Stop manually publishing your PowerShell modules

Automate it in 2 minutes!

Daniel Schroeder

@deadlydog

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PURESTORAGE®

ScriptRunner®
The #1 for PowerShell Management

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About Dan

```powershell
$Dan = @{
    Name = 'Daniel Schroeder'
    Alias = 'deadlydog'
    Role = 'Individual Contributor'
    Company = 'iQmetrix'
    Address = @{
        City = 'Regina'
        Province = 'Saskatchewan'
        Country = 'Canada'
    }
    Experience = '2+ decades writing code'
    Blog = 'https://blog.danskingdom.com'
    Passions = @('Coding', 'Blogging', 'Automation', 'Dev Productivity Tools')
    Likes = @('.NET', 'PowerShell', 'Knowledge Sharing', 'Dogs', 'Roller Blading')
}
```

Agenda

- Why use modules?
- Why automate publishing?
- Ways to automate publishing
- Demo
- Wrap up
- Questions

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Why use modules?

- Easy to install — Install-Module (Install-PSResource)
- Easy to update — Update-Module (Update-PSResource)
- Easy to use — ~~& C:\Some\Path\Script.ps1~~

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Evolution to modules

1. Run commands in the terminal
2. Put commands into a script
3. Put Params on the script
4. Turn the script into a module

Not every script needs to be a module

- Good candidates: Used/updated frequently, shared with others

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Publishing a module is easy

- Publish-Module (Publish-PSResource)
  - -Path C:\PathTo\MyModule –NuGetApiKey *****
  - -Repository MyInternalPowerShellFeed

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Oh right, version number

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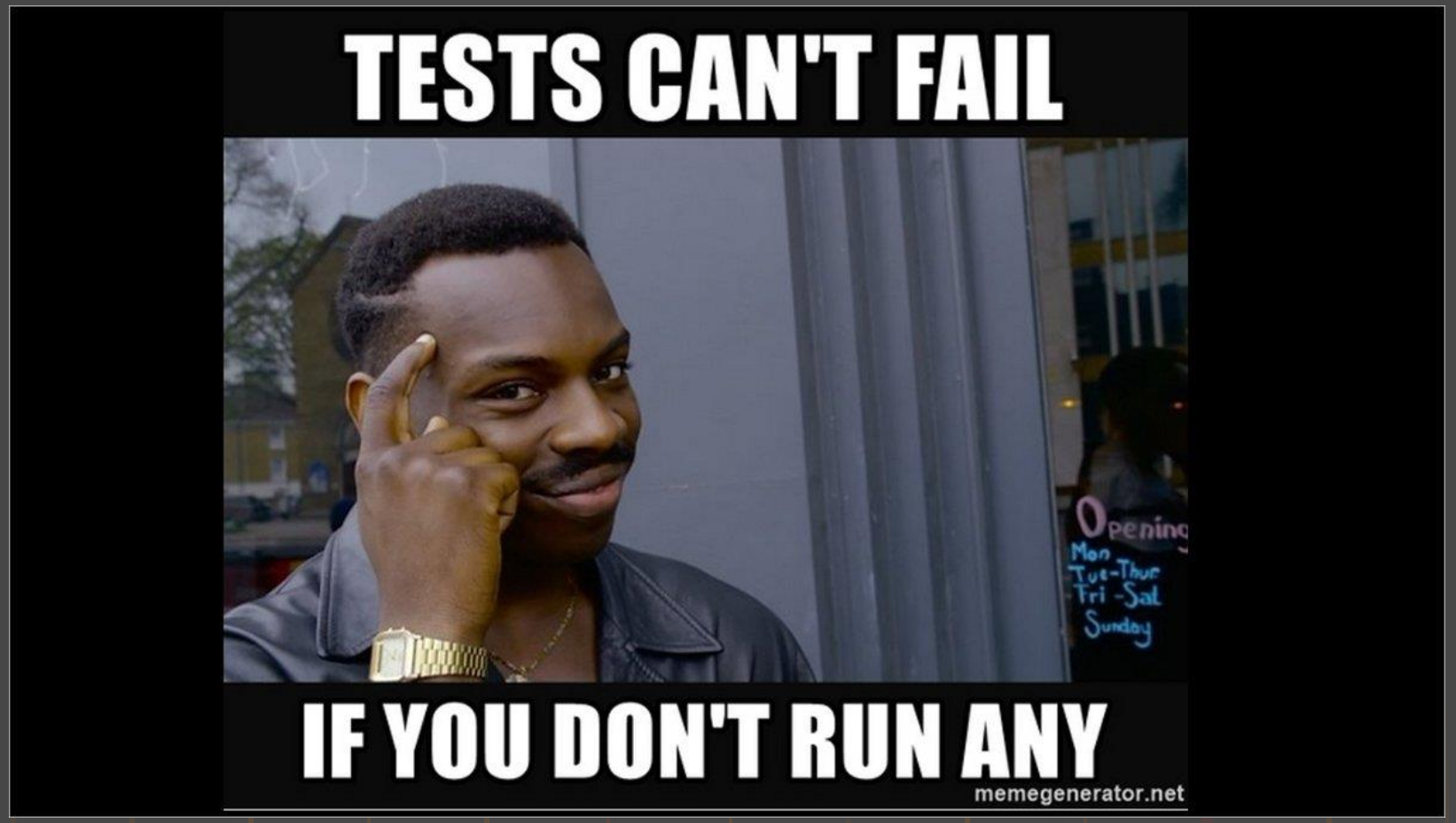
Oh right, tests



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Oops, only I have the API key

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Time for deployment instructions

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Regenerate documentation

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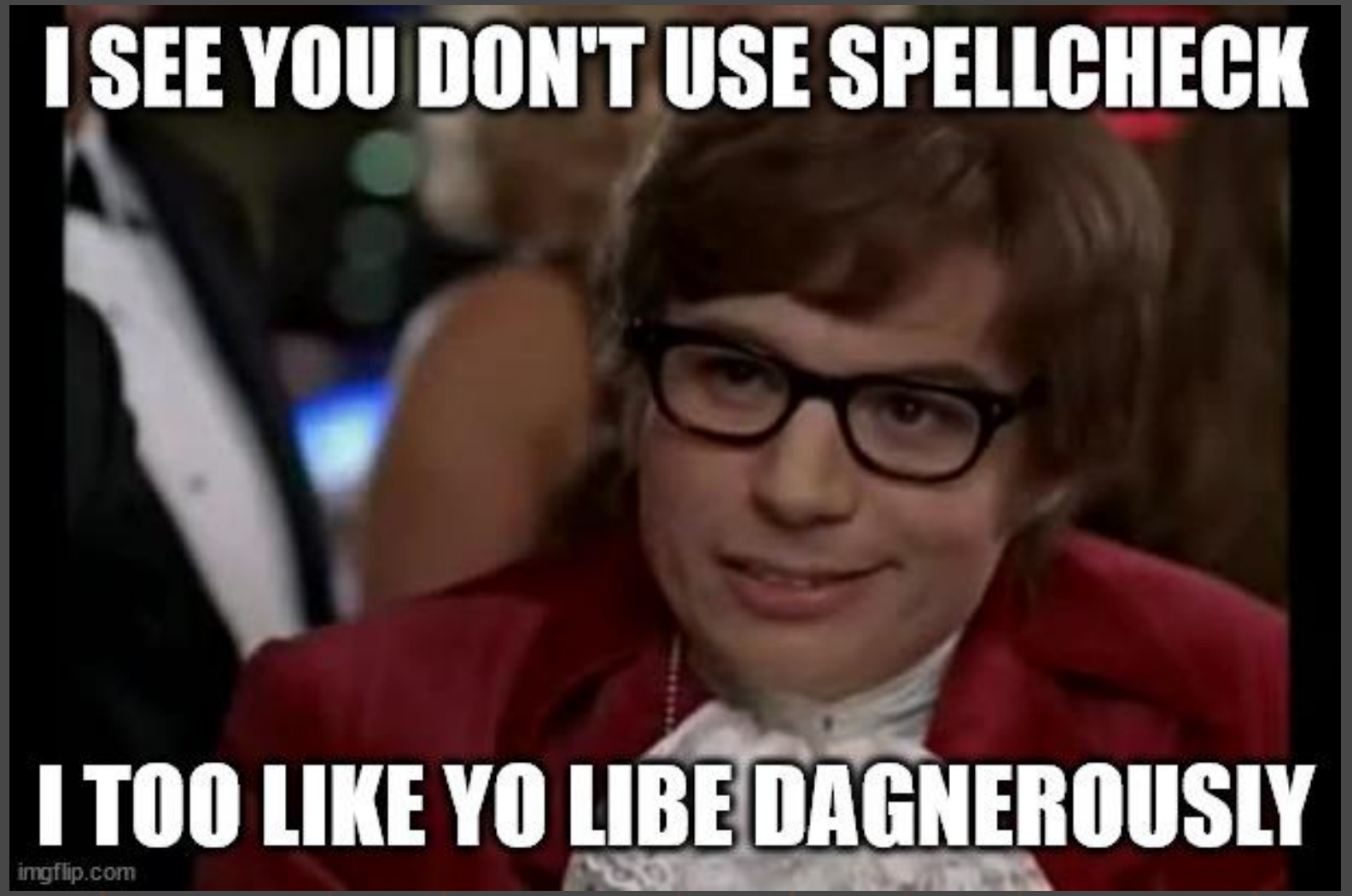
Spellcheck code and docs



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Oh right, restrict access

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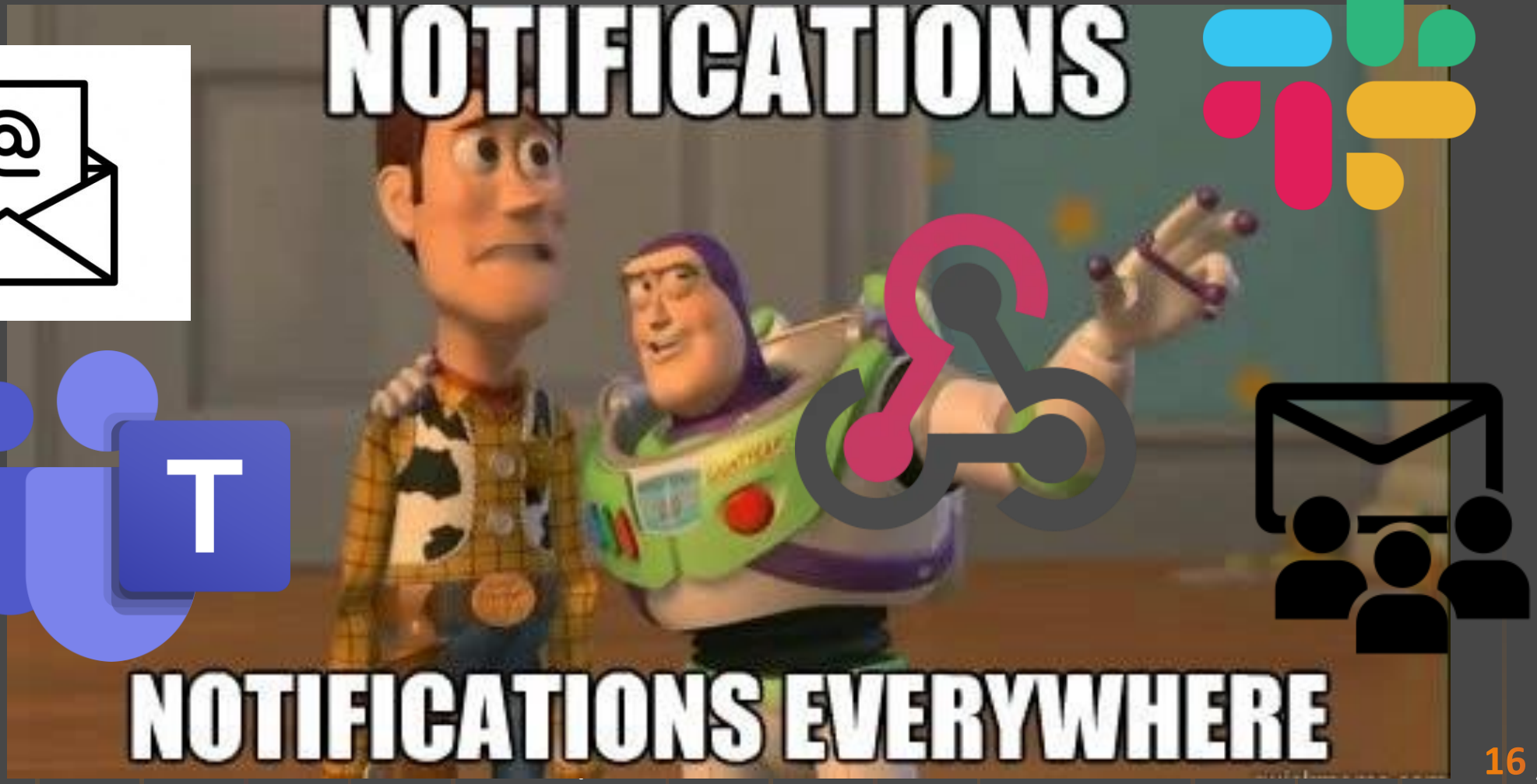
Send notifications



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Tag commit with the version number

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Let's write a deployment script!

PS> See-CheckList | Write-AutomationScript

An improvement, but we can do better with

Pipelines!

Actions / Workflows

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Use source control

sre-one-off-scripts

- src
  - Copy-ADComputerGroupMembershipToAnotherComputer
  - DisableWindowsServiceOnServers
  - Get-AllAzureResources
  - Get-IisEnvironmentVariablesOnServers
  - Get-ReginaServerPatchInfoFromPuppet
  - Get-ScheduledTasksFromServers
  - Get-WindowsVersionAndStatsOfAllServers
  - RemoveApplicationInsightsResources
  - Template.NewScript
  - Template.RunCodeOnEveryActiveDirectoryVirtualMachine
  - Template.RunCodeOnEveryDataCenterVirtualMachine
  - Watch-GitHubUsersRateLimit
- .editorconfig
- .gitignore
- ReadMe.md

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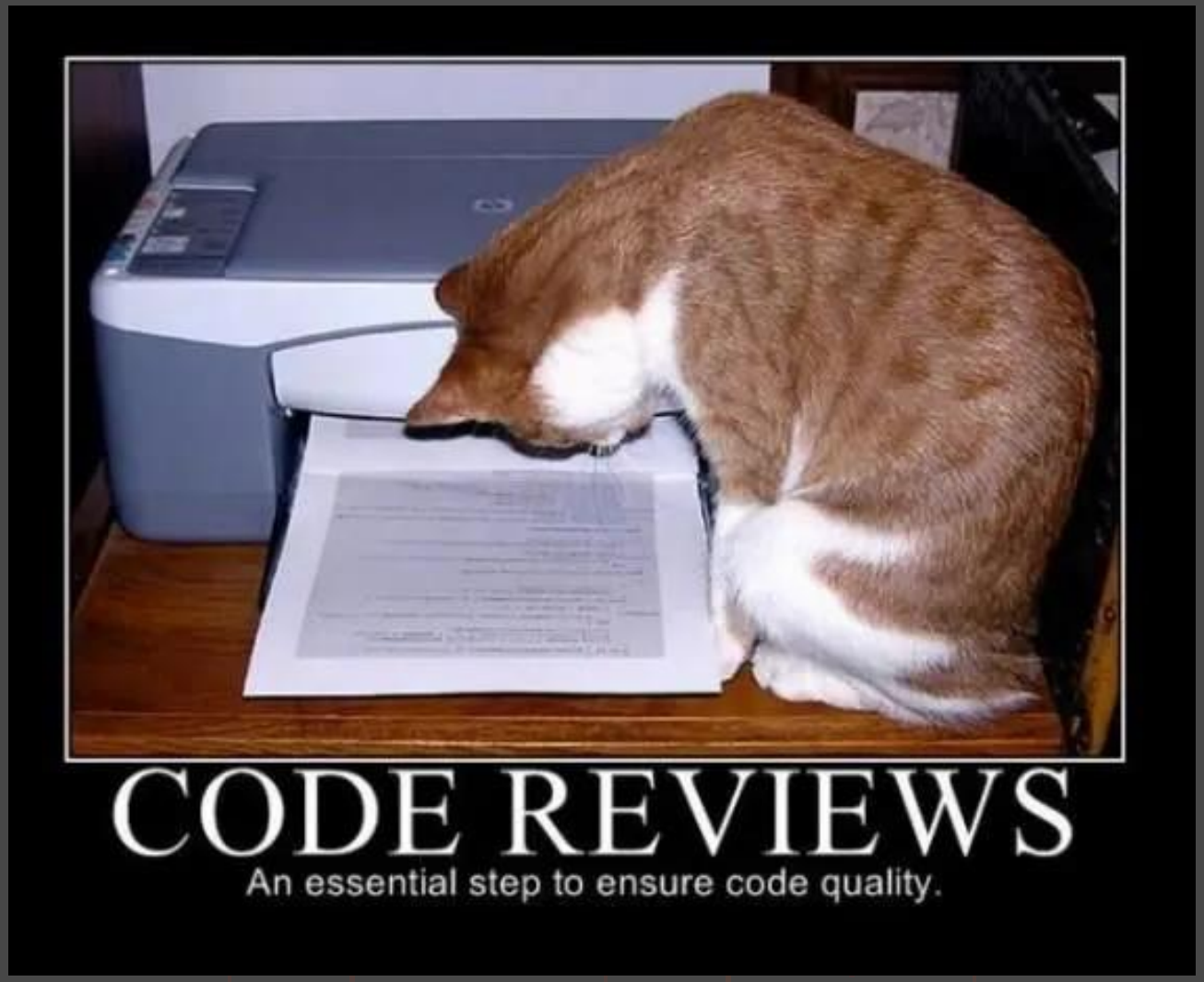
Don’t forget code reviews



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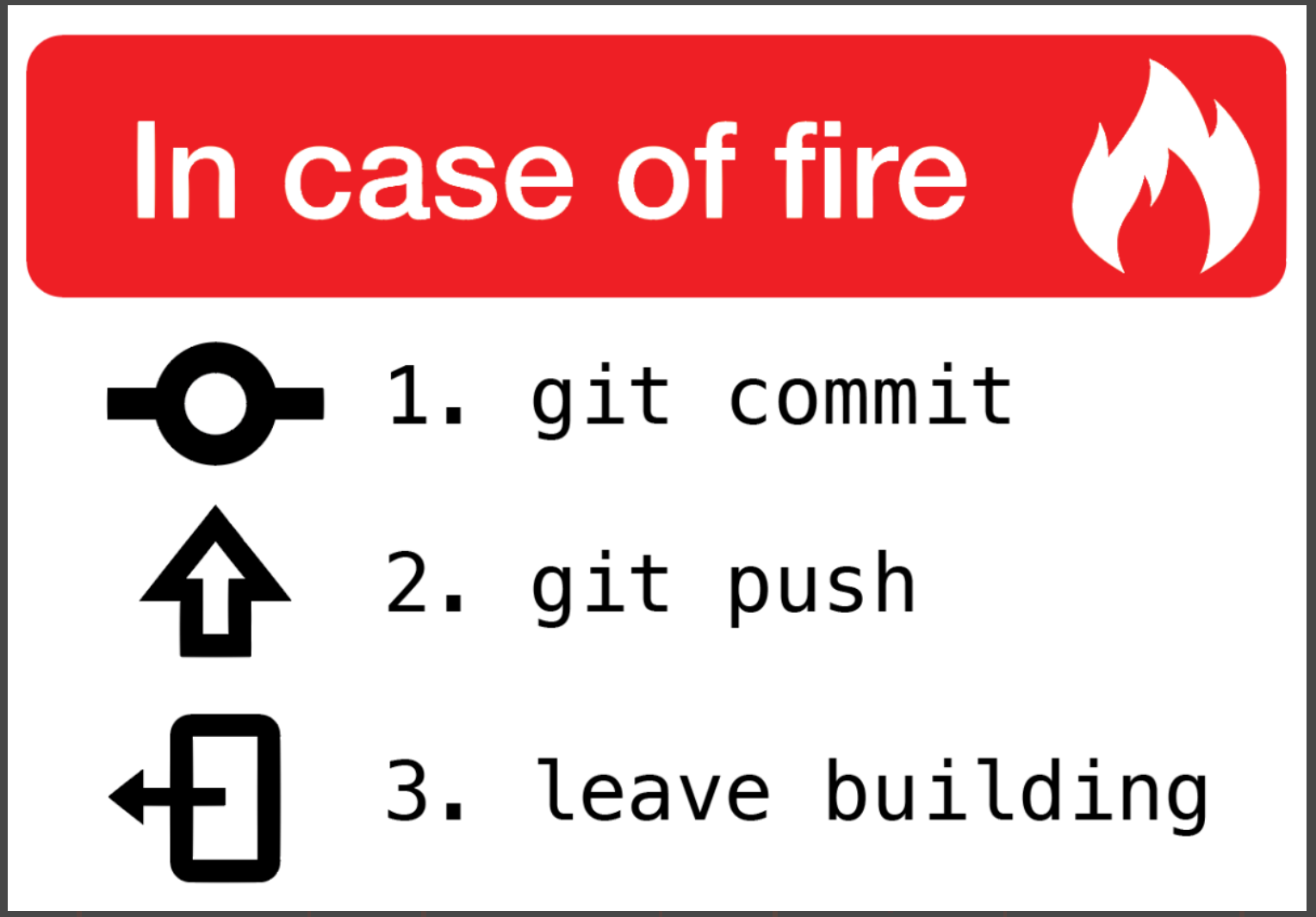
Oh right, push your code up



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Publish from the main branch

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Get approval

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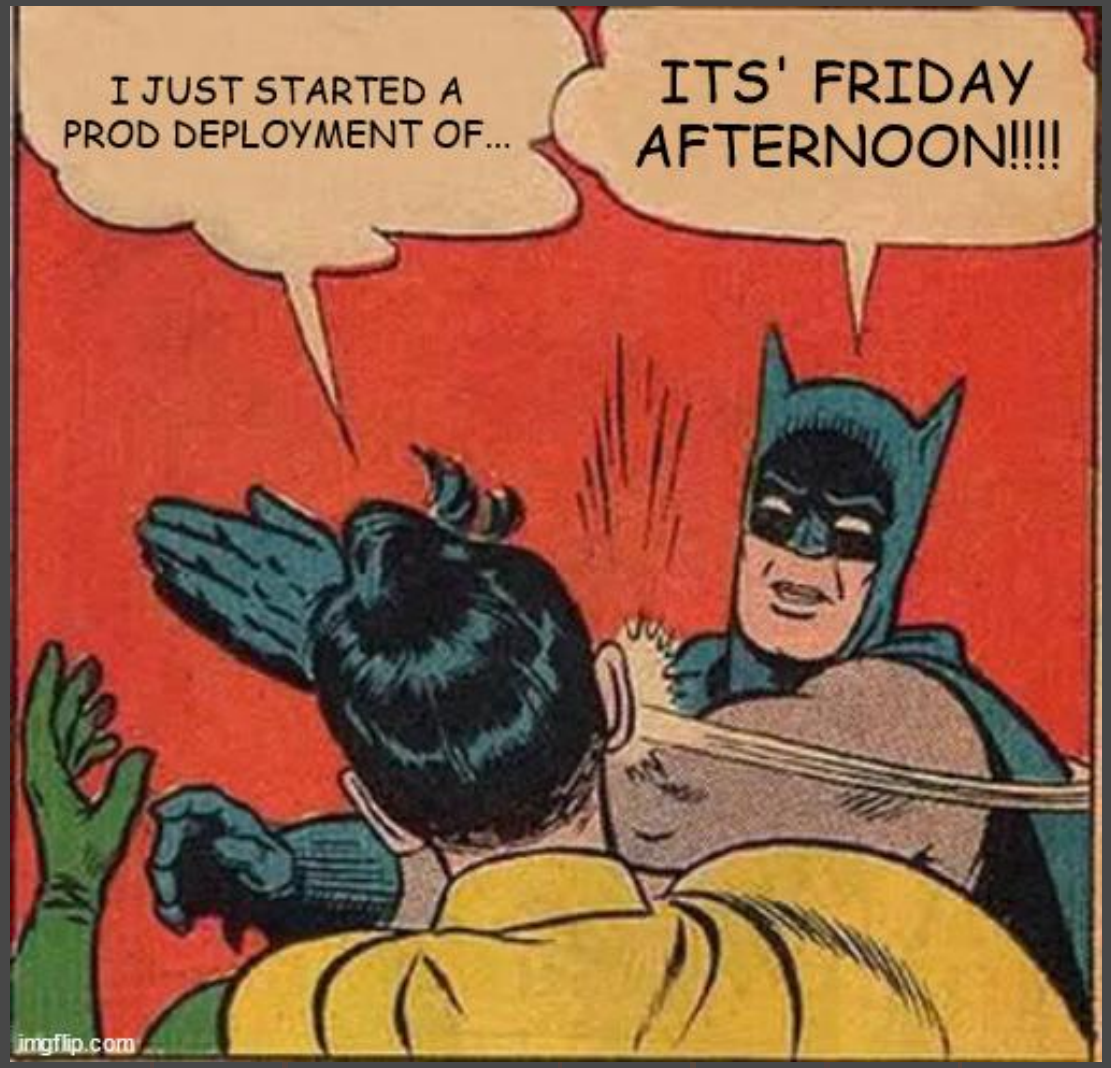
Deployment schedules



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Baking new versions

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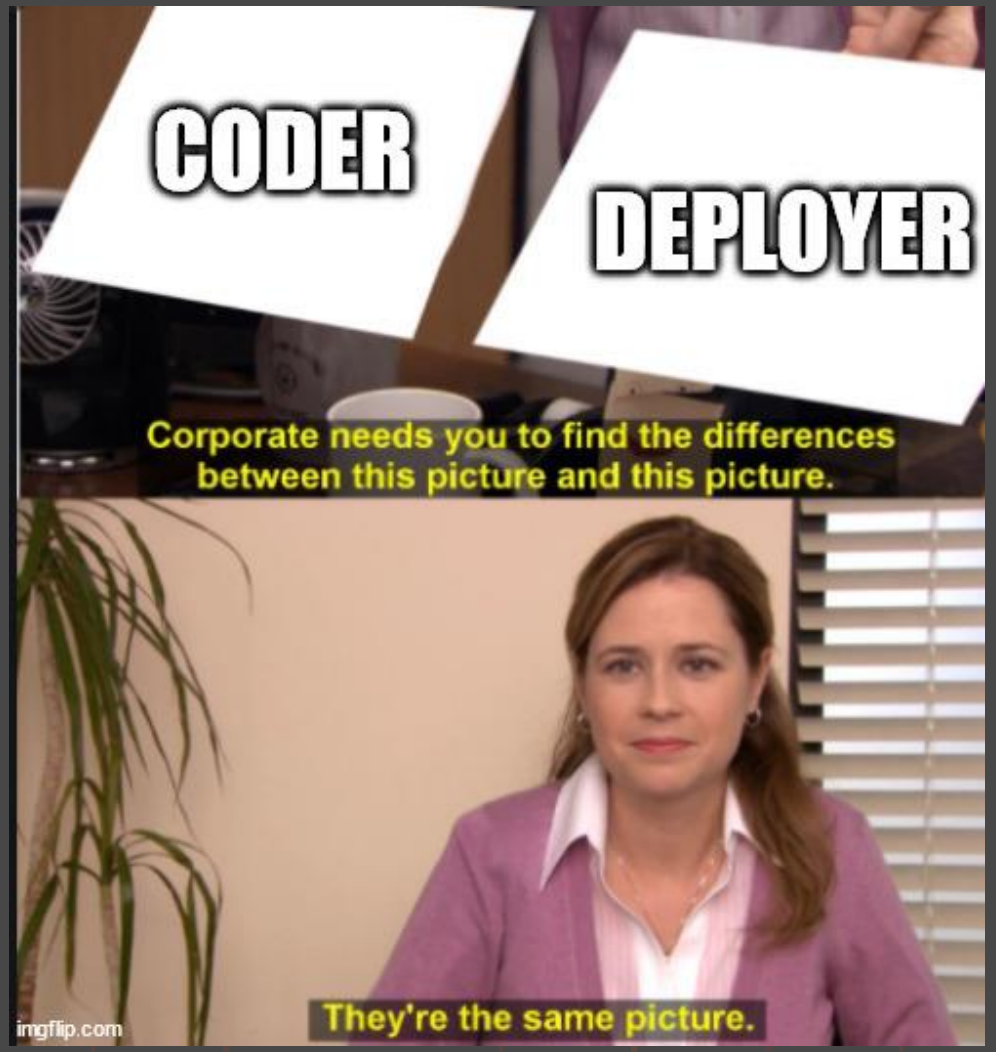
Compliance



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Why use a pipeline?

- Helps enforce good practices:
  - Source control
  - Enables branch policies for code reviews
  - Code must be pushed to remote repo
  - Only publish from the main branch by default
  - Enables approvals and deployment schedules
  - Long-running deployment processes
- Pit of Success

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Why use a pipeline?

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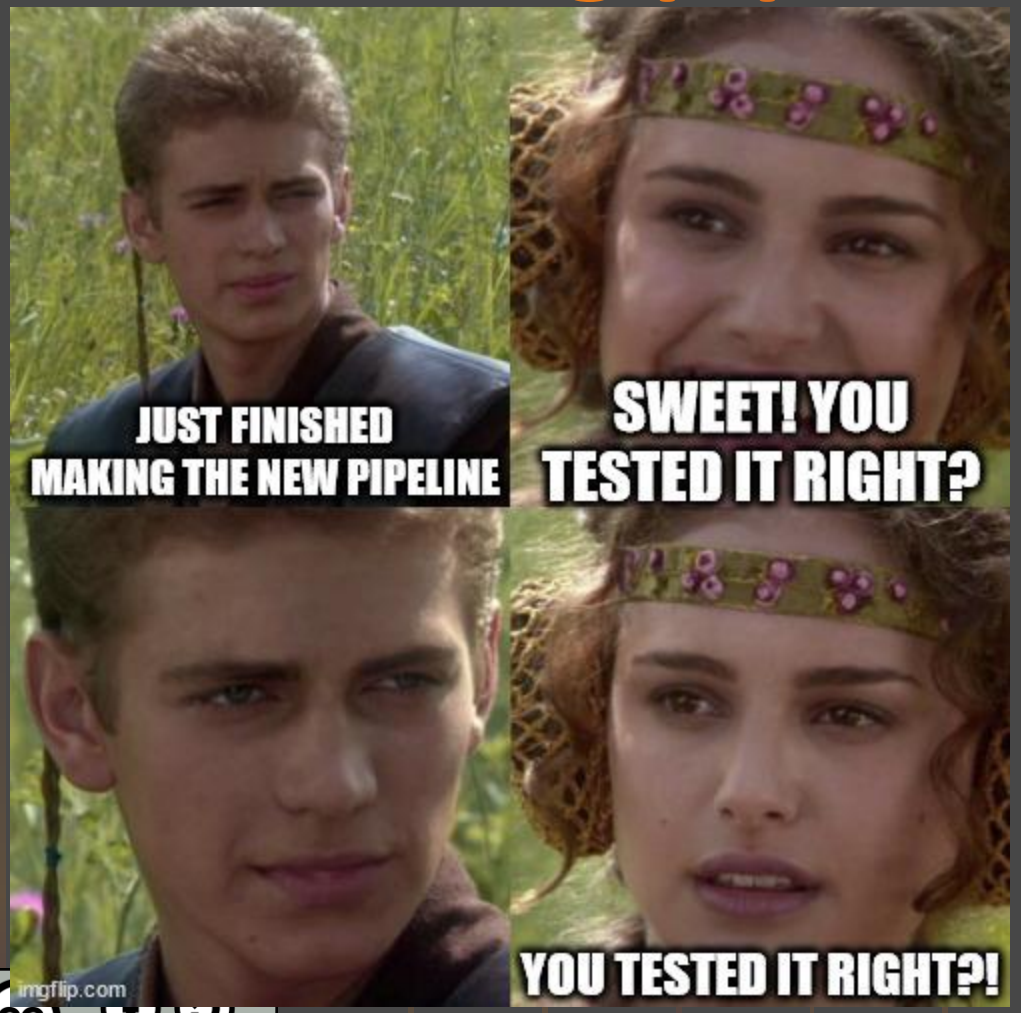
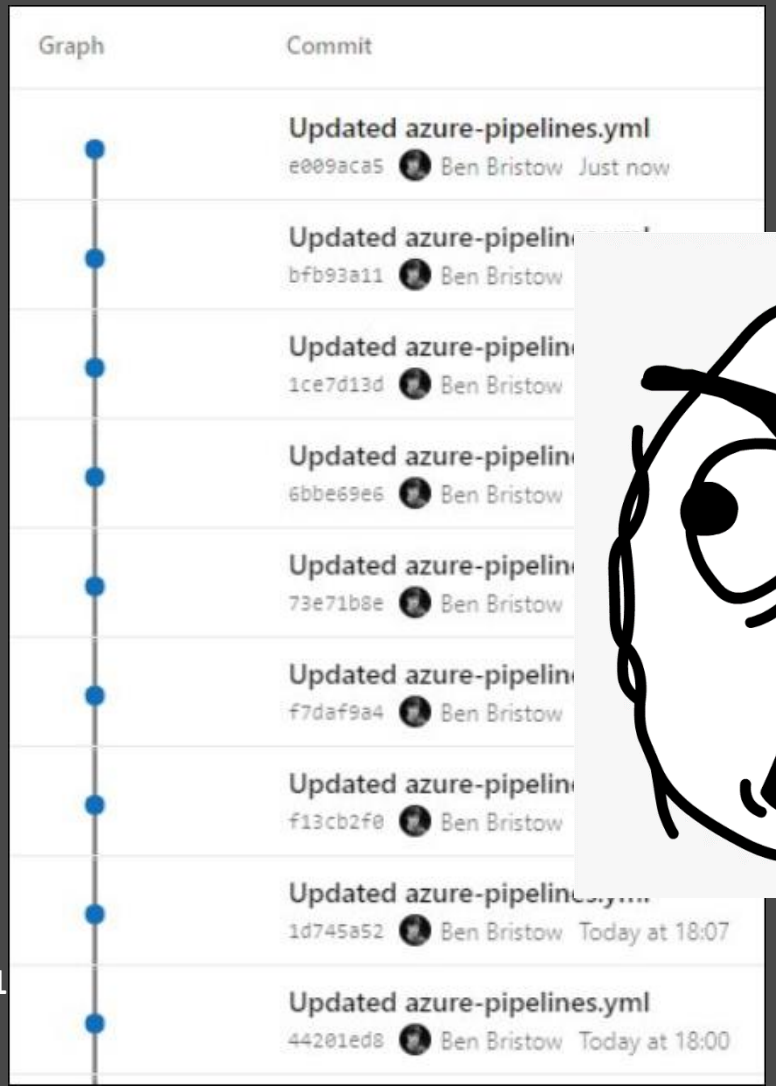
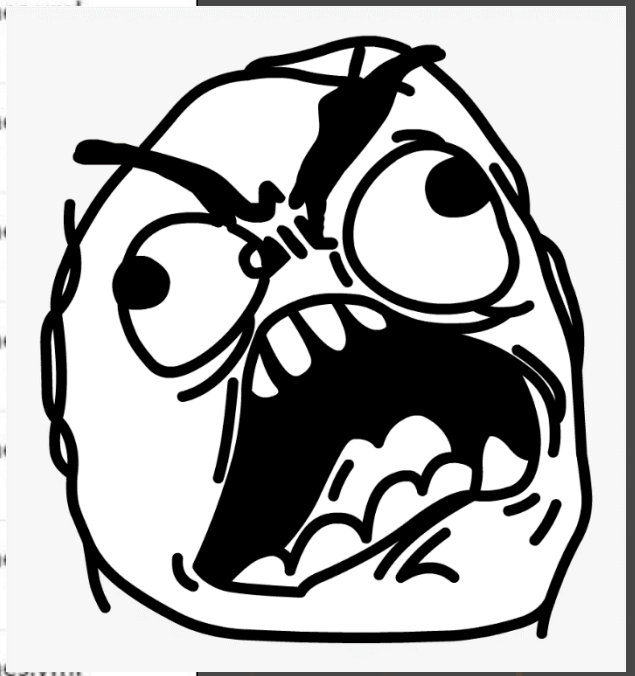
Testing pipelines can be..... frustrating







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Demo

Let's publish a new module!

github.com/deadlydog/PowerShell.ScriptModuleRepositoryTemplate

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Other templates?

- PSModuleTemplate
- ModuleTemplate
  - No docs

- Module.Template
  - AppVeyor for CI/CD

- Stucco
- PSModuleDevelopment

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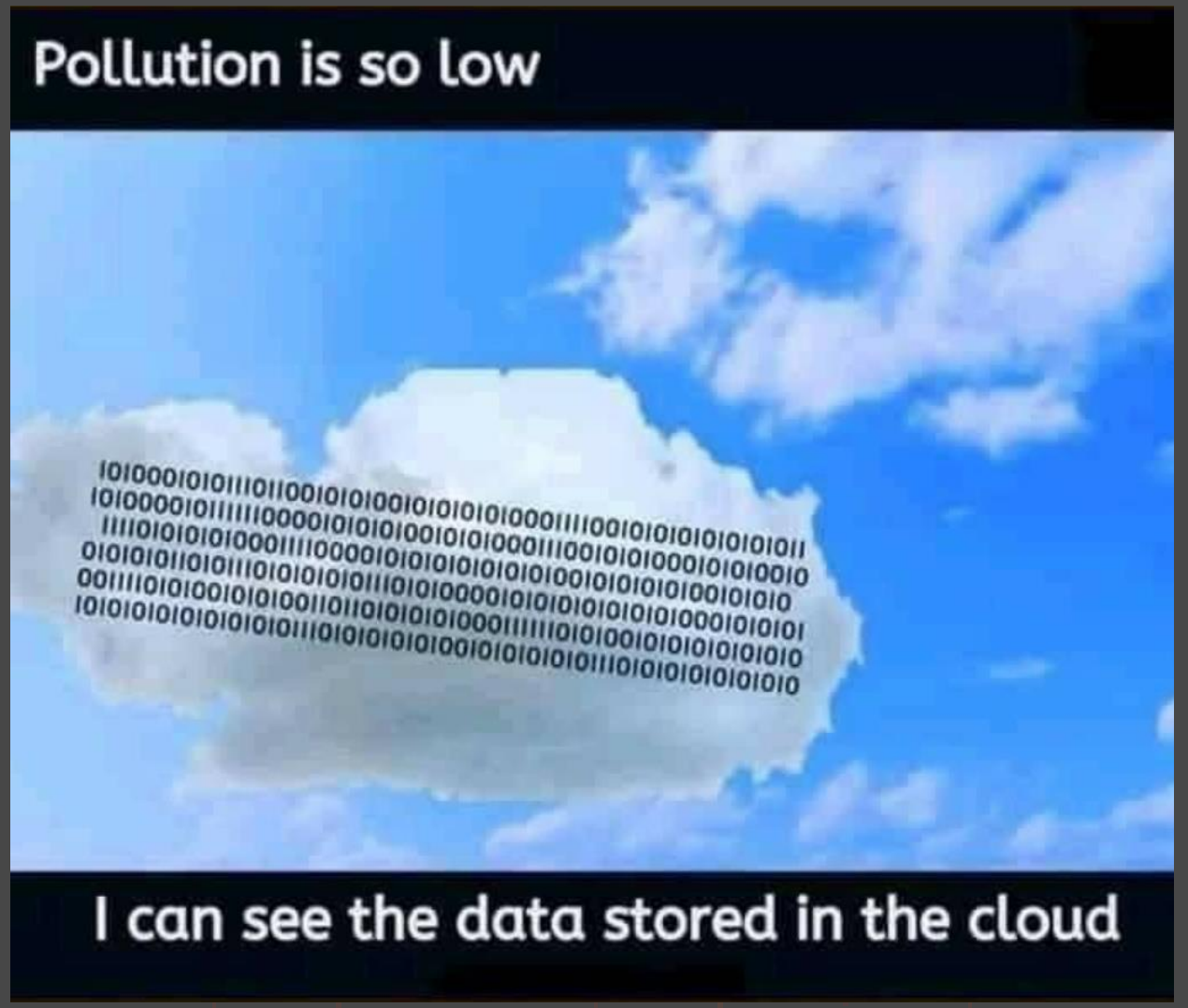
Pipelines aren't all sunshine



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Scripts vs. Marketplace

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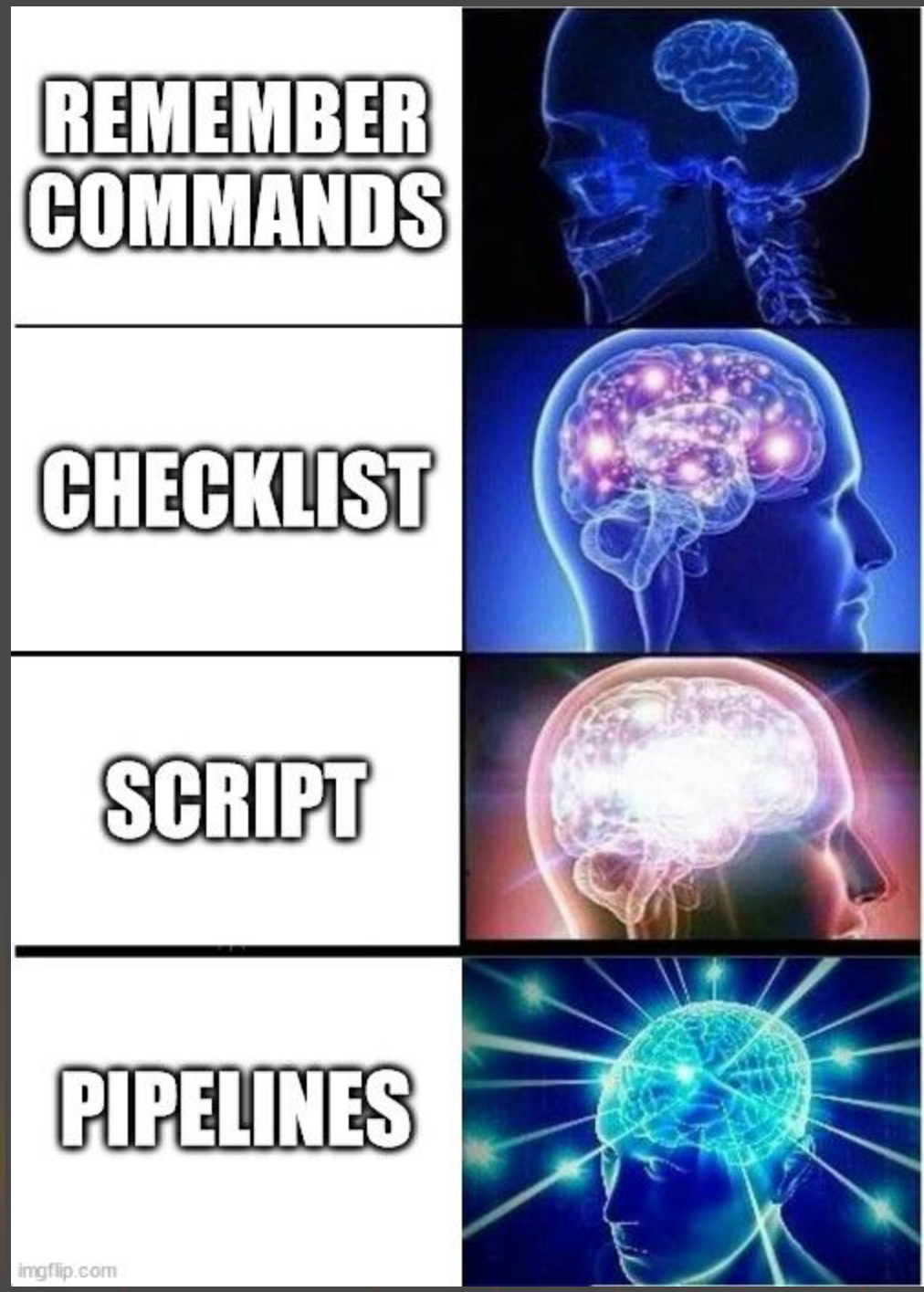
Recap

Pipelines over manual script running:

- Consistency and repeatability
- Logging (persisted) and Visibility
- Security (permissions and API keys)
- Auditing
- Notifications
- Approvals and schedules
- Compliance



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THANK YOU

Please review this session

Demo module/template:
ScriptModuleRepositoryTemplate

Session Review

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github.com/deadlydog

blog.danskingdom.com

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Heading

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Pipeline YAML

- Web editor is king
- VS Code extensions
  - GitHub Actions
  - Azure Pipelines
- Syntax highlighting, autocomplete, etc.

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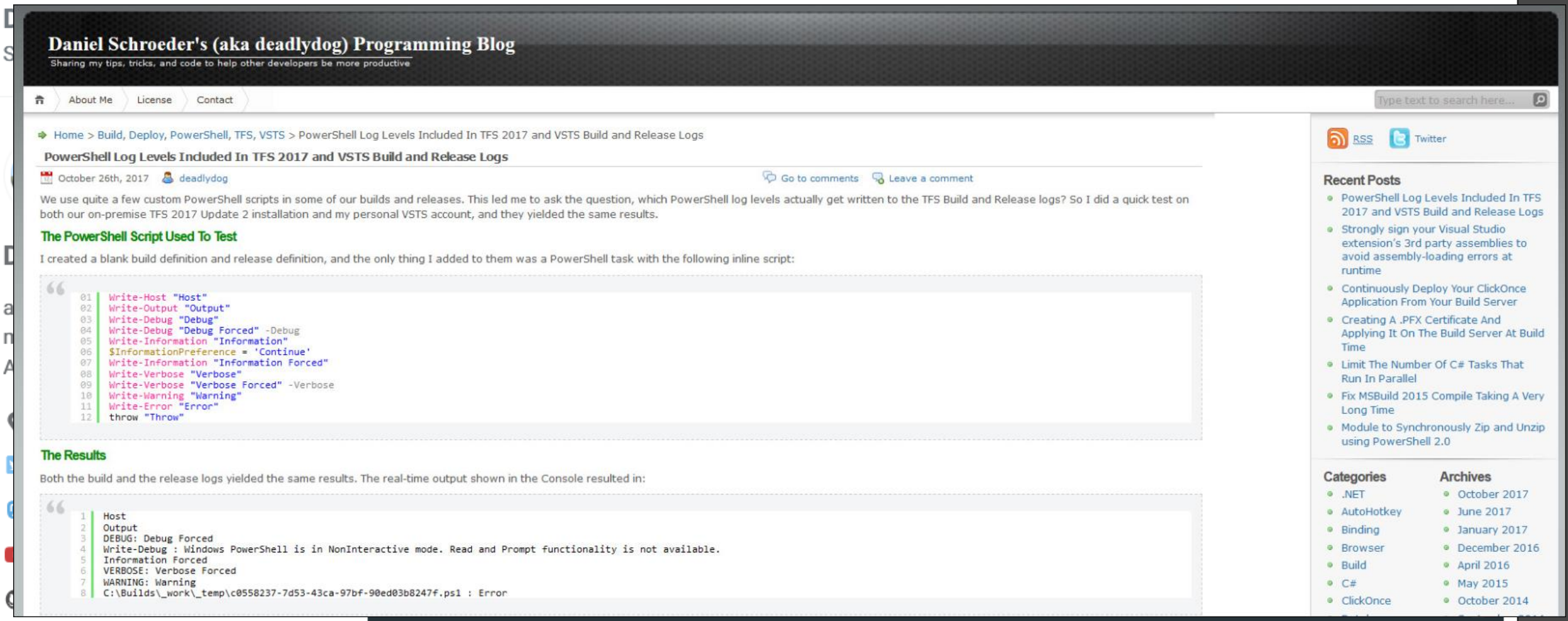

Daniel Schroeder's (aka deadlydog) Programming Blog

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PowerShell Log Levels Included In TFS 2017 and VSTS Build and Release Logs

October 26th, 2017 deadlydog

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We use quite a few custom PowerShell scripts in some of our builds and releases. This led me to ask the question, which PowerShell log levels actually get written to the TFS Build and Release logs? So I did a quick test on both our on-premise TFS 2017 Update 2 installation and my personal VSTS account, and they yielded the same results.

The PowerShell Script Used To Test

I created a blank build definition and release definition, and the only thing I added to them was a PowerShell task with the following inline script:

```
Write-Host "Host"
Write-Output "Output"
Write-Debug "Debug"
Write-Debug "Debug Forced" -Debug
Write-Information "Information"
$InformationPreference = 'Continue'
Write-Information "Information Forced"
Write-Verbose "Verbose"
Write-Verbose "Verbose Forced" -Verbose
Write-Warning "Warning"
Write-Error "Error"
throw "Throw"
```

The Results

Both the build and the release logs yielded the same results. The real-time output shown in the Console resulted in:

```
Host
Output
DEBUG: Debug Forced
Write-Debug : Windows PowerShell is in NonInteractive mode. Read and Prompt functionality is not available.
Information Forced
VERBOSE: Verbose Forced
WARNING: Warning
C:\Builds\_work\_temp\c0558237-7d53-43ca-97bf-90ed03b8247f.ps1 : Error
```

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```
Add-TiPSImportToPowerShellProfile

Set-TiPSConfiguration -AutomaticallyWritePowerShellTip Daily -AutomaticallyUpdateModule Weekly
```

Display a tip

To display a PowerShell tip, simply run the `Write-PowerShellTip` command, or use its alias `tips`.

Why use pipelines?

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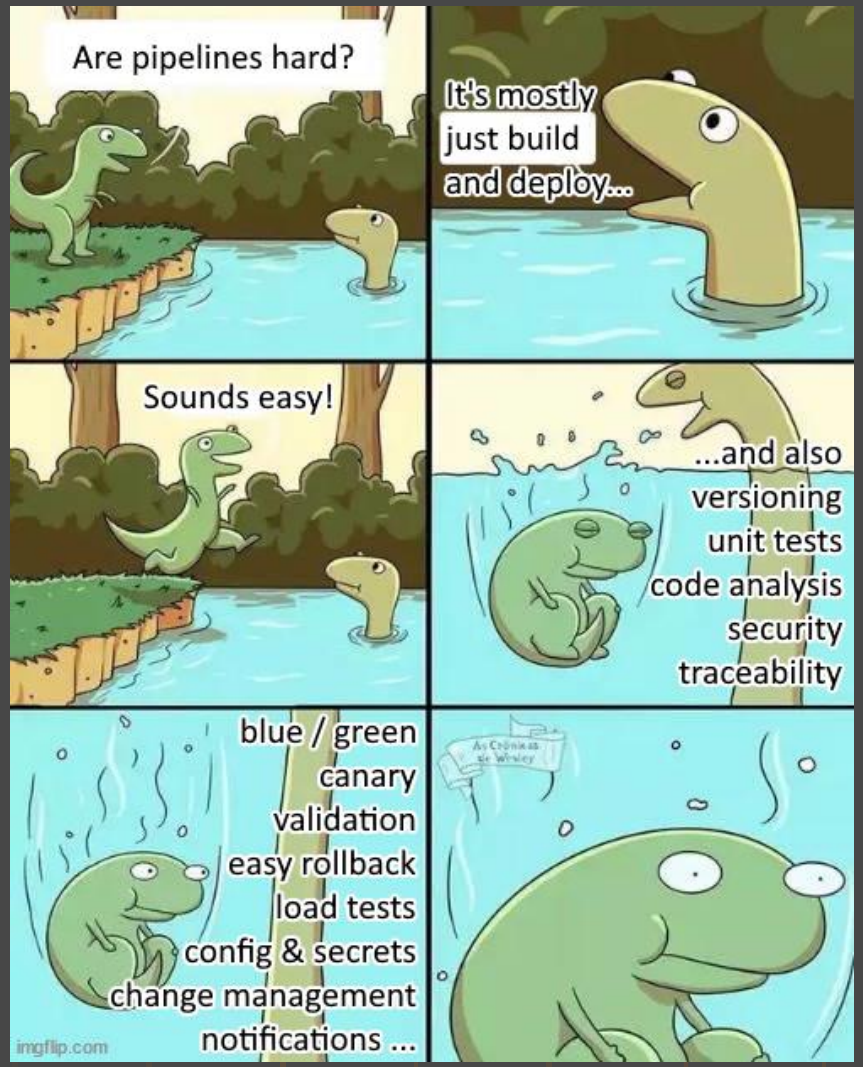
Are pipelines hard?
It's mostly just build and deploy...
Sounds easy!
...and also
versioning
unit tests
code analysis
security
traceability
blue / green
canary
validation
easy rollback
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