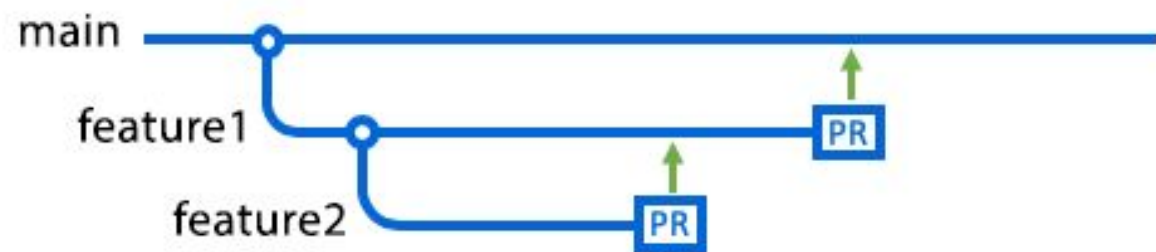


# Version Control



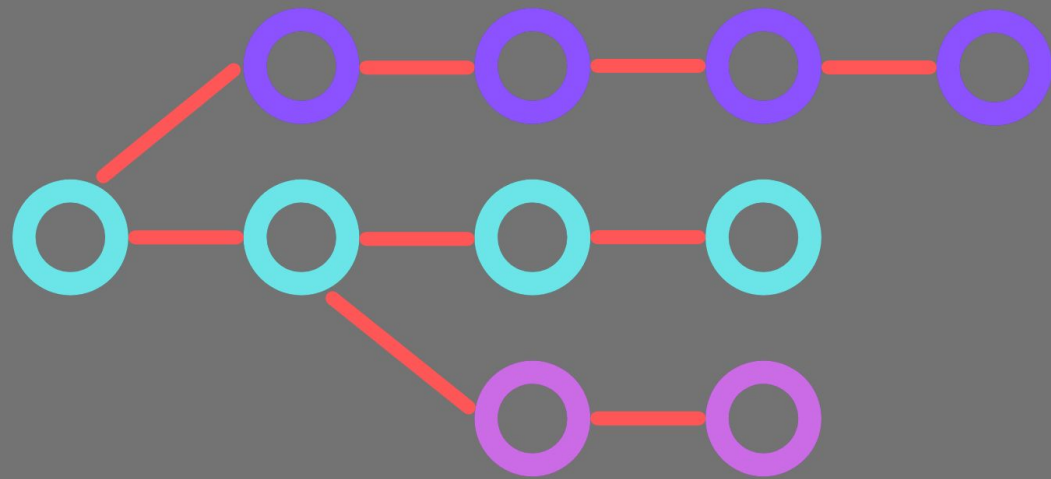
```
$ git clone git@github.com:myawesomecompany/awesomesource
```

# Version Control





# Version Control



```
$ git checkout -b myFirstTicket
```



# Contributing to Existing Code



# Contributing to Existing Code

Filter by

- <> Code 11
- Repositories 28.1k**
- Issues 0
- Pull requests 0
- Discussions 84k
- Users 0
- More

Languages

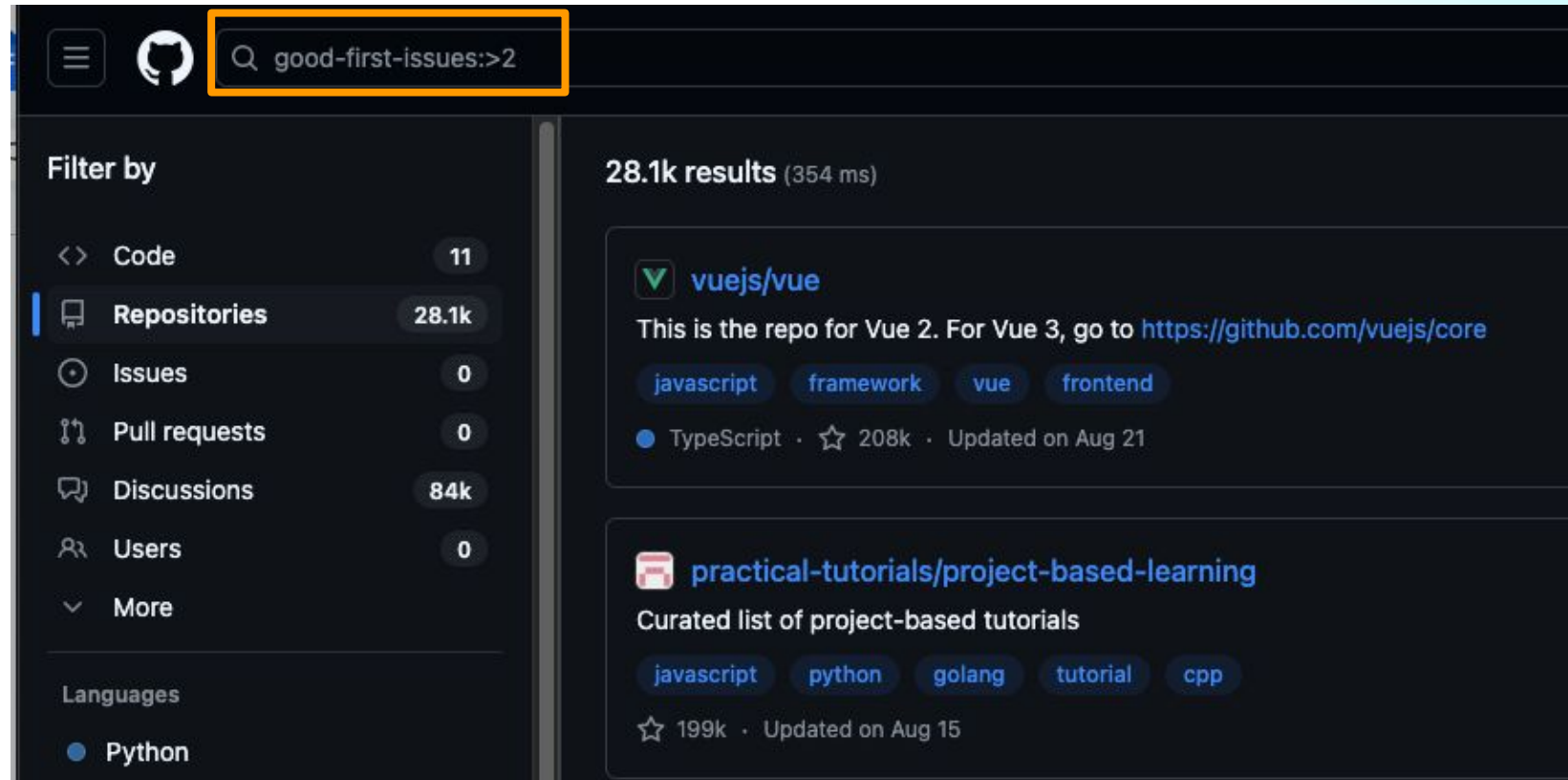
- Python**

28.1k results (354 ms)

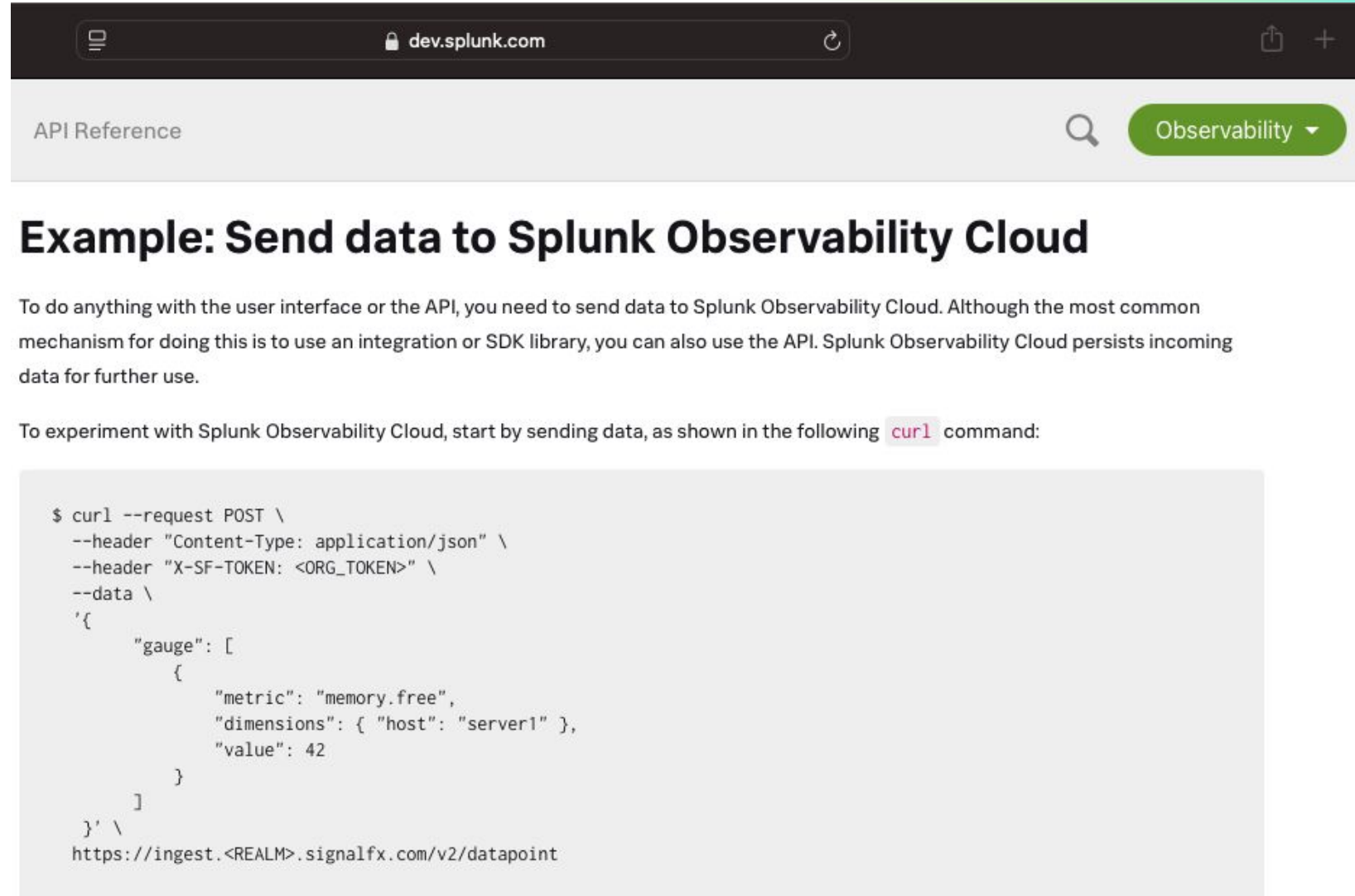
**vuejs/vue**  
This is the repo for Vue 2. For Vue 3, go to <https://github.com/vuejs/core>  
javascript framework vue frontend  
TypeScript · 208k · Updated on Aug 21

**practical-tutorials/project-based-learning**  
Curated list of project-based tutorials  
javascript python golang tutorial cpp  
199k · Updated on Aug 15

# Contributing to Existing Code



# Contributing to Existing Code



The screenshot shows a web browser at `dev.splunk.com` displaying the "API Reference" page for Splunk Observability Cloud. The page title is "Example: Send data to Splunk Observability Cloud". The text explains that to interact with the API, data must be sent to the cloud, which then persists it for further use. It provides a `curl` command as an example of how to send data.

API Reference Observability ▾

## Example: Send data to Splunk Observability Cloud

To do anything with the user interface or the API, you need to send data to Splunk Observability Cloud. Although the most common mechanism for doing this is to use an integration or SDK library, you can also use the API. Splunk Observability Cloud persists incoming data for further use.

To experiment with Splunk Observability Cloud, start by sending data, as shown in the following `curl` command:

```
$ curl --request POST \
  --header "Content-Type: application/json" \
  --header "X-SF-TOKEN: <ORG_TOKEN>" \
  --data \
  '{
    "gauge": [
      {
        "metric": "memory.free",
        "dimensions": { "host": "server1" },
        "value": 42
      }
    ]
  }' \
  https://ingest.<REALM>.signalfx.com/v2/datapoint
```

# Contributing to Existing Code

## Create issue

Issue type \*

Story

[Learn about issue types](#)

Status

Todo

This is the issue's initial status upon creation

General

Security SLA Extension

SFDC

Summary \*

Update documentation for XYZ module



# Contributing to Existing Code

```
ErrCount int64
}

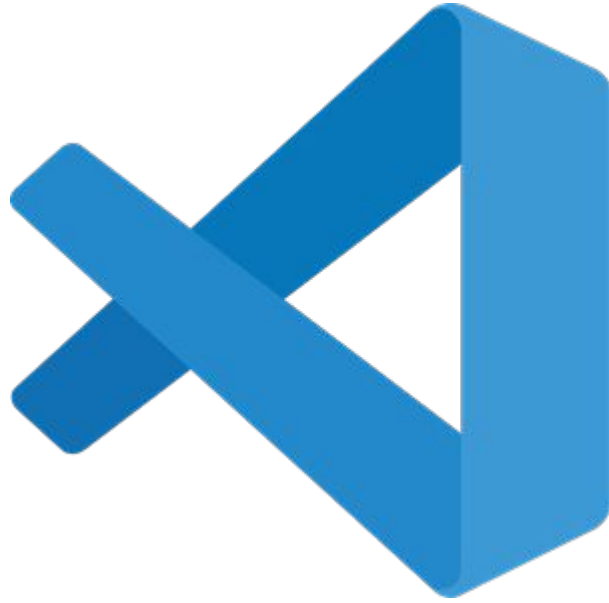
// GzipHandler transparently
func (z *ReadZipper) GzipHan
return http.HandlerFunc(
    var err error
    if r.Header.Get(key:
        gzi := z.zippers
        if gzi != nil {
            gz := gzi.(*gzip.Reader)
            // put it back
```

Method GzipHandler in github.com/signalfx/ing

Project Files

- collectdlistener.go protocol/collectd 214
- signalfxlistener.go protocol/signalfx 323
- zipper.go protocol/zipper 26
- zipper\_test.go protocol/zipper 61

# Building Code



# Building Code

## Makefile

```
1 SHELL           = /bin/bash
2 BASE            = $(CURDIR)
3 CP_RF           = cp -rf
4 GOLANGCI_LINT_VERSION = 1.49.0
5
6 # enable module support across all go commands.
7 export GO111MODULE = on
8
9 .SILENT: ;       # no need for @
10 .ONESHELL: ;    # recipes execute in same shell
11 .NOTPARALLEL: ; # wait for this target to finish
12
13 # default is verification of sfxinternalgo which includes all services
14 .PHONY: verify
15 ▶ verify: install-tools lint test
```



# Software Debugging



# Software Debugging

```
if gzi != nil {  
    z.Log.Log( keyvals...: "gzi is not nil") // <-----  
    gz := gzi.(*gzip.Reader)  
    // put it back  
    defer z.zippers.Put(gz)  
    err = gz.Reset(r.Body)  
    if err == nil {  
        defer log.IfErr(z.Log, gz.Close())  
        // nasty? could construct another object but seems expensive  
        r.Body = gz  
        z.Log.Log( keyvals...: "Incrementing hit count") // <-----  
        atomic.AddInt64(&z.HitCount, delta: 1)  
    }  
}
```

# Software Debugging

The screenshot displays a Go IDE with a project named 'ingest-protocols'. The file explorer on the left shows a directory structure including '.github', 'config', 'dp', 'grpc', 'logkey', 'protocol', and '.gitignore'. The main editor shows the source code for 'GzipHandler', which is a function that takes a 'z \*ReadZipper' and an 'http.Handler' as arguments and returns an 'http.HandlerFunc'. The function logic includes a comment about transparently decoding gzipped requests, a return statement for 'http.HandlerFunc', and a conditional check for a 'Content-Encoding' header. A breakpoint is set at line 32, where 'gzi := z.zippers.Get()' is called. The 'Debug' window at the bottom shows the current goroutine (35) and the call stack, with the top frame being 'zipper.(\*ReadZipper).GzipHandler.func1'. The 'Threads & Variables' tab is active, showing the current state of variables: 'w' is an 'http.ResponseWriter', 'r' is an 'http.Request' for a 'GET /health-check' request, 'h' is an 'http.Handler', 'z' is a 'zipper.ReadZipper', and 'err' is 'nil'.

```
26 // GzipHandler transparently decodes your possibly gzipped request
27 func (z *ReadZipper) GzipHandler(h http.Handler) http.Handler {
28     return http.HandlerFunc(func(w http.ResponseWriter, r *http.Request) {
29         var err error
30         if r.Header.Get("Content-Encoding") == "gzip" {
31             gzi := z.zippers.Get()
32             if gzi != nil {
33                 z.Log.Log(keyvals...: "gzi is not nil") // <-----
34             }
35         }
36         h.ServeHTTP(w, r)
37     })
38 }
```

Debug Test in github.com/signalfx/ingest-protocols/protocol/z... x

Threads & Variables Console

Goroutine 35 zipper.(\*ReadZipper).GzipHandler.func1

zipper.(\*ReadZipper).GzipHandler.func1 (zipper.go:31) github.com/signalfx/ingest-protocols/protocol/zipper  
http.HandlerFunc.ServeHTTP (server.go:2166) net/http  
zipper.Test.func1.2 (zipper\_test.go:62) github.com/signalfx/ingest-protocols/protocol/zipper  
convey.parseAction.func1 (discovery.go:89) github.com/smartystreets/goconvey/convey  
convey.(\*context).conveyInner (context.go:279) github.com/smartystreets/goconvey/convey  
convey.(\*context).Convey.func1 (context.go:166) github.com/smartystreets/goconvey/convey  
gls.(\*ContextManager).SetValues.func1 (context.go:97) github.com/jtolds/gls  
gls.EnsureGoroutineId (gid.go:19) github.com/jtolds/gls

Evaluate expression (🔗) or add a watch (🔗)

- > w = {http.ResponseWriter | \*httptest.ResponseRecorder}
- > r = {http.Request | 0xc0002c06c0} GET /health-check
- > h = {http.Handler | \*zipper.foo}
- > z = {zipper.ReadZipper | 0xc00019a6c0}
- > err = {error} nil

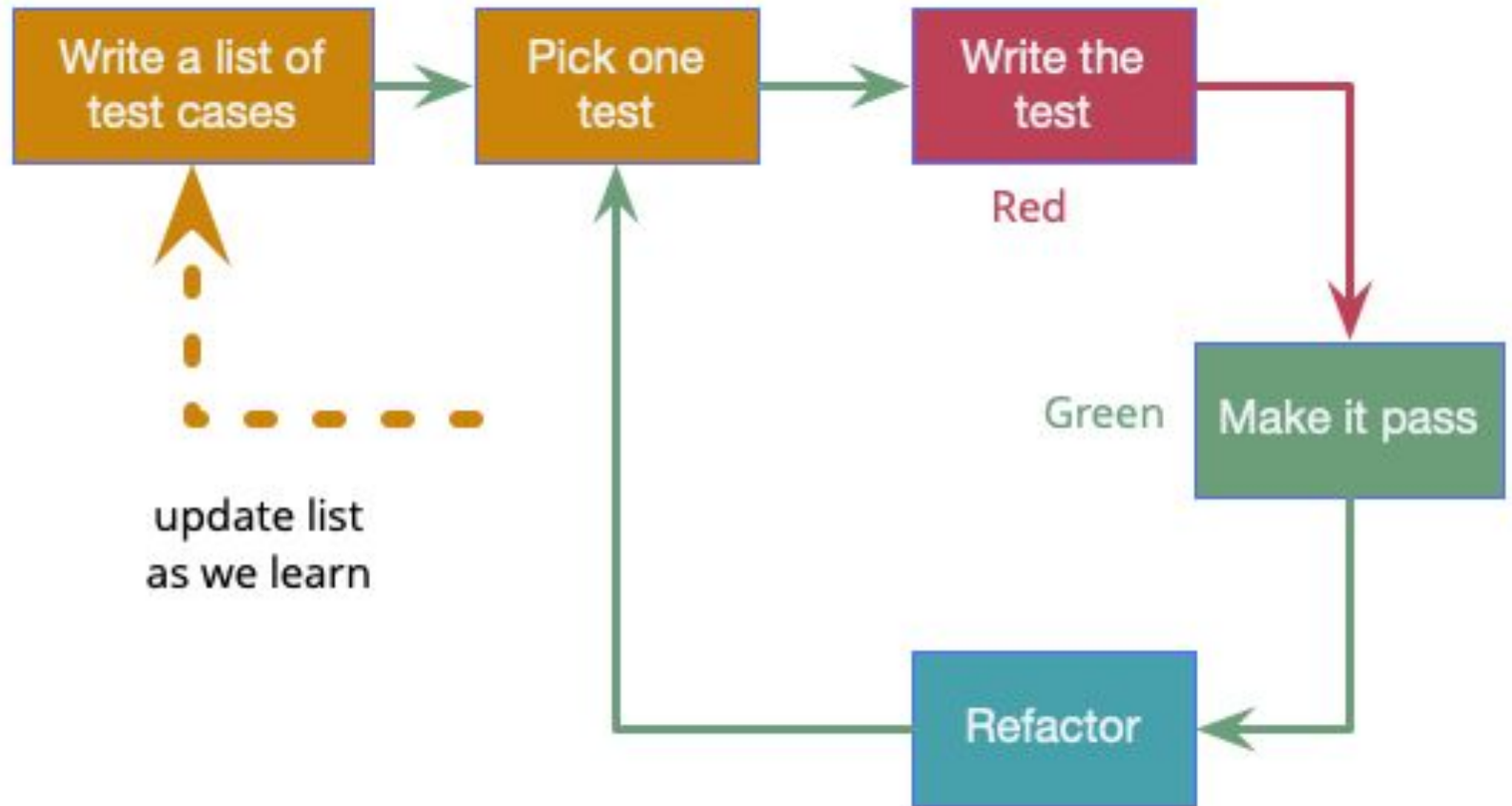
# Scripting and Software Testing

**PASSED**

# Scripting and Software Testing

```
func Test(t *testing.T) {
    Convey( items..., "Test zipper", t, func() {
        zippers := NewZipper()
        badZippers := newZipper(func(r io.Reader) (*gzip.Reader, error) {
            return new(gzip.Reader), errors.New(msg: "nope")
        })
        f := new(foo)
        zipped := new(bytes.Buffer)
        w := gzip.NewWriter(zipped)
        _, err := w.Write([]byte("OK"))
        So(err, ShouldBeNil)
        So(w.Close(), ShouldBeNil)
        tests := []struct {...}{
            { zipper: zippers, name: "test non gzipped", data: []byte("OK"),
```

# Scripting and Software Testing

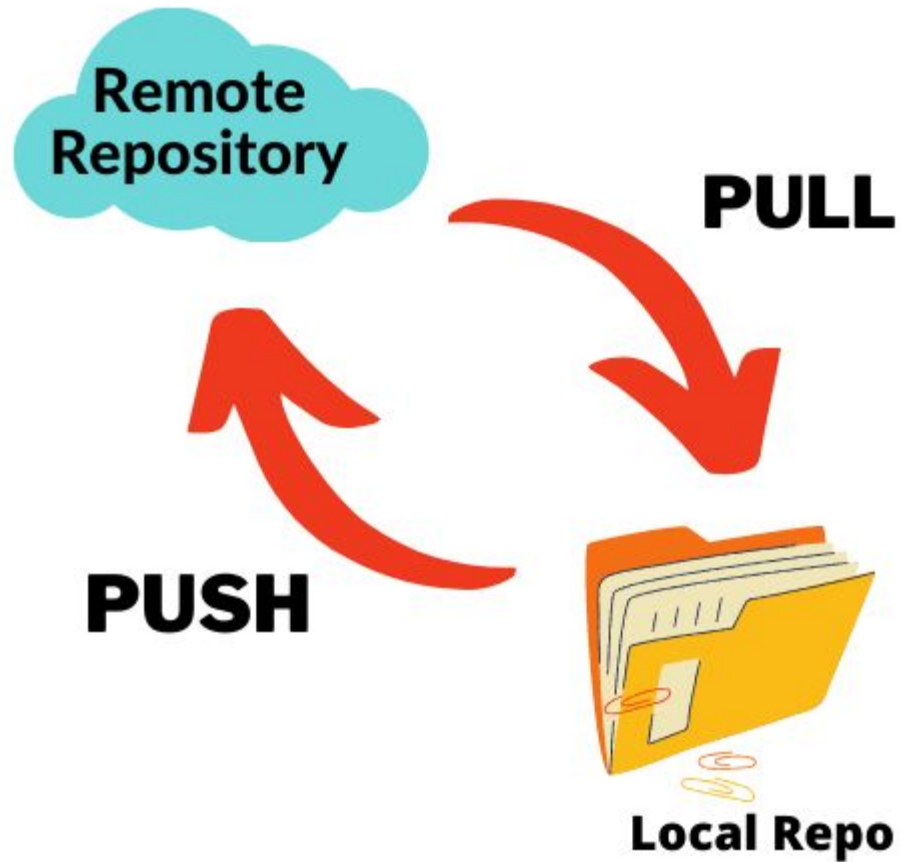




# Scripting and Software Testing



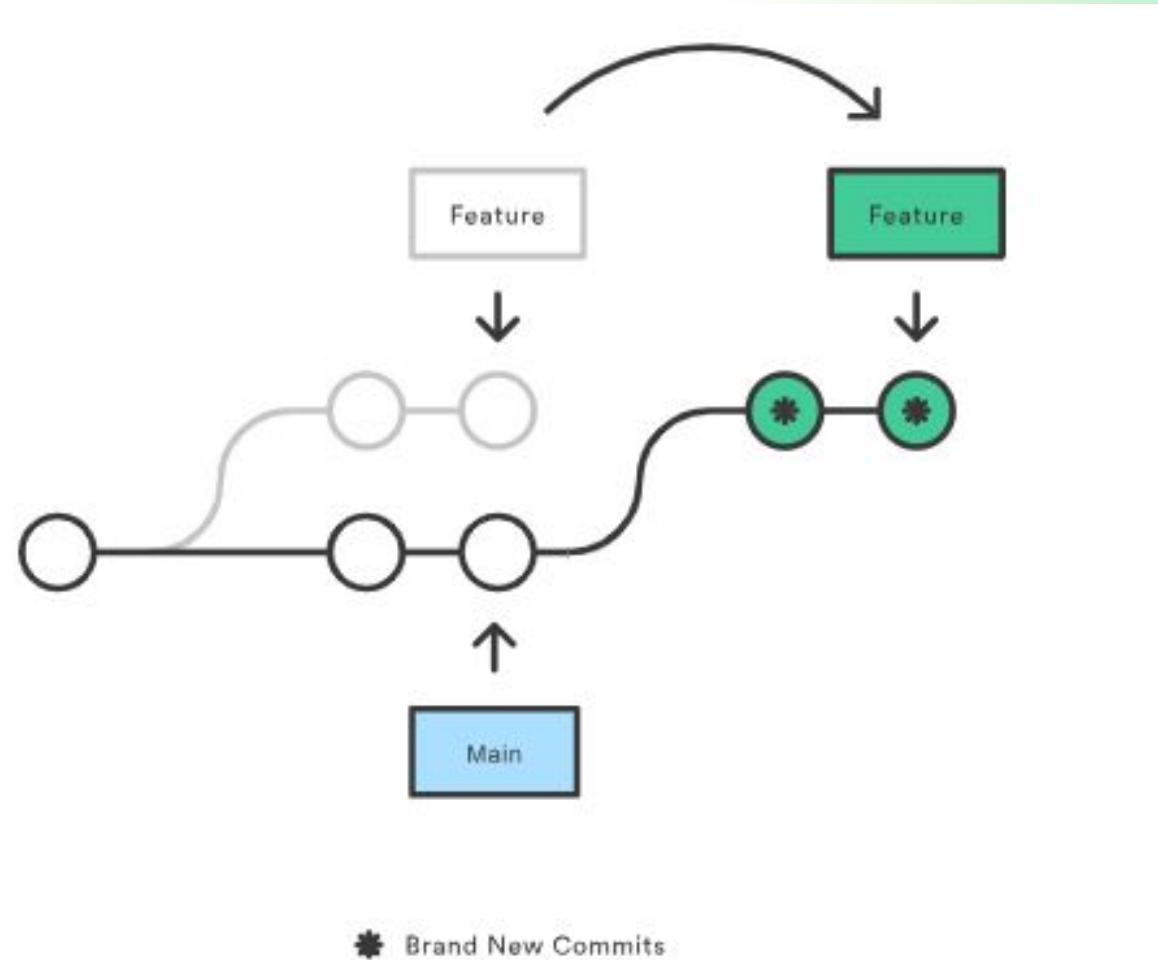
# Version Control



```
$ git push -set-upstream origin myFirstTicket
```





# Version Control








**\$ git rebase main**

# Version Control


## Fix customer bug for bug 7636 #1



 Open swahba wants to merge 1 commit into `main` from `bugfix` 

 Conversation 0  Commits 1  Checks 0  Files changed 1

 **swahba** commented now



*No description provided.*




  Fix customer bug for bug 7636

# Version Control


## Fix customer bug for bug 7636 #1



 Merged swahba merged 1 commit into `main` from `bugfix`  now

Conversation 0 Commits 1 Checks 0 Files changed 1

 swahba commented 1 minute ago

*No description provided.*



  Fix customer bug for bug 7636

# CI/CD

# releasetrain-dev-tests



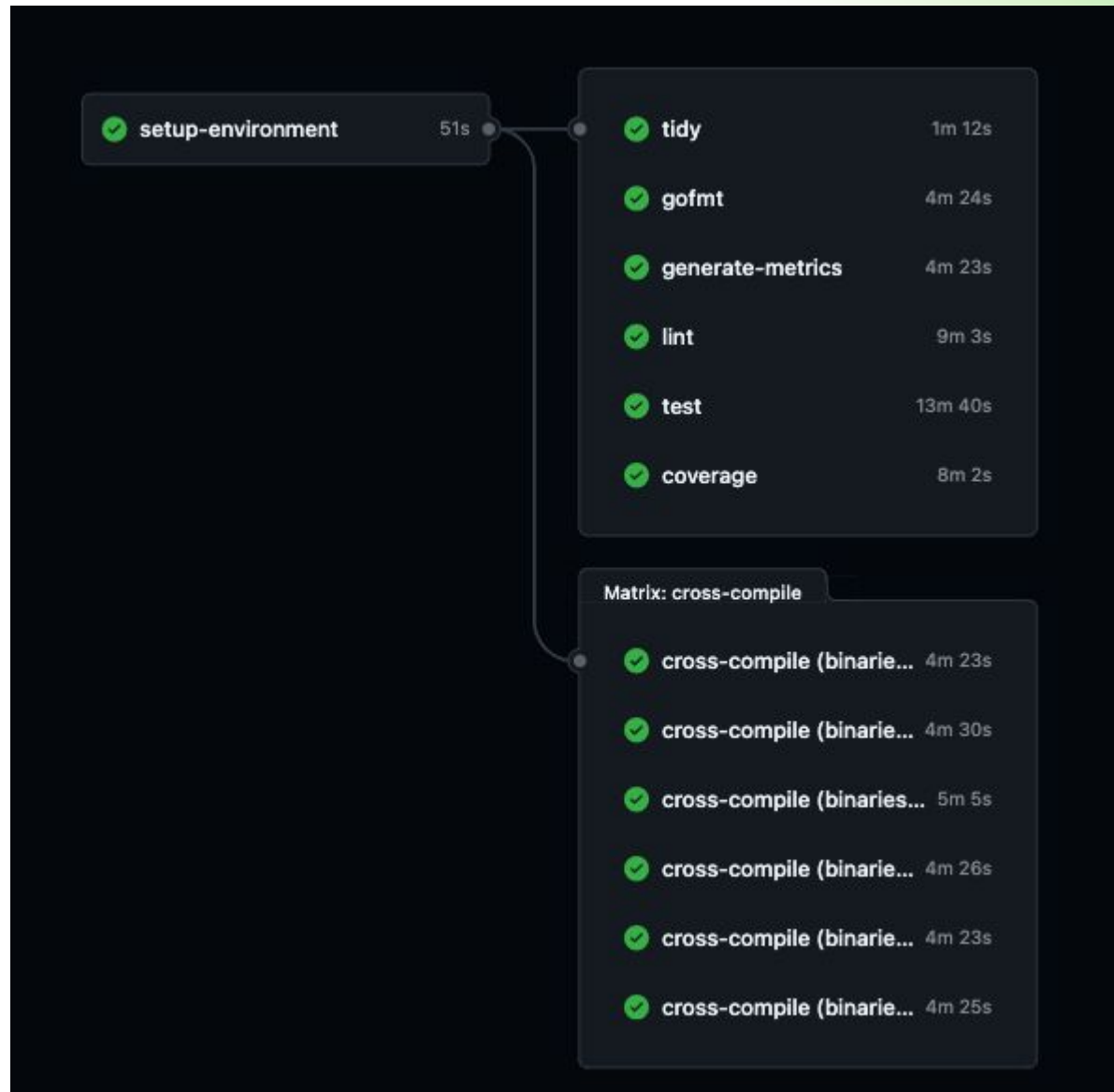
**cloud release train** APP Today at 5:03 PM



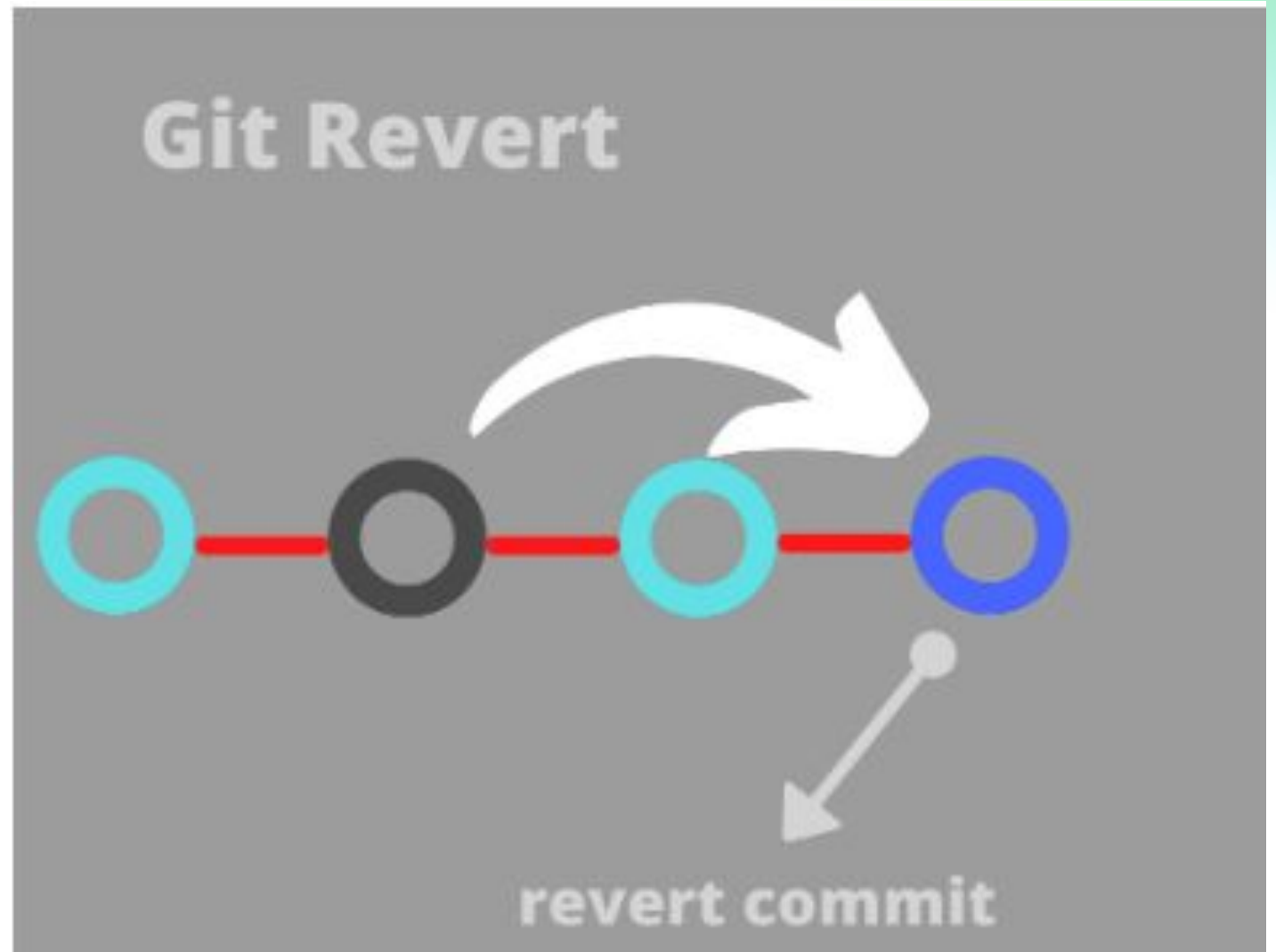
One Spark One Pace DevOps Automated Train with target version 7.1.2008 has failed on stack `stack-1-unhealthy-preflight-1727989323` because of:

```
preflight health check threshold exceeded
```

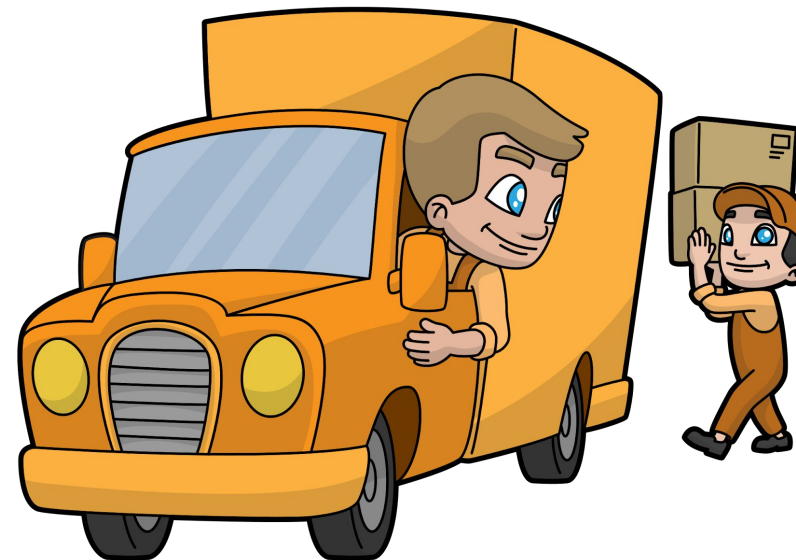
# CI/CD



# Version Control



CI/CD



# CI/CD

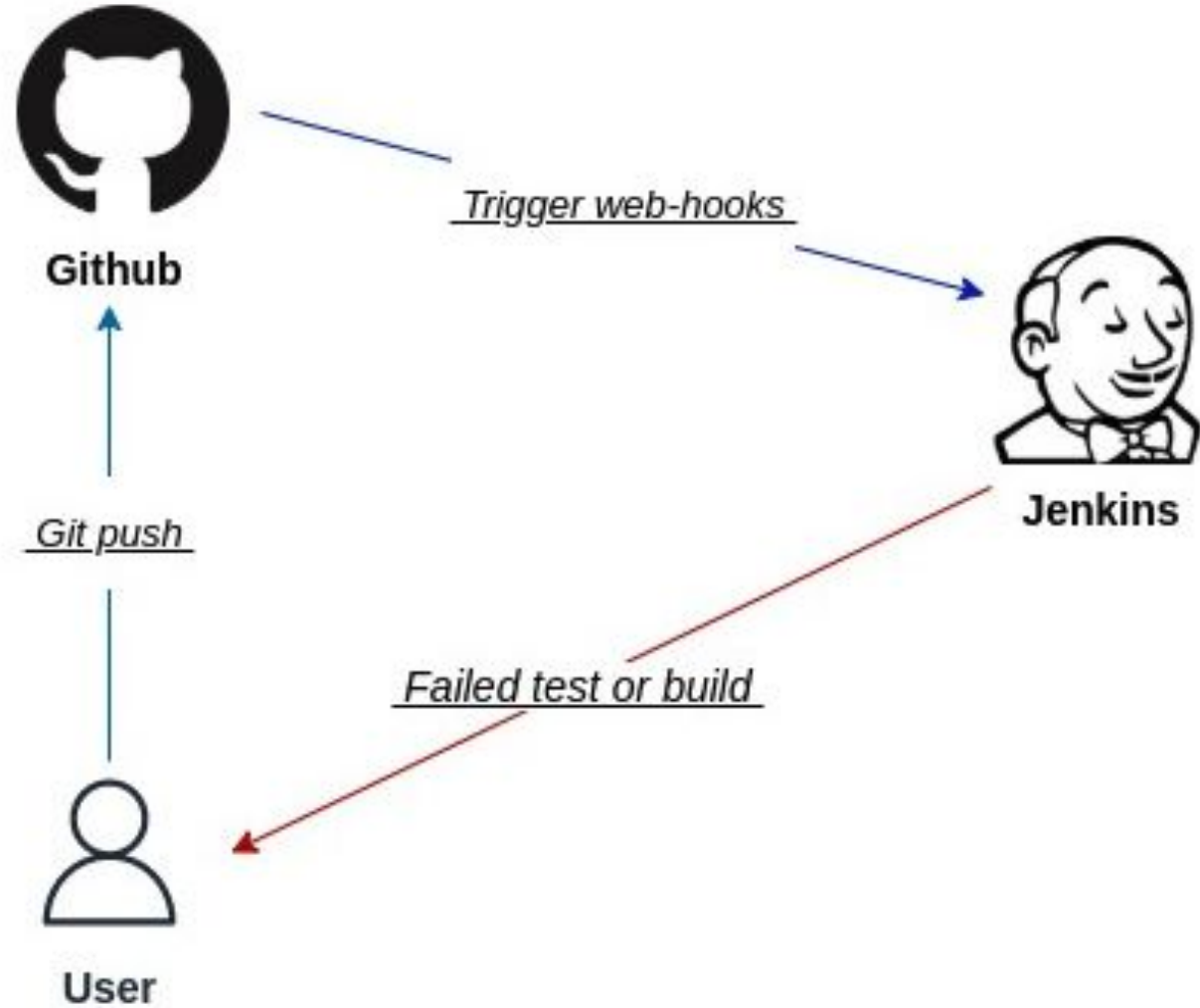
- Continuous integration is the practice of automatically and frequently integrating code changes to a shared source code repository.
- Continuous delivery refers to the integration, testing, and delivery of code changes.
- Continuous deployment automatically releases the updates into a production environment.



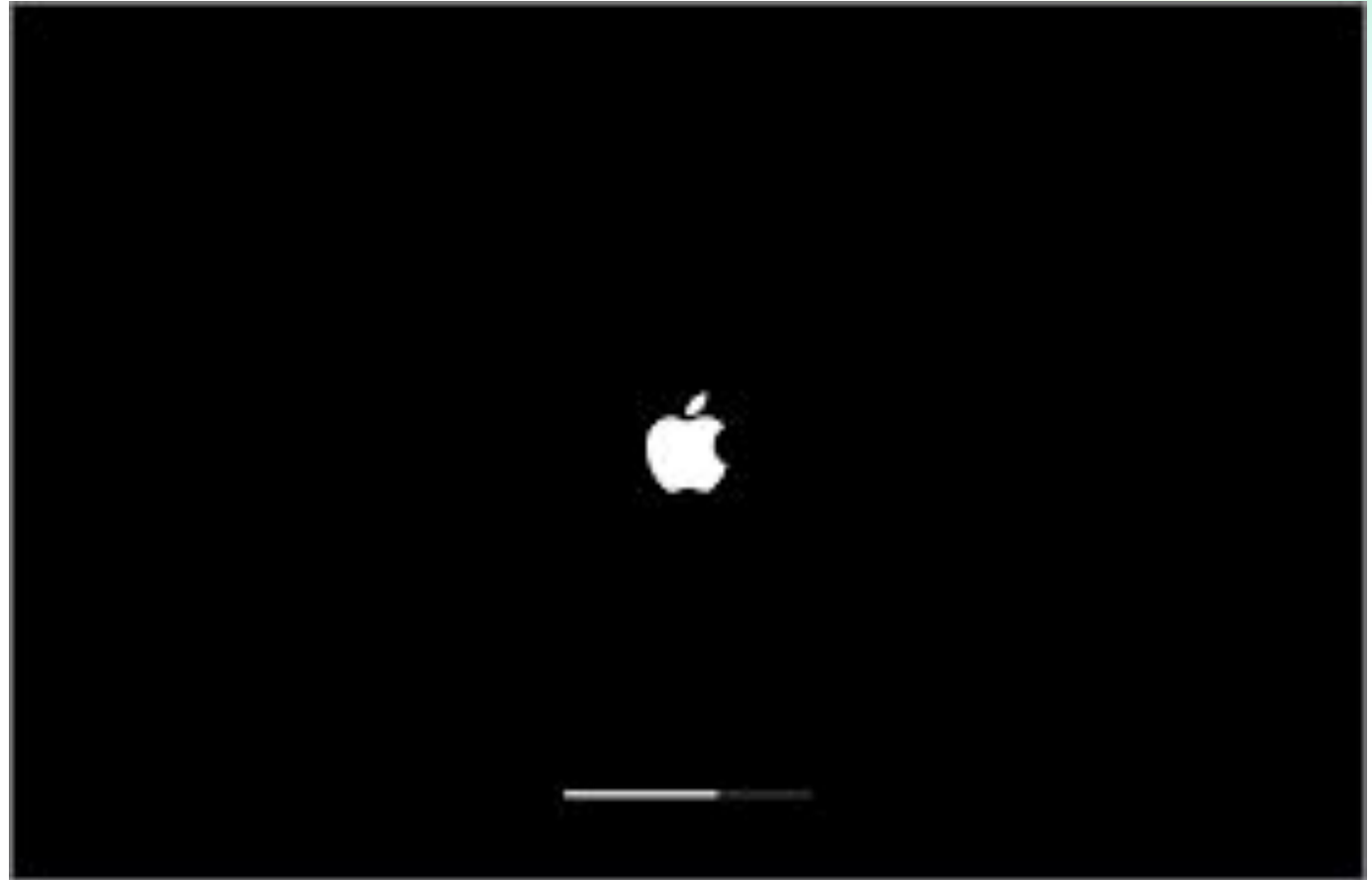
# CI/CD



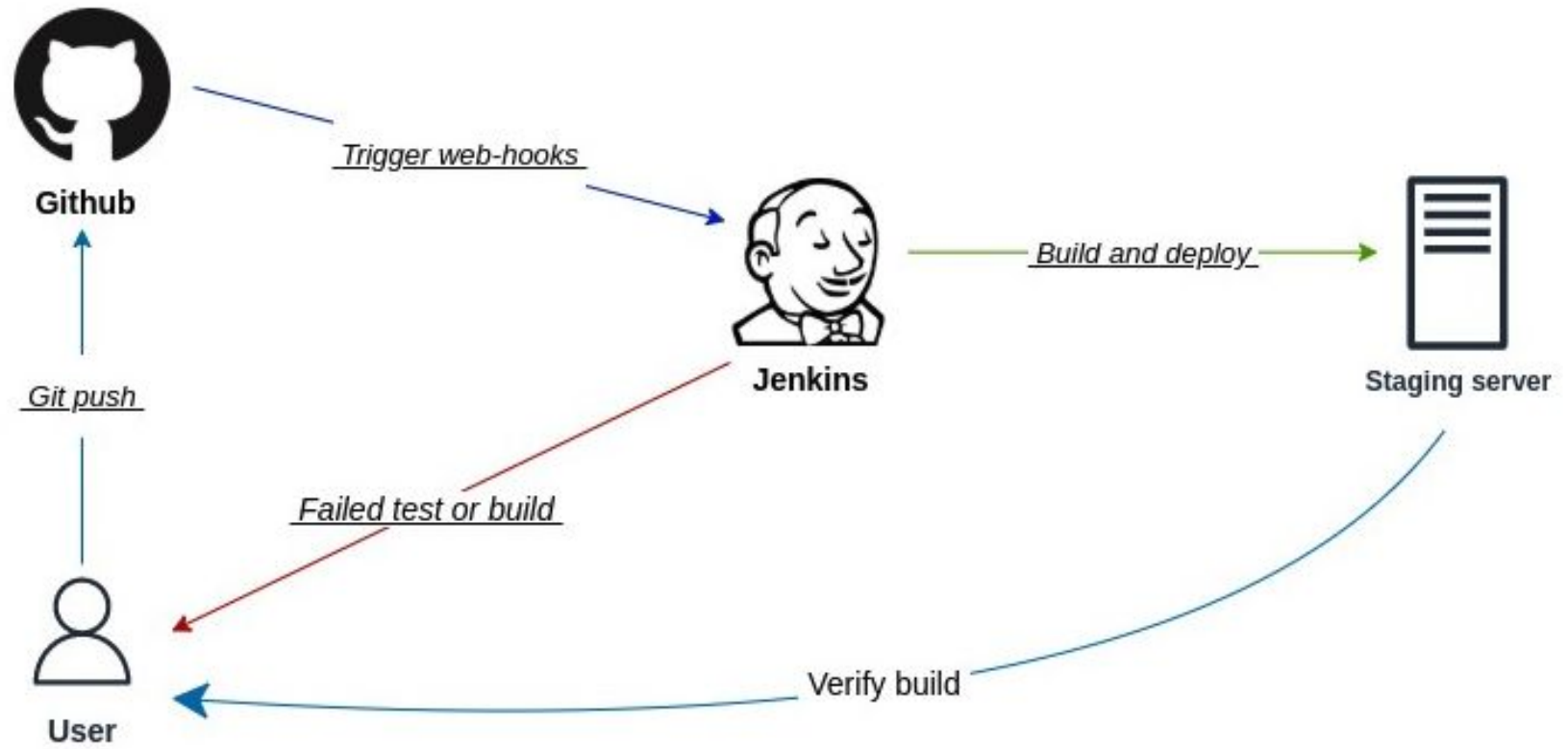
# CI/CD



CI/CD



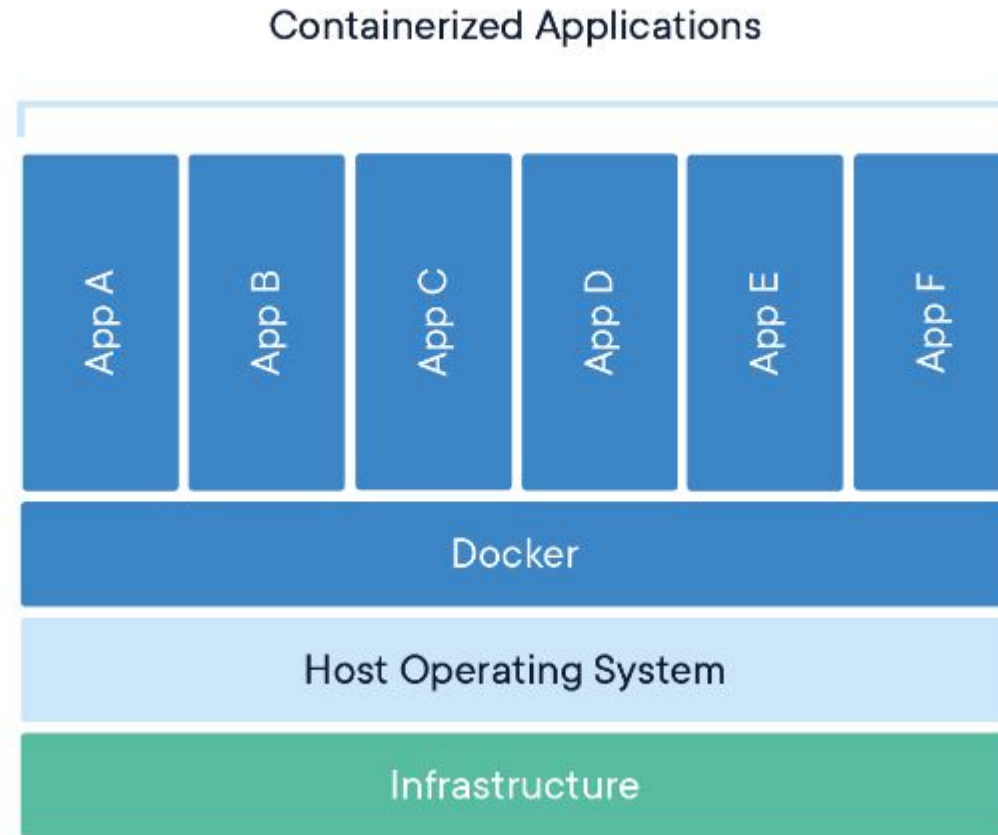
# CI/CD



# Linux & Containers



# Linux & Containers



# Linux & Containers

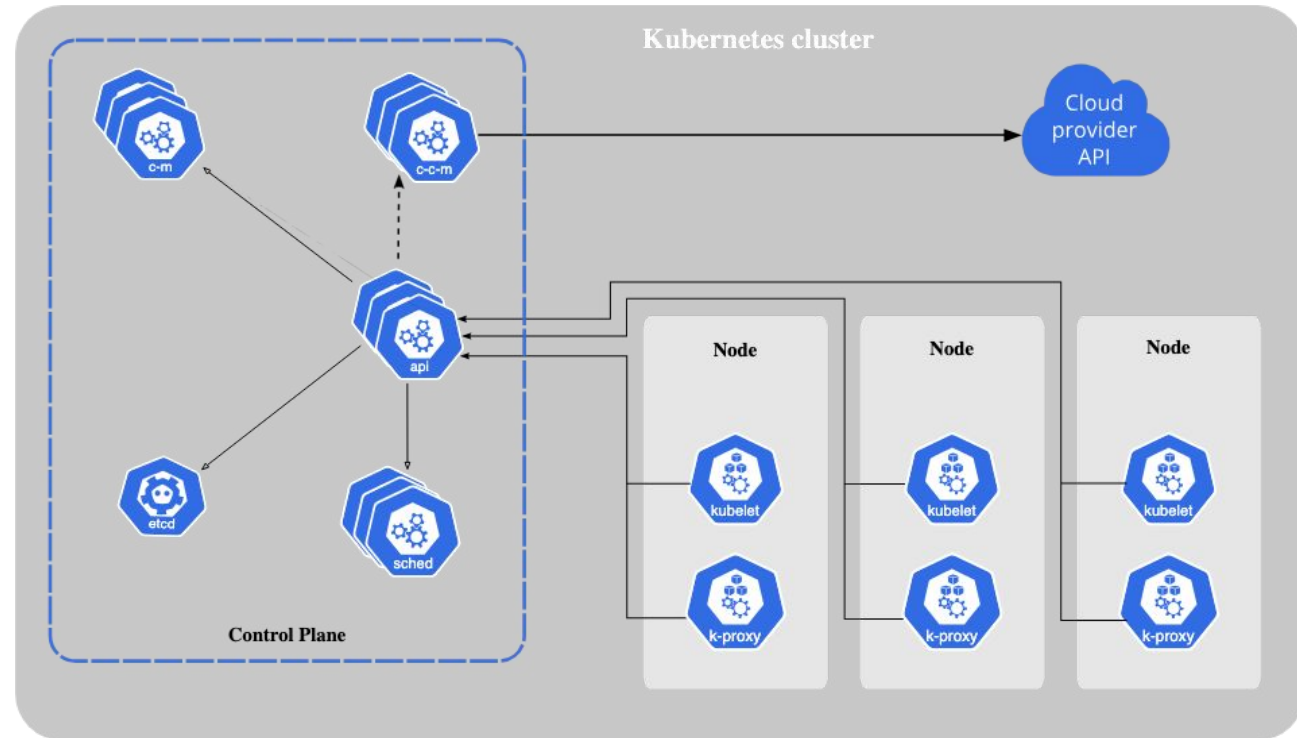
GNU GRUB version 2.06

```
Boot Linux Lite 6.0 Live System
Direct install Linux Lite 6.0
Compatibility Mode Linux Lite 6.0
*OEM install Linux Lite 6.0 (for manufacturers)
Check for file corruption - boots into Live desktop if none found
Reboot
Shut Down
```

Use the ↑ and ↓ keys to select which entry is highlighted.  
Press enter to boot the selected OS, 'e' to edit the commands  
before booting or 'c' for a command-line.



# Linux & Containers





# Summary

1. Contributing to existing code
2. Software debugging
3. Scripting and software testing
4. Version control
5. Building code
6. Continuous Integration/Continuous delivery
7. Linux and Containers

# Slides

The slides are available at:

<https://github.com/swahba/conferencetalks>

# Acknowledgments

Special thanks to my colleagues:

- Amneet Kaur
- Gail Carmichael
- Jessi Jullie

# Questions?



# THANK YOU



@sallyky



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me  
+we



# Image sources referenced in slide speaker notes