



# Continuous Integration Pipelines with Nomad, Vault and Jenkins

Bram Vogelaar  
@attachmentgenie

## **Monday Morning: Standup time!**

"The intern "solved" the problem with \$product by "fixing" the database connection"



**Wait! What?**



# \$problems++?

```

-
= (
    255,
    lambda
    V, B, c
    : c and Y(V*V+B, B, c
    -1) if (abs(V)<6) else
    2+c-4*abs(V)**-0.4)/i
    ) ; v, x=1500,1000; C=range(v*x
    ); import struct; P=struct.pack; M,\
j = '<QIIHHHH', open('M.bmp', 'wb').write
for x in j('BM'+P(M, v*x*3+26, 26, 12, v, x, 1, 24)) or C:
    i, Y=_; j(P('BBB', *(lambda T:(T*80+T**9
    *i-950*T**99, T*70-880*T**18+701*
    T**9, T*i**(1-T**45*2)))(sum(
    Y(0, (A%3/3.+X%v+(X/v+
    A/3/3.-x/2)/1j)*2.5
    /x -2.7, i)**2 for \
    A in C
    [:9]))
    /9)
    )

```





# What is required for a business to survive?

- Faster time to market
  - Features go live in hours vs years
- In a safer (Secure) Reliable fashion
  - Fully automated
- Happier {customers, developers, managers, investors}



# Jenkins

- Open-source automation server
- Golden standard since ~~2011~~/2005
- Written in Java
- Has elaborate and extensive plugin system

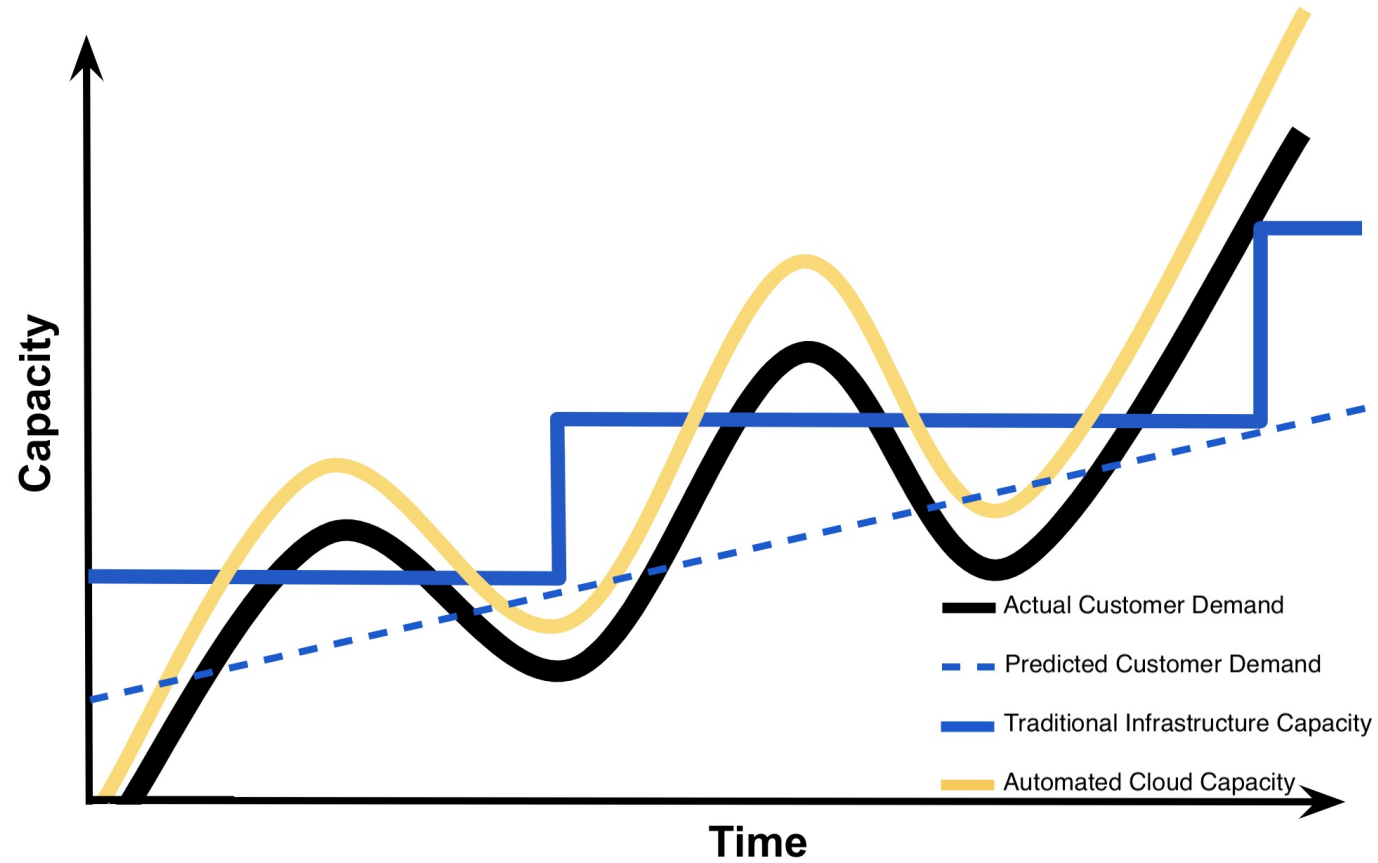


**Jenkins**

<https://www.jenkins.io/>



# The CI Capacity Problem



# Nomad



- Open-Source tool for dynamic workload scheduling
- Batch, containerized, and non-containerized applications.
- Has native service discovery (Consul) and secret management (Vault) integrations.
- Has token based access system.
- Jobs written in (H)ashiCorp (C)onfiguration (L)anguage
- Jenkins integration via plugin

<https://www.nomadproject.io/>  
<https://plugins.jenkins.io/nomad/>





**Demo Time!**



# Vault



- Open-Source tool to do secrets management
- Secure, store and tightly control access to tokens, passwords, encryption keys for protecting secrets and other sensitive data using a UI, CLI, or HTTP API.
- Certificate management
- Password rotation (e.g. SSH, MySQL)
- Jenkins integration via plugin

<https://www.vaultproject.io/>  
<https://plugins.jenkins.io/hashicorp-vault-plugin/>



# Q.E.D?

- Deployed Jenkins on Nomad
  - Scripted plugin installation
  - Configured using Jenkins as Code
  - Automatically configured Jenkins to auto scale workers on Nomad
- Automatically created Jenkins jobs using JobDSL
- Deployed an application from a nomad-pack registry all the way to production
- Injected a Vault secret into the application



# Contact

bram@attachmentgenie.com

@attachmentgenie

<https://www.slideshare.net/attachmentgenie>





The Floor is yours...

Questions ?

