

# Death of the SAS<sup>®</sup> Server

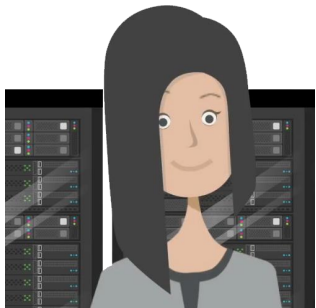
Automated Deployment with SAS Analytic Pro for Containers

# About Me

- SAS User 20+ years.
  - Programming
  - Devops / Sysops
  - Architecture
  - Administration
- Services Manager for Selerity
  - Leading SAS administration and hosting managed service provider
- I've been making SAS talk nicely with others for years



## A Moderate Time Ago in a Workplace Far-Far Away...



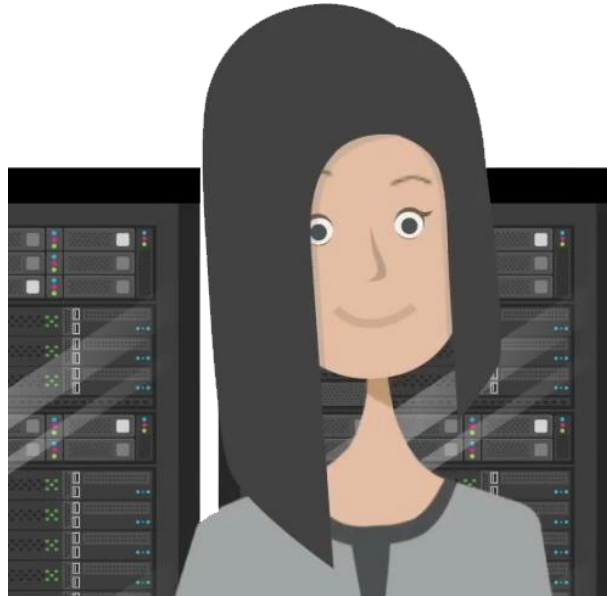
Buffy the Data Slayer

32GB RAM!  
4 CPU!  
4 Internal Disks up to  
512GB!  
Perfect for my Team of  
5!

- Dev + Test + Prod:
  - \$48k Purchase ea.
  - \$22k for the OS ea.
  - \$32k for the Server Install ea.
  - \$230k for Software
  - \$55k for the Software Install ea.
  - \$25k per month Storage + Backups
- 8 Weeks Lead Time
- 12 Weeks Server Install
- 4 Weeks Software Install

**\$1.5m + 24 weeks**

12 Months Later...



Buffy the Data Failure

## Modern SAS

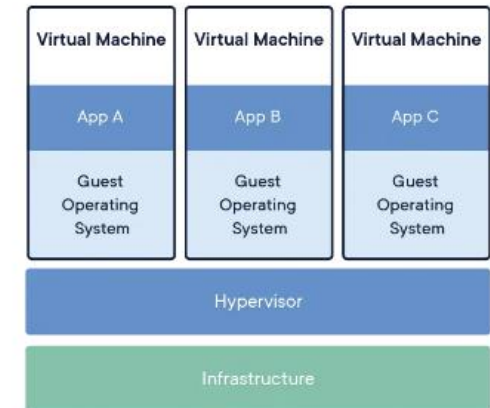
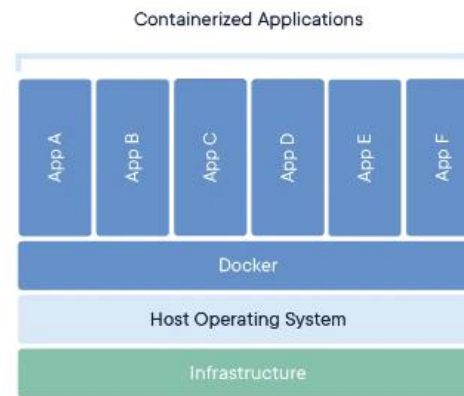


OPENSIFT



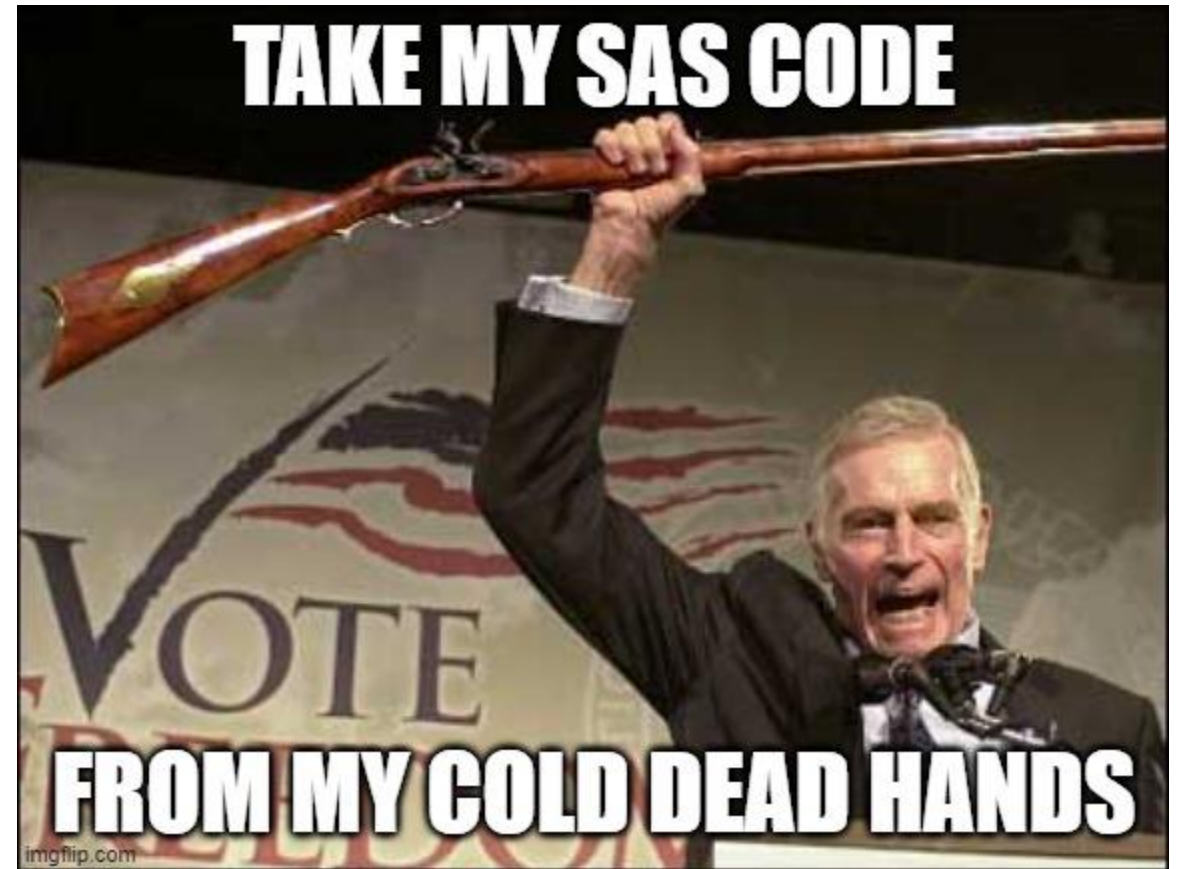
# A little about Containers

- Different to VM's
- Launched in 2013 as part of the open-source Docker Engine
- built on existing concepts used in operating systems like Solaris and other unix based operating systems
- Abstract application and deployment dependencies
- Run against a common OS kernel
- Run within an isolated user space.

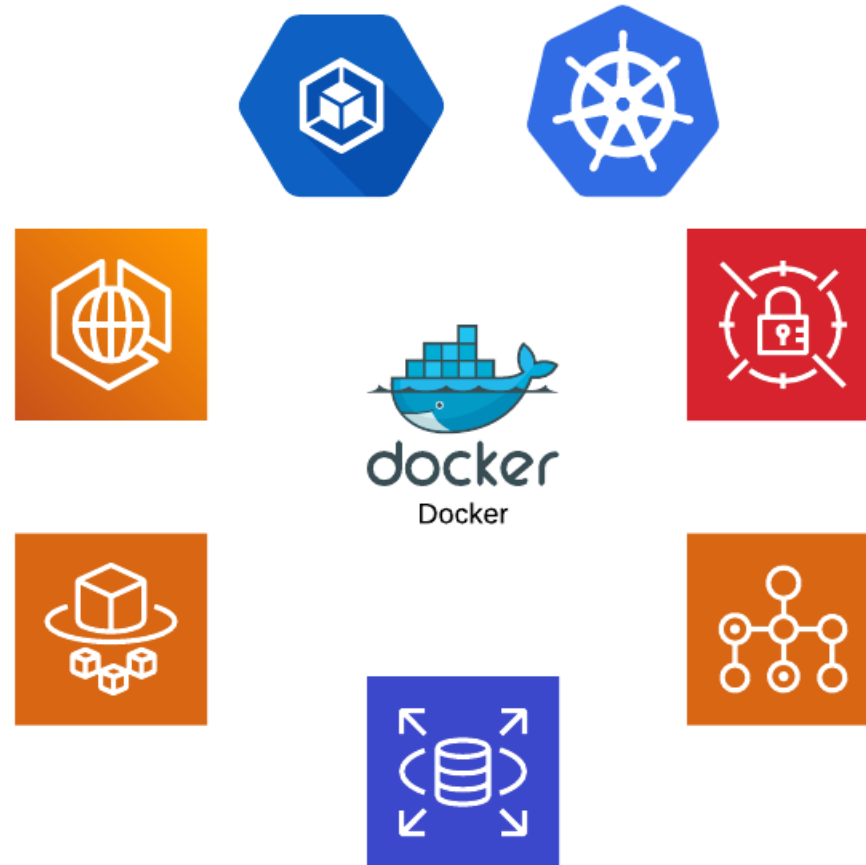


## SAS Analytics Pro

- Two Flavours
  - Analytics Pro
  - Analytics Pro Advanced
- Programming Only Interface



# Serverless

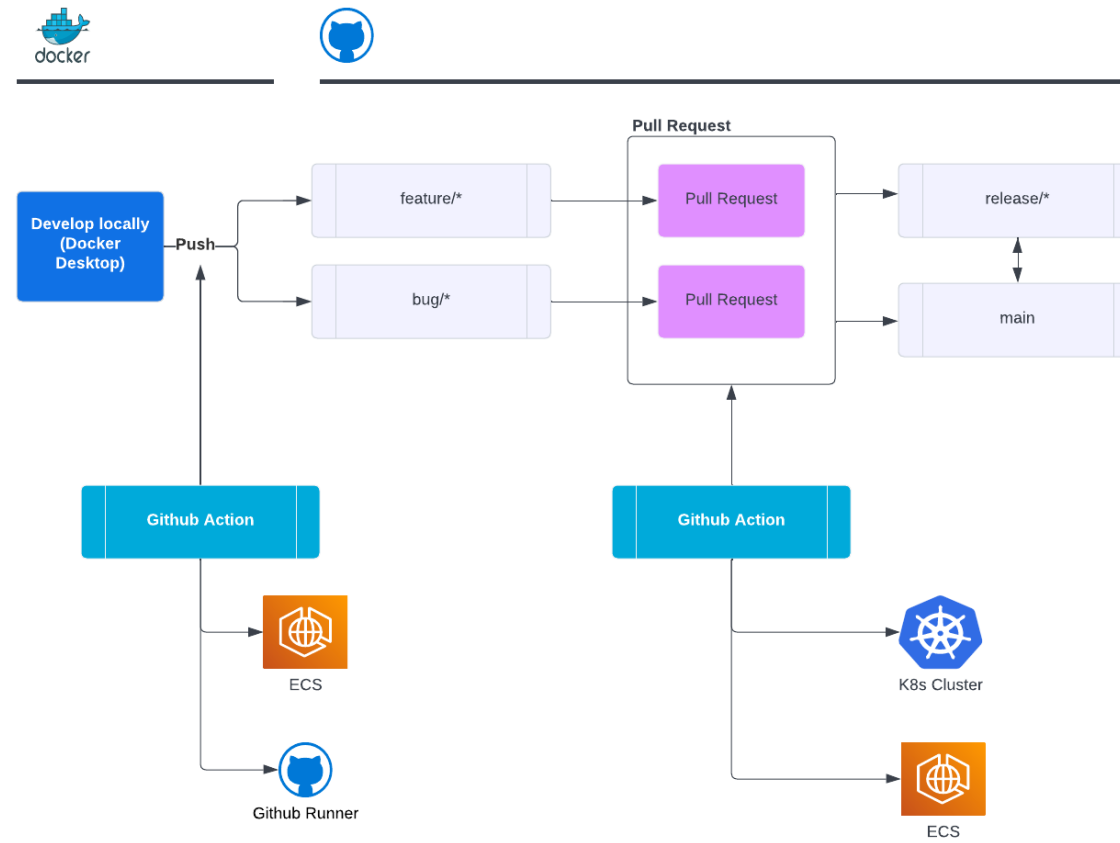




## Version Control – It's Key

- Don't Know it or use it? Learn it.
- Vital for Automated Deployment
- Start with a common project template
- Define a branching strategy
- scripts and webhooks to automate the boring stuff.

# Branch Driven Deployment



# Automate, Automate, Automate

- CI/CD workflows based on your branches
  - Github Actions
  - Gitlab CI/CD
  - Bitbucket Pipelines
  - Branch naming patterns deploy to different environments
- Use the SAS Orders API
- Use Linting and Testing Tools
  - Sasjs, Fake4sas, Selerity Developer Suite, Sasunit, Pre-commit
- Take a Configuration Management Approach.
  - Separate your configuration from your logic
  - Standardise your code
  - Store your configuration in your VCS
  - Separate local development / production config.
- Consider security
  - Least privilege
  - Secrets

# Considerations

- Do you need dev + test + prod?
  - If you are just using studio for analysis why bother?
  - Take advantage of the laptops / desktops you procure for your users.
- Why are you deploying?
  - Different serverless technologies suit different use cases
    - Interactive use (Studio)
    - Batch use?
- Consider the resources you need to consume and produce
  - Networking
  - Performance

# Conclusion

- Want to know more?
  - Hit me up at the bar
  - <https://selerity.com.au>