Skills modernization for the Virtual Infrastructure Admin

Take the first step using VEBA

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Staff Cloud Solution Architect, VMC on AWS

Personal Blog: http://www.patrickkremer.com
Twitter: @KremerPatrick

October 2020

vmware vEXPERT 2020

vmware

About Me

VMware Employee since 2014 – Presales SE

Started working with VMware in 2006 - ESX 3.0

Primarily a sysadmin

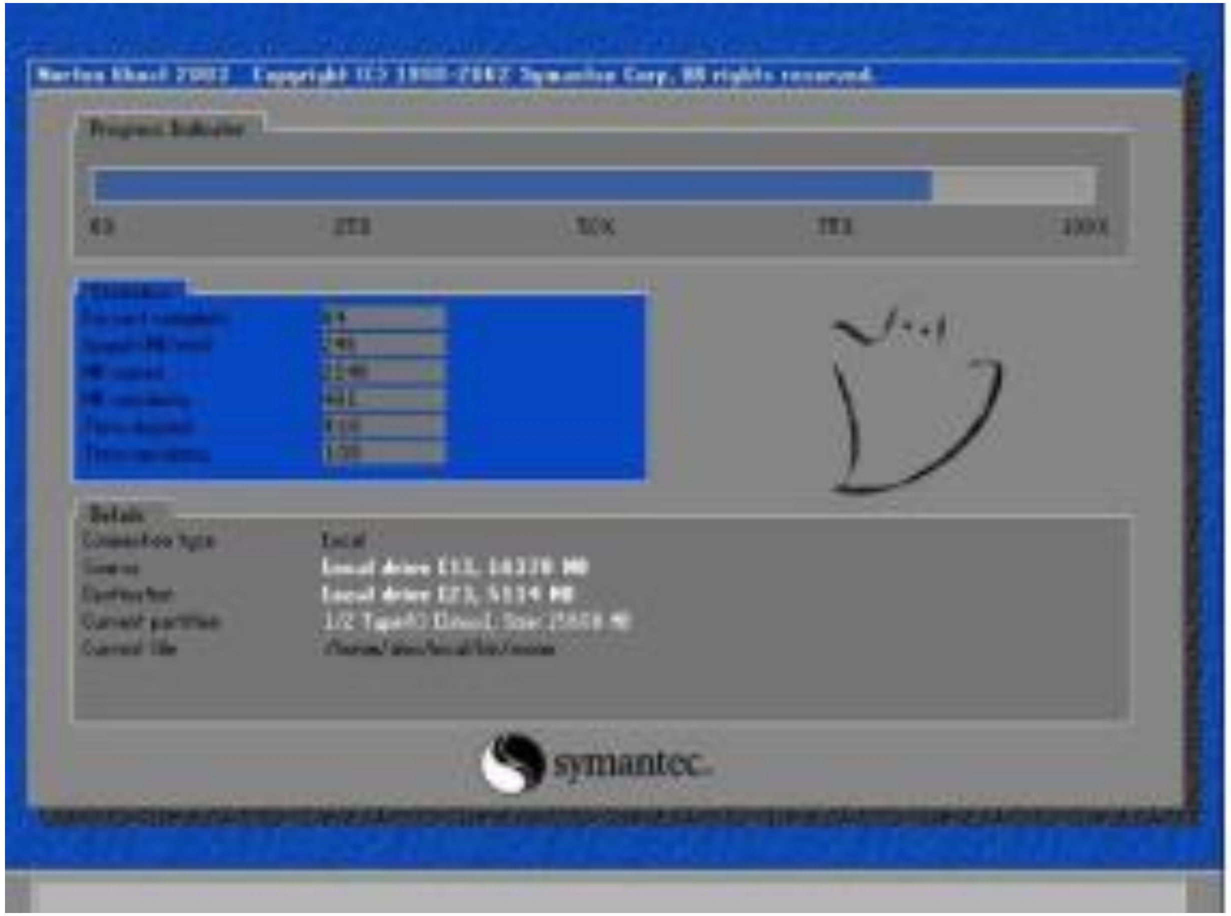
Limited programming background

Currently a VMware Cloud Solution Architect - VMC

Why Modernize your Skills?

Obsolescence

Having no development skills will soon be equal to having no virtualization skills today.


Norton Ghost 2003 Copyright (C) 1998-2002 Symantec Corp. All rights reserved.

Progress Indicator

0% 25% 50% 75% 100%

Statistics

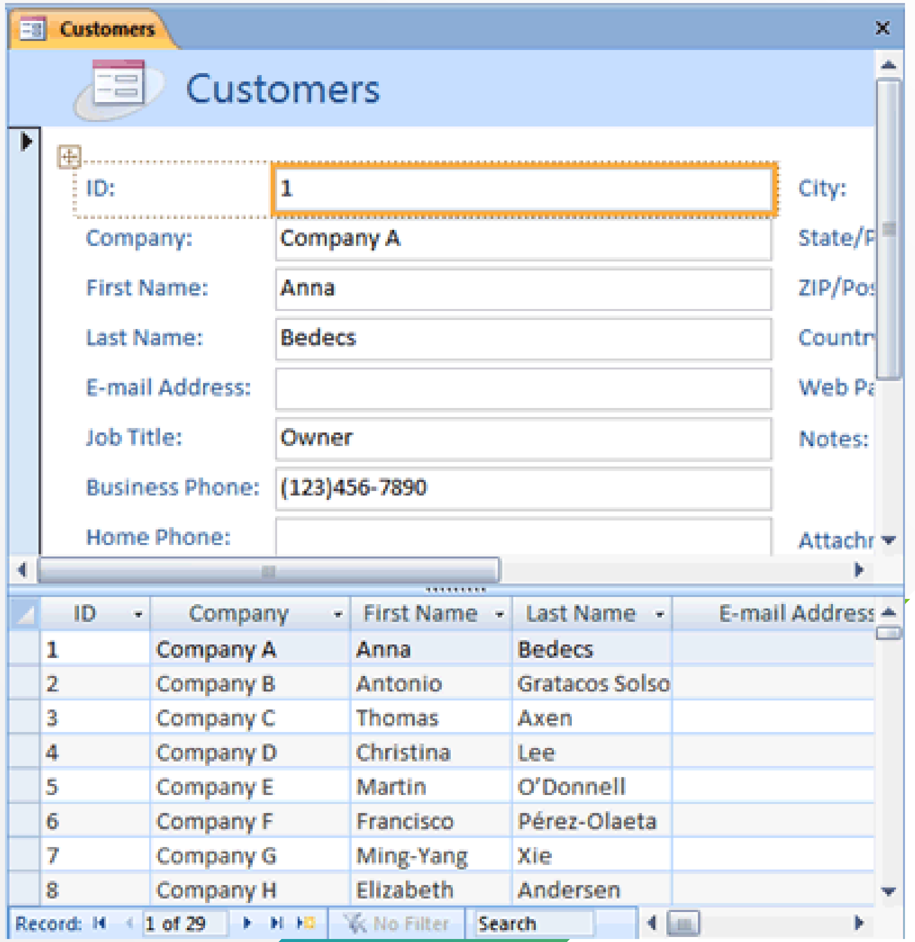
Percent complete [illegible]
Speed (MB/min) [illegible]
MB copied [illegible]
MB remaining [illegible]
Time elapsed [illegible]
Time remaining [illegible]

Details

Connection type Local
Source Local drive [1], 10239 MB
Destination Local drive [2], 5114 MB
Current partition 1/2 Type:83 [Linux], Size: 2560 MB
Current file /home/[illegible]/local/bin/[illegible]

In the beginning

Microsoft Visual Basic for Applications



Customers

ID:	1	City:
Company:	Company A	State/P
First Name:	Anna	ZIP/Pos
Last Name:	Bedecs	Countr
E-mail Address:		Web Pa
Job Title:	Owner	Notes:
Business Phone:	(123)456-7890	
Home Phone:		Attachr

ID	Company	First Name	Last Name	E-mail Address
1	Company A	Anna	Bedecs	
2	Company B	Antonio	Gratacos Solso	
3	Company C	Thomas	Axen	
4	Company D	Christina	Lee	
5	Company E	Martin	O'Donnell	
6	Company F	Francisco	Pérez-Olaeta	
7	Company G	Ming-Yang	Xie	
8	Company H	Elizabeth	Andersen	

Since 2006

All system administration, all VMs, all 3-tier apps, all the time

APP

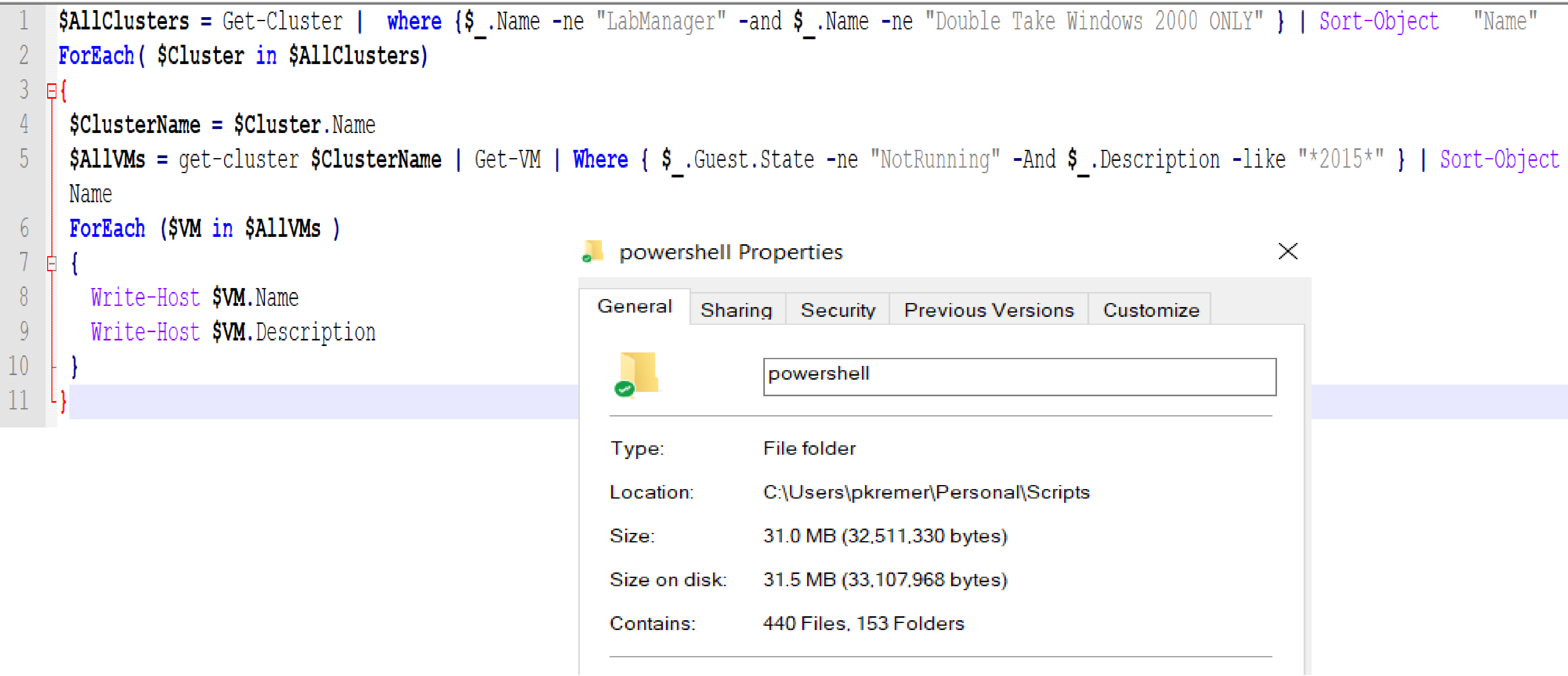
Three Tier Apps

vm

Virtual Machines

vSphere

Programming = Scripting



```
$AllClusters = Get-Cluster |  where {$_.Name -ne "LabManager" -and $_.Name -ne "Double Take Windows 2000 ONLY" } | Sort-Object  "Name"
ForEach( $Cluster in $AllClusters)
{
 $ClusterName = $Cluster.Name
 $AllVMs = get-cluster $ClusterName | Get-VM | Where { $_.Guest.State -ne "NotRunning" -And $_.Description -like "*2015*" } | Sort-Object
 Name
 ForEach ($VM in $AllVMs )
 {
   Write-Host $VM.Name
   Write-Host $VM.Description
 }
}
```

powershell Properties

powershell

Type: File folder

Location: C:\Users\pkremer\Personal\Scripts

Size: 31.0 MB (32,511,330 bytes)

Size on disk: 31.5 MB (33,107,968 bytes)

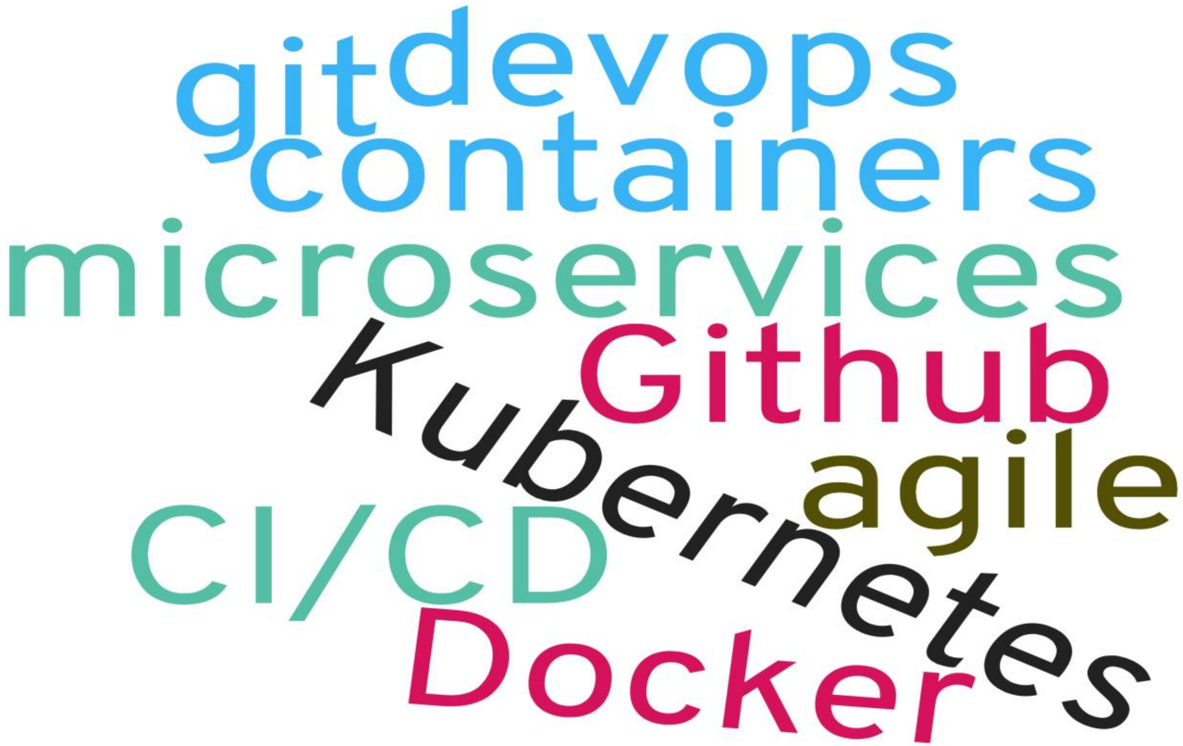
Contains: 440 Files, 153 Folders

2013

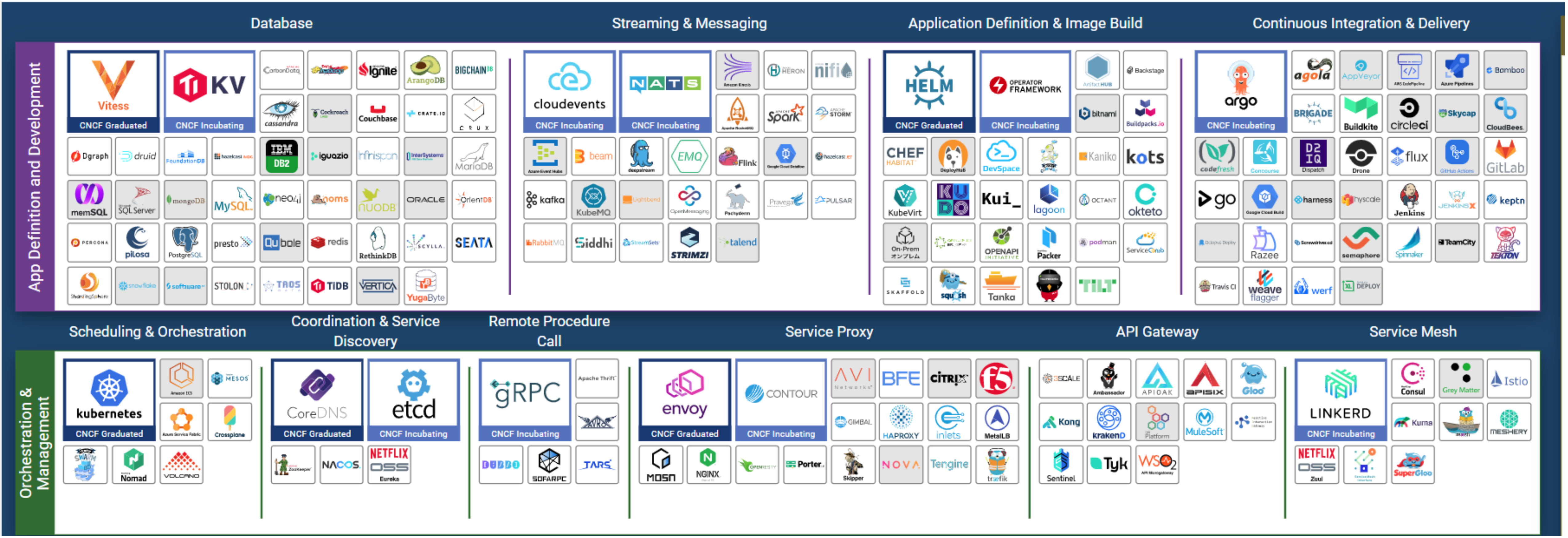
VMware

NSX

2020


git
devops
containers
microservices
Kubernetes
Github
agile
CI/CD
Docker

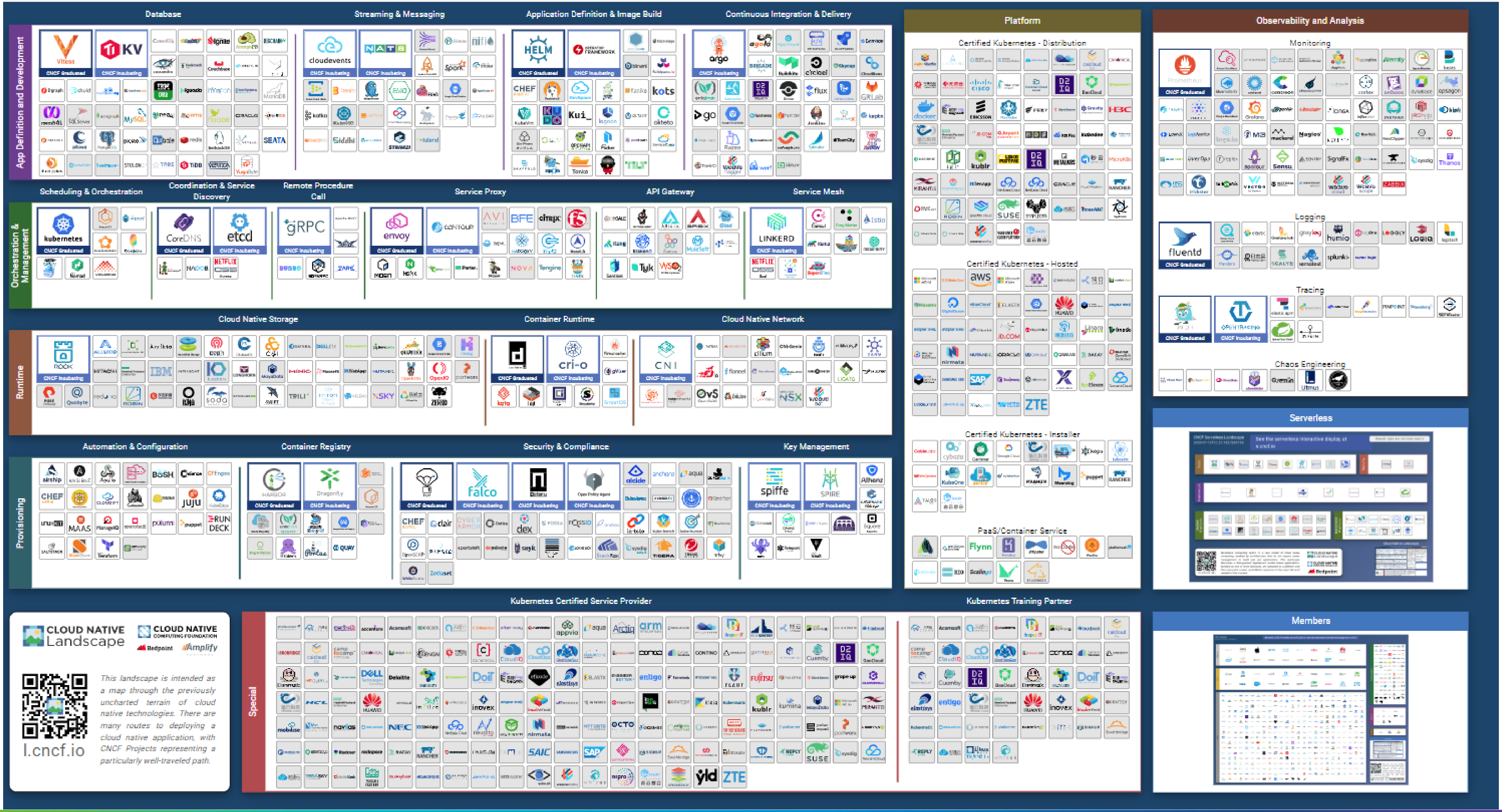
Cloud Native Landscape



Source: https://landscape.cncf.io/

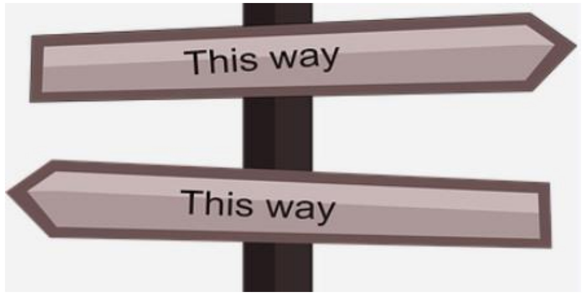
Cloud Native Landscape

Source: https://landscape.cncf.io/

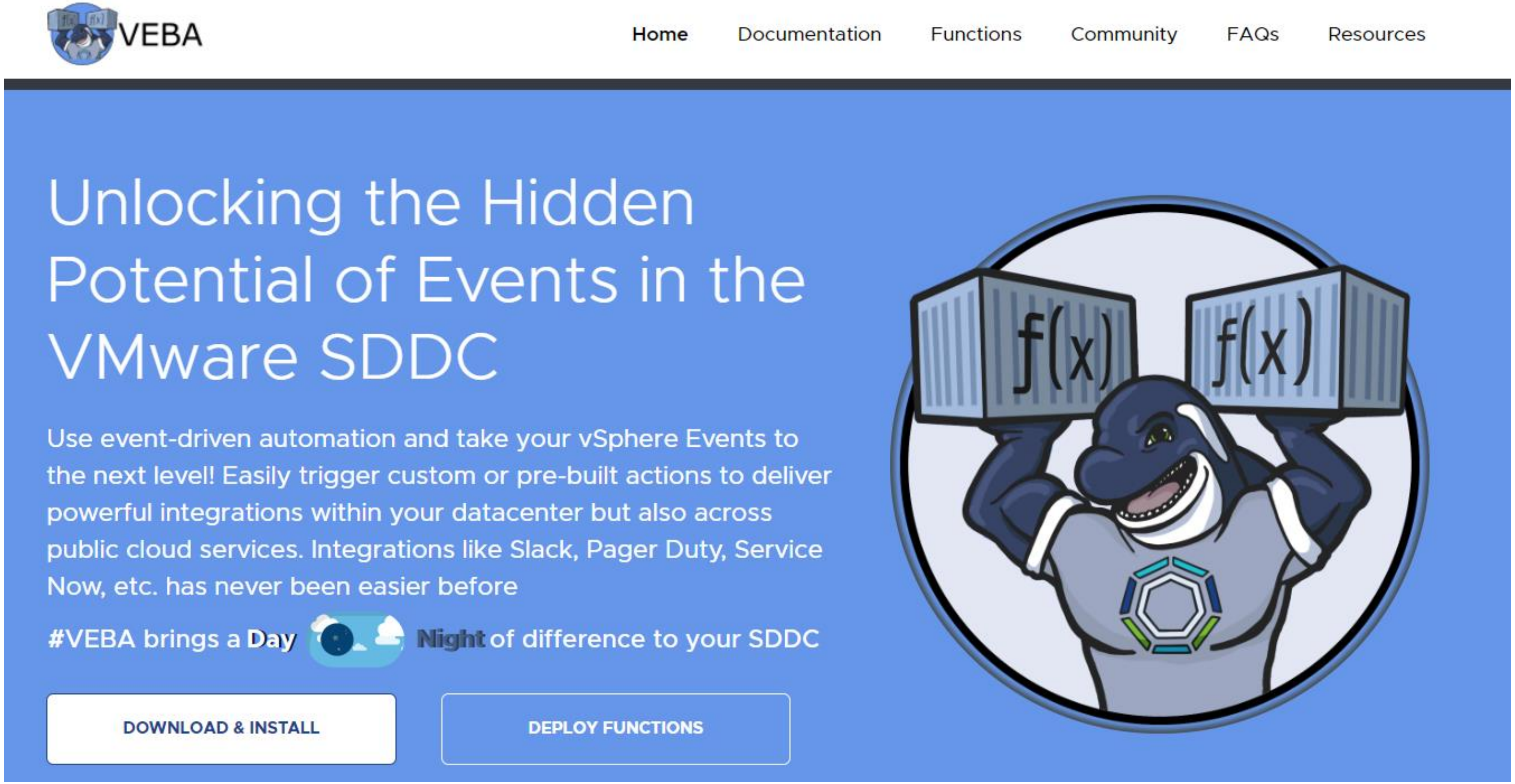

App Definition and Development
Database
Streaming & Messaging
Application Definition & Image Build
Continuous Integration & Delivery
Orchestration & Management
Scheduling & Orchestration
Coordination & Service Discovery
Remote Procedure Call
Service Proxy
API Gateway
Service Mesh
Runtime
Cloud Native Storage
Container Runtime
Cloud Native Network
Provisioning
Automation & Configuration
Container Registry
Security & Compliance
Key Management
Platform
Certified Kubernetes - Distribution
Certified Kubernetes - Hosted
Certified Kubernetes - Installer
PaaS/Container Service
Observability and Analysis
Monitoring
Logging
Tracing
Chaos Engineering
Serverless
Members
Special
Kubernetes Certified Service Provider
Kubernetes Training Partner
CNCF Graduated
CNCF Incubating
CLOUD NATIVE Landscape
CLOUD NATIVE COMPUTING FOUNDATION
Redpoint
Amplify
l.cncf.io

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

Where to start?



VMware Event Broker Appliance



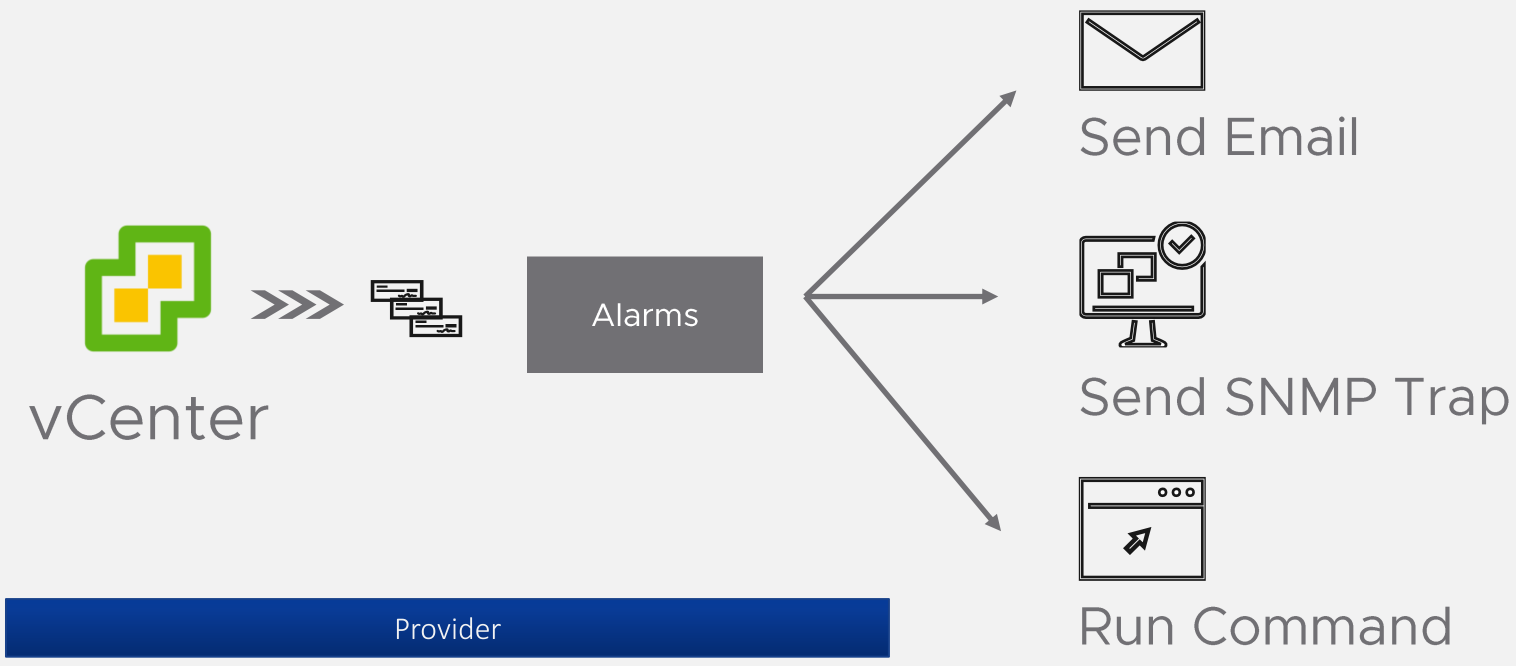
Unlocking the Hidden Potential of Events in the VMware SDDC

Use event-driven automation and take your vSphere Events to the next level! Easily trigger custom or pre-built actions to deliver powerful integrations within your datacenter but also across public cloud services. Integrations like Slack, Pager Duty, Service Now, etc. has never been easier before

#VEBA brings a Day Night of difference to your SDDC

vCenter Event Driven Automation

Trigger Actions based on vCenter Events



Alarms allows limited and structured workflow capability

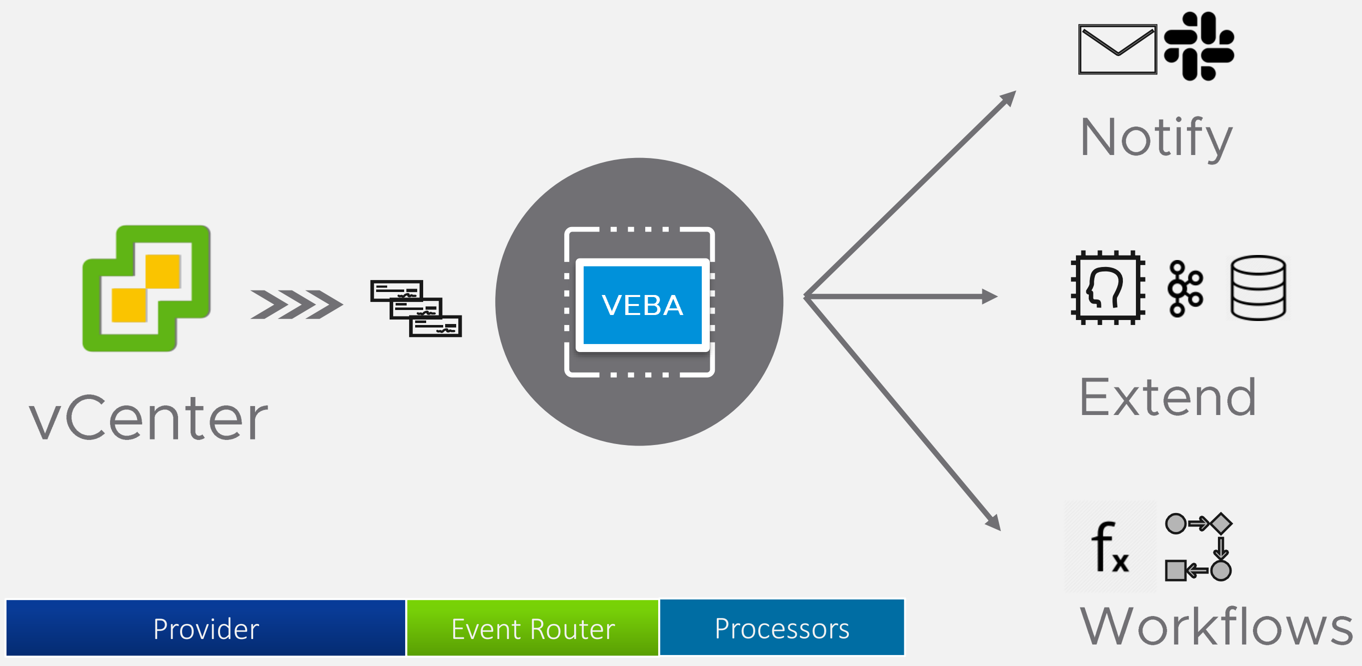
- Send Email
- Send SNMP traps
- Run Commands or Scripts

This limits innovation as this functionality needs

- vCenter access to setup Alarms
- Learning curve to implement and deploy code
- Redundant connectivity or platform code
- Added overhead on vCenter.

vCenter Event Driven Automation with VEBA

Trigger Actions based on vCenter Events



VMware Event Broker Appliance allows seamless extension of the vCenter platform

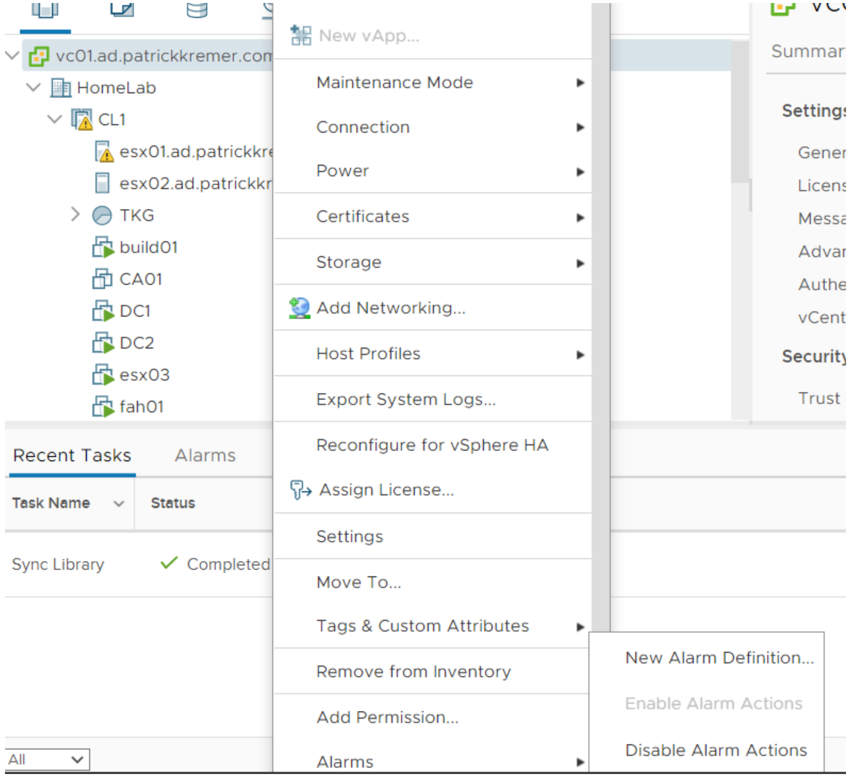
- Deployed as an appliance
- Enables innovation without requiring vCenter UI access
- Can enable fan-out messaging patterns

Function as a Service - Write and Execute code written in any language

Get started quickly with prebuilt functions maintained by the community.

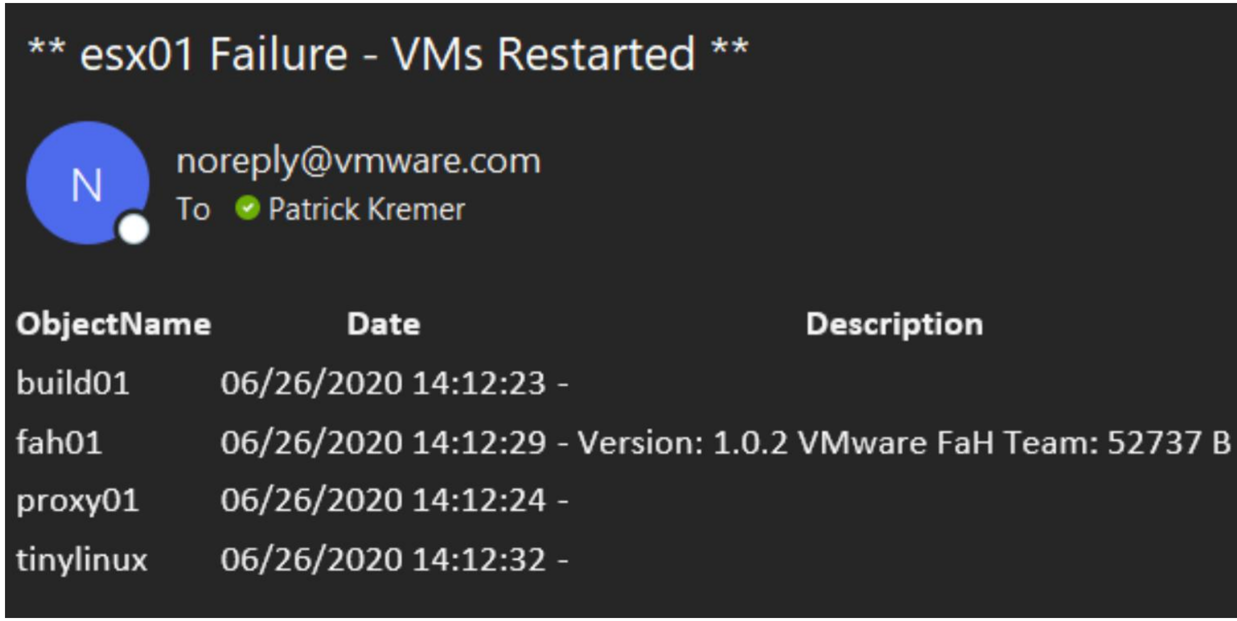
Two examples of VEBA functions - PowerCLI

Maintenance Mode Alarms



HA Event Notification

vsish -e set /reliability/crashMe/Panic 1



** esx01 Failure - VMs Restarted **

N noreply@vmware.com
To Patrick Kremer

ObjectName	Date	Description
build01	06/26/2020 14:12:23 -	
fah01	06/26/2020 14:12:29 -	Version: 1.0.2 VMware FaH Team: 52737 B
proxy01	06/26/2020 14:12:24 -	
tinylinux	06/26/2020 14:12:32 -	

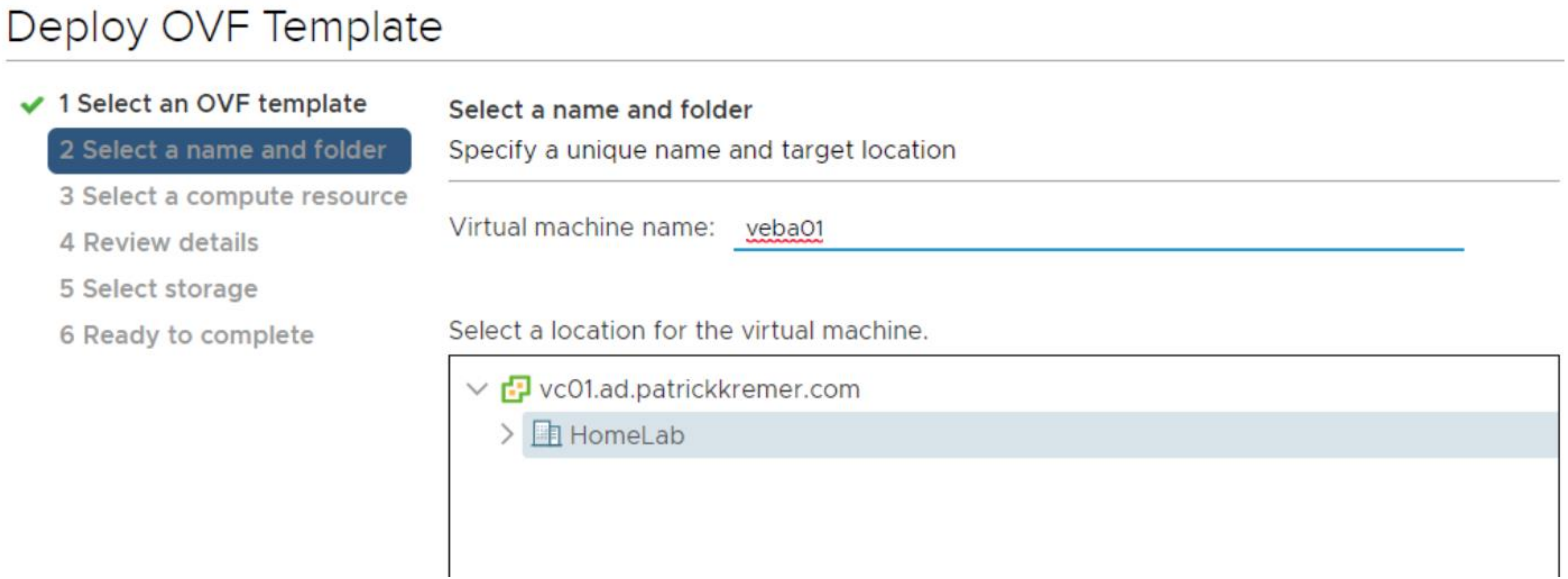
Other VEBA functions

Tag a VM based on a vCenter event

Send a Slack message when a VM is reconfigured

Notify Pagerduty when a disk alarm is tripped

November 2019 - VEBA can do that



Deploy OVF Template

✓ 1 Select an OVF template

2 Select a name and folder

3 Select a compute resource

4 Review details

5 Select storage

6 Ready to complete

Select a name and folder

Specify a unique name and target location

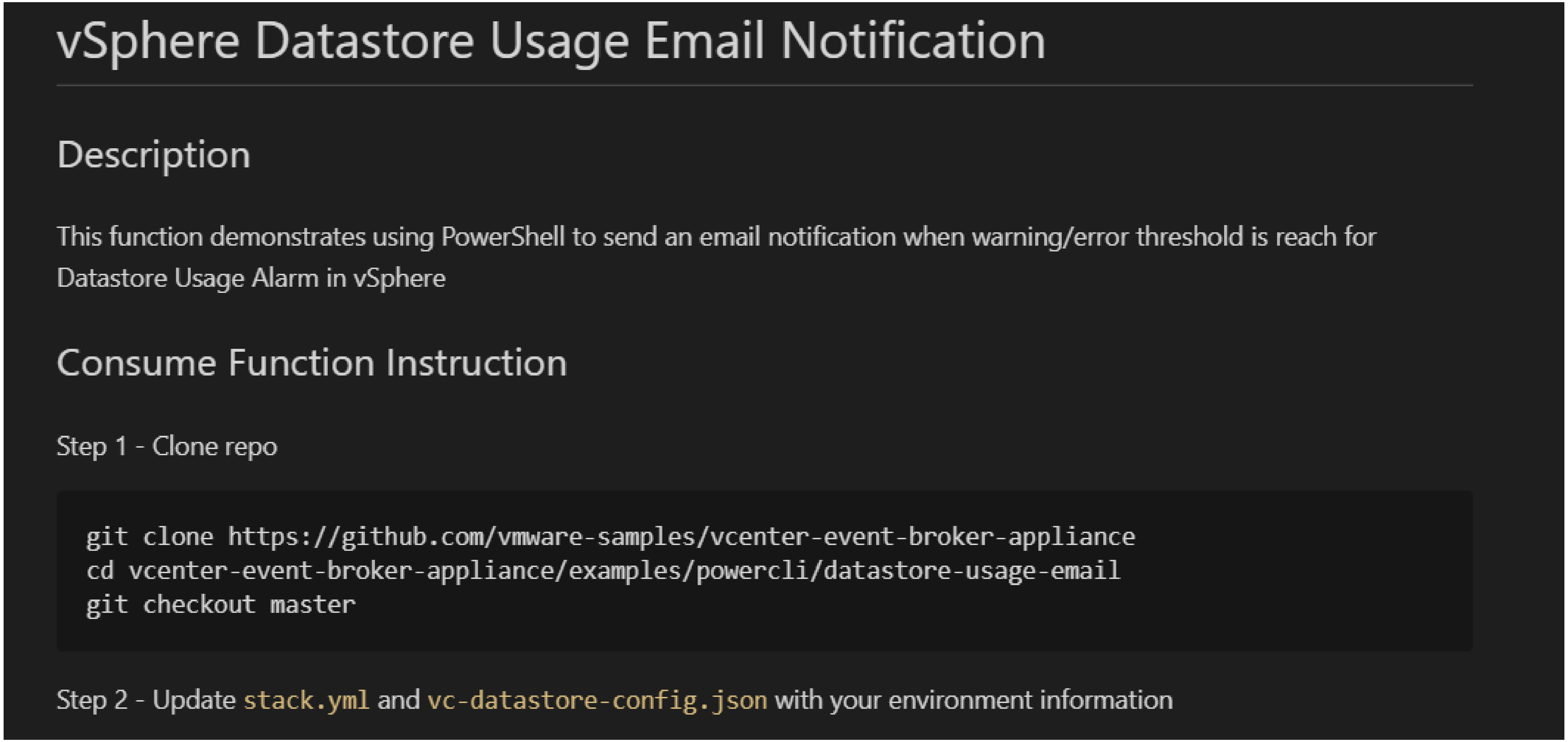
Virtual machine name: veba01

Select a location for the virtual machine.

- vc01.ad.patrickkremer.com
  - HomeLab

VEBA Function Documentation

Do what with the what?



vSphere Datastore Usage Email Notification

Description

This function demonstrates using PowerShell to send an email notification when warning/error threshold is reach for Datastore Usage Alarm in vSphere

Consume Function Instruction

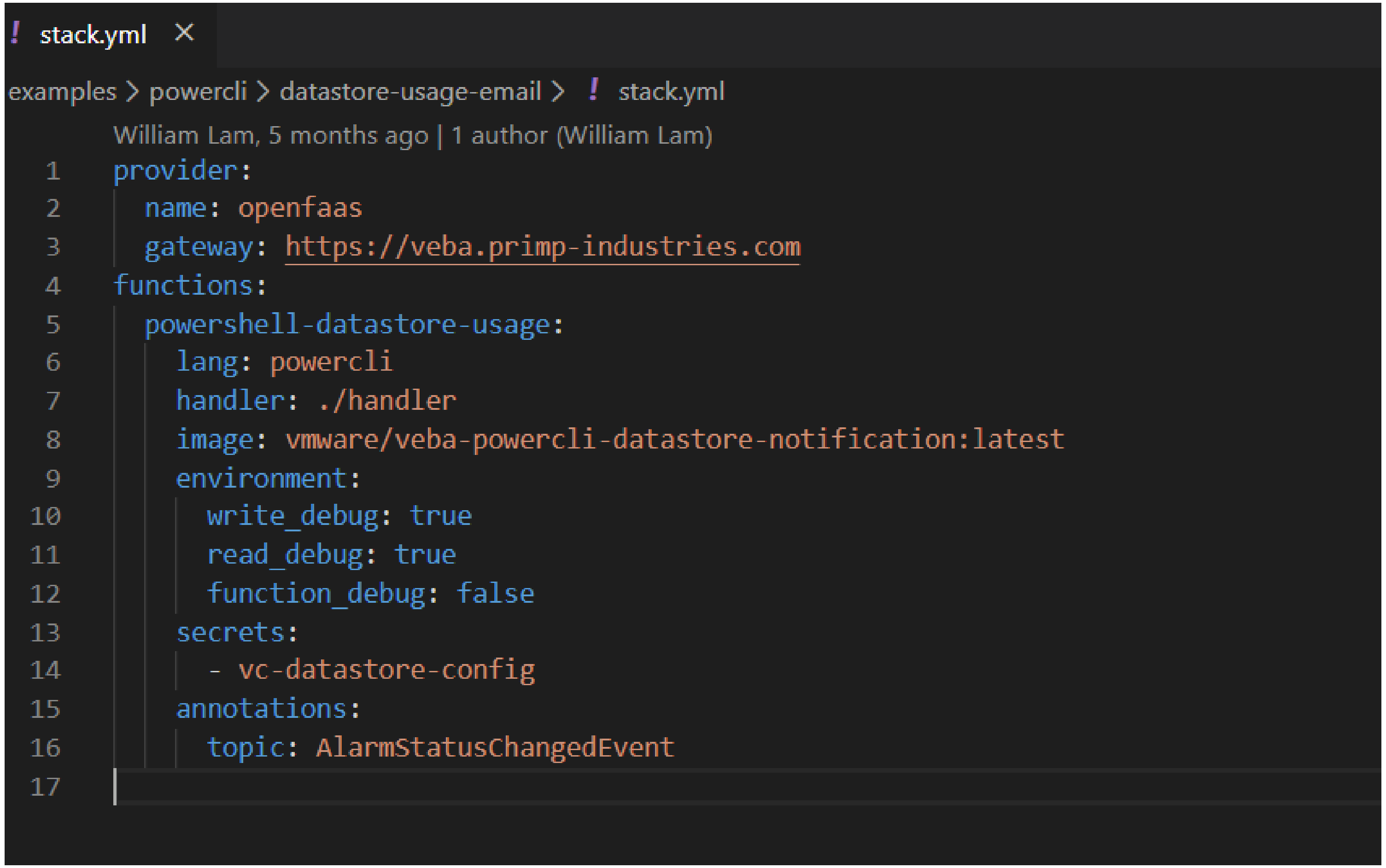
Step 1 - Clone repo

```
git clone https://github.com/vmware-samples/vcenter-event-broker-appliance
cd vcenter-event-broker-appliance/examples/powercli/datastore-usage-email
git checkout master
```

Step 2 - Update `stack.yml` and `vc-datastore-config.json` with your environment information

Stack.yml

Oh, and you need Docker too

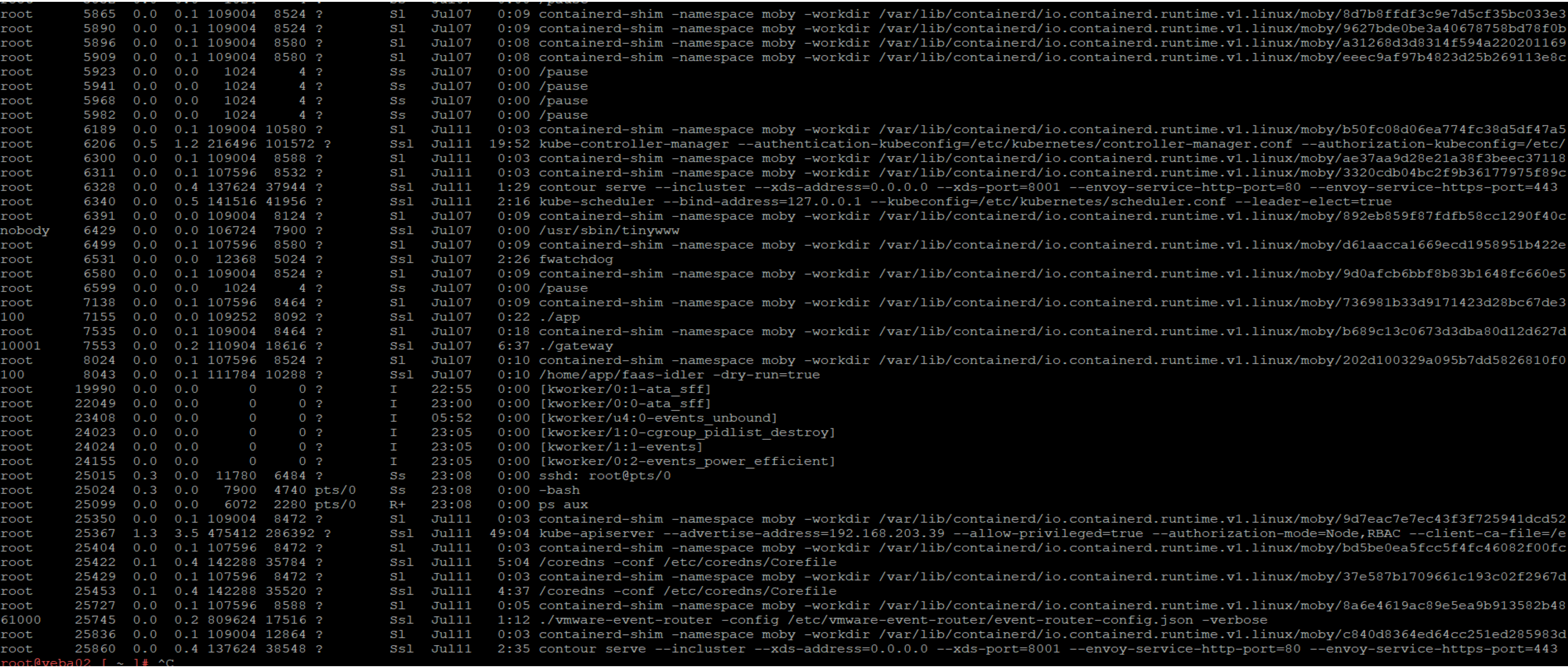


! stack.yml ×
examples > powercli > datastore-usage-email > ! stack.yml
William Lam, 5 months ago | 1 author (William Lam)

```yaml
provider:
  name: openfaas
  gateway: https://veba.primp-industries.com
functions:
  powershell-datastore-usage:
    lang: powercli
    handler: ./handler
    image: vmware/veba-powercli-datastore-notification:latest
    environment:
      write_debug: true
      read_debug: true
      function_debug: false
    secrets:
      - vc-datastore-config
    annotations:
      topic: AlarmStatusChangedEvent

```

Appliance Processes



```
root      5865  0.0  0.1 109004  8524 ?        Sl   Jul07   0:09 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/8d7b8ffdf3c9e7d5cf35bc033e3
root      5890  0.0  0.1 109004  8524 ?        Sl   Jul07   0:09 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/9627bde0be3a40678758bd78f0b
root      5896  0.0  0.1 109004  8580 ?        Sl   Jul07   0:08 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/a31268d3d8314f594a220201169
root      5909  0.0  0.1 109004  8580 ?        Sl   Jul07   0:08 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/eeec9af97b4823d25b269113e8c
root      5923  0.0  0.0   1024     4 ?        Ss   Jul07   0:00 /pause
root      5941  0.0  0.0   1024     4 ?        Ss   Jul07   0:00 /pause
root      5968  0.0  0.0   1024     4 ?        Ss   Jul07   0:00 /pause
root      5982  0.0  0.0   1024     4 ?        Ss   Jul07   0:00 /pause
root      6189  0.0  0.1 109004 10580 ?        Sl   Jul11   0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b50fc08d06ea774fc38d5df47a5
root      6206  0.5  1.2 216496 101572 ?       Ssl  Jul11  19:52 kube-controller-manager --authentication-kubeconfig=/etc/kubernetes/controller-manager.conf --authorization-kubeconfig=/etc/
root      6300  0.0  0.1 109004  8588 ?        Sl   Jul11   0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/ae37aa9d28e21a38f3beec37118
root      6311  0.0  0.1 107596  8532 ?        Sl   Jul11   0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/3320cdb04bc2f9b36177975f89c
root      6328  0.0  0.4 137624 37944 ?        Ssl  Jul11   1:29 contour serve --incluster --xds-address=0.0.0.0 --xds-port=8001 --envoy-service-http-port=80 --envoy-service-https-port=443
root      6340  0.0  0.5 141516 41956 ?        Ssl  Jul11   2:16 kube-scheduler --bind-address=127.0.0.1 --kubeconfig=/etc/kubernetes/scheduler.conf --leader-elect=true
root      6391  0.0  0.0 109004  8124 ?        Sl   Jul07   0:09 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/892eb859f87fdfb58cc1290f40c
nobody    6429  0.0  0.0 106724  7900 ?        Ssl  Jul07   0:00 /usr/sbin/tinywww
root      6499  0.0  0.1 107596  8580 ?        Sl   Jul07   0:09 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/d61aacca1669ecd1958951b422e
root      6531  0.0  0.0  12368  5024 ?        Ssl  Jul07   2:26 fwatchdog
root      6580  0.0  0.1 109004  8524 ?        Sl   Jul07   0:09 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/9d0afcb6bbf8b83b1648fc660e5
root      6599  0.0  0.0   1024     4 ?        Ss   Jul07   0:00 /pause
root      7138  0.0  0.1 107596  8464 ?        Sl   Jul07   0:09 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/736981b33d9171423d28bc67de3
100       7155  0.0  0.0 109252  8092 ?        Ssl  Jul07   0:22 ./app
root      7535  0.0  0.1 109004  8464 ?        Sl   Jul07   0:18 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/b689c13c0673d3dba80d12d627d
10001     7553  0.0  0.2 110904 18616 ?        Ssl  Jul07   6:37 ./gateway
root      8024  0.0  0.1 107596  8524 ?        Sl   Jul07   0:10 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/202d100329a095b7dd5826810f0
100       8043  0.0  0.1 111784 10288 ?        Ssl  Jul07   0:10 /home/app/faas-idler -dry-run=true
root     19990  0.0  0.0      0     0 ?        I    22:55   0:00 [kworker/0:1-ata_sff]
root     22049  0.0  0.0      0     0 ?        I    23:00   0:00 [kworker/0:0-ata_sff]
root     23408  0.0  0.0      0     0 ?        I    05:52   0:00 [kworker/u4:0-events_unbound]
root     24023  0.0  0.0      0     0 ?        I    23:05   0:00 [kworker/1:0-cgroup_pidlist_destroy]
root     24024  0.0  0.0      0     0 ?        I    23:05   0:00 [kworker/1:1-events]
root     24155  0.0  0.0      0     0 ?        I    23:05   0:00 [kworker/0:2-events_power_efficient]
root     25015  0.3  0.0  11780  6484 ?        Ss   23:08   0:00 sshd: root@pts/0
root     25024  0.3  0.0   7900  4740 pts/0    Ss   23:08   0:00 -bash
root     25099  0.0  0.0   6072  2280 pts/0    R+   23:08   0:00 ps aux
root     25350  0.0  0.1 109004  8472 ?        Sl   Jul11   0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/9d7eac7e7ec43f3f725941dcd52
root     25367  1.3  3.5 475412 286392 ?       Ssl  Jul11  49:04 kube-apiserver --advertise-address=192.168.203.39 --allow-privileged=true --authorization-mode=Node,RBAC --client-ca-file=/e
root     25404  0.0  0.1 107596  8472 ?        Sl   Jul11   0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/bd5be0ea5fcc5f4fc46082f00fc
root     25422  0.1  0.4 142288 35784 ?        Ssl  Jul11   5:04 /coredns -conf /etc/coredns/Corefile
root     25429  0.0  0.1 107596  8472 ?        Sl   Jul11   0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/37e587b1709661c193c02f2967d
root     25453  0.1  0.4 142288 35520 ?        Ssl  Jul11   4:37 /coredns -conf /etc/coredns/Corefile
root     25727  0.0  0.1 107596  8588 ?        Sl   Jul11   0:05 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/8a6e4619ac89e5ea9b913582b48
61000    25745  0.0  0.2 809624 17516 ?        Ssl  Jul11   1:12 ./vmware-event-router -config /etc/vmware-event-router/event-router-config.json -verbose
root     25836  0.0  0.1 109004 12864 ?        Sl   Jul11   0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/c840d8364ed64cc251ed285983d
root     25860  0.0  0.4 137624 38548 ?        Ssl  Jul11   2:35 contour serve --incluster --xds-address=0.0.0.0 --xds-port=8001 --envoy-service-http-port=80 --envoy-service-https-port=443
root@veba02 [ ~ ]# ^C
```

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VEBA is currently a developer’s tool.

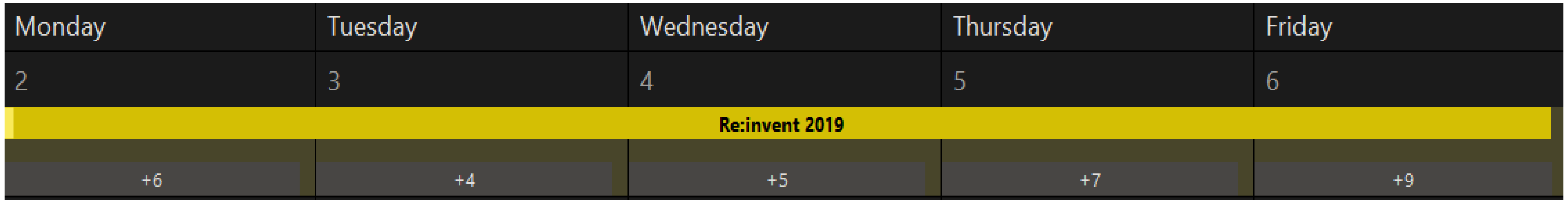
Me, November 26, 2019

VEBA is actually targeted at VI Admins

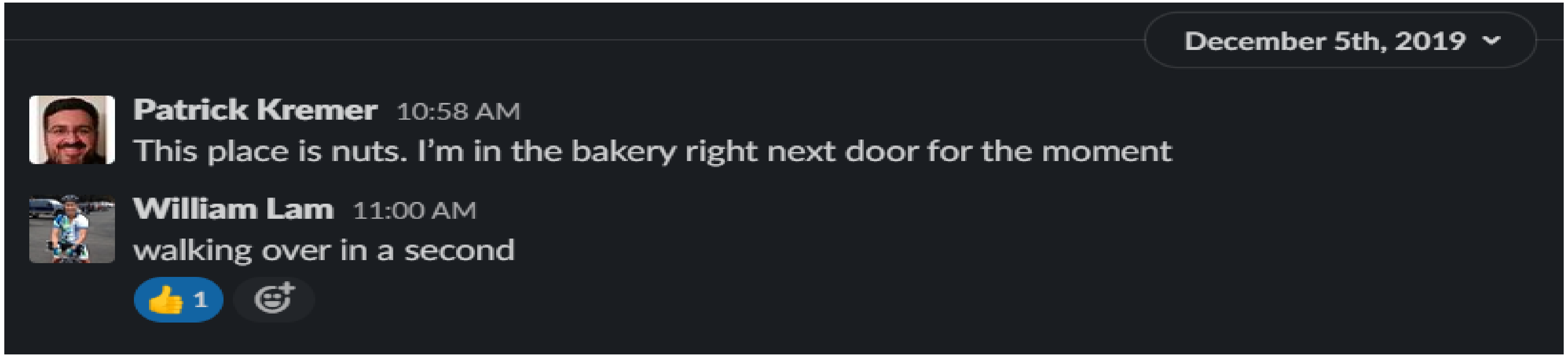
William Lam, November 27, 2019

William Lam is a Senior Staff Solution Architect working in the VMware Cloud team within the Cloud Services Business Unit (CSBU) at VMware. He focuses on Automation, Integration and Operation of the VMware Software Defined Datacenter (SDDC).

Timelines



Monday	Tuesday	Wednesday	Thursday	Friday
2	3	4	5	6
Re:invent 2019				
+6	+4	+5	+7	+9



December 5th, 2019

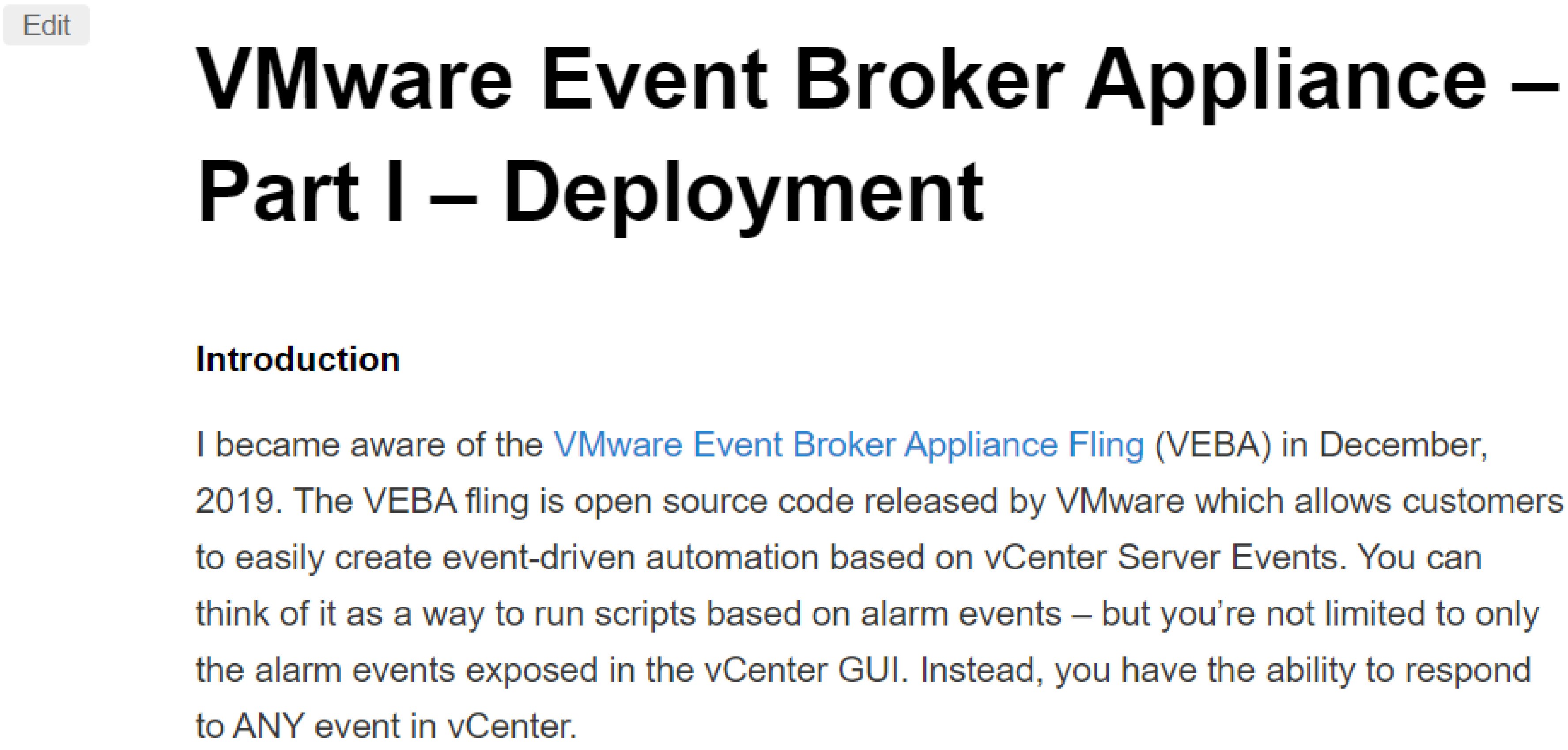
Patrick Kremer 10:58 AM
This place is nuts. I'm in the bakery right next door for the moment

William Lam 11:00 AM
walking over in a second

December 2019

Deploying VEBA

http://www.patrickkremer.com/veba

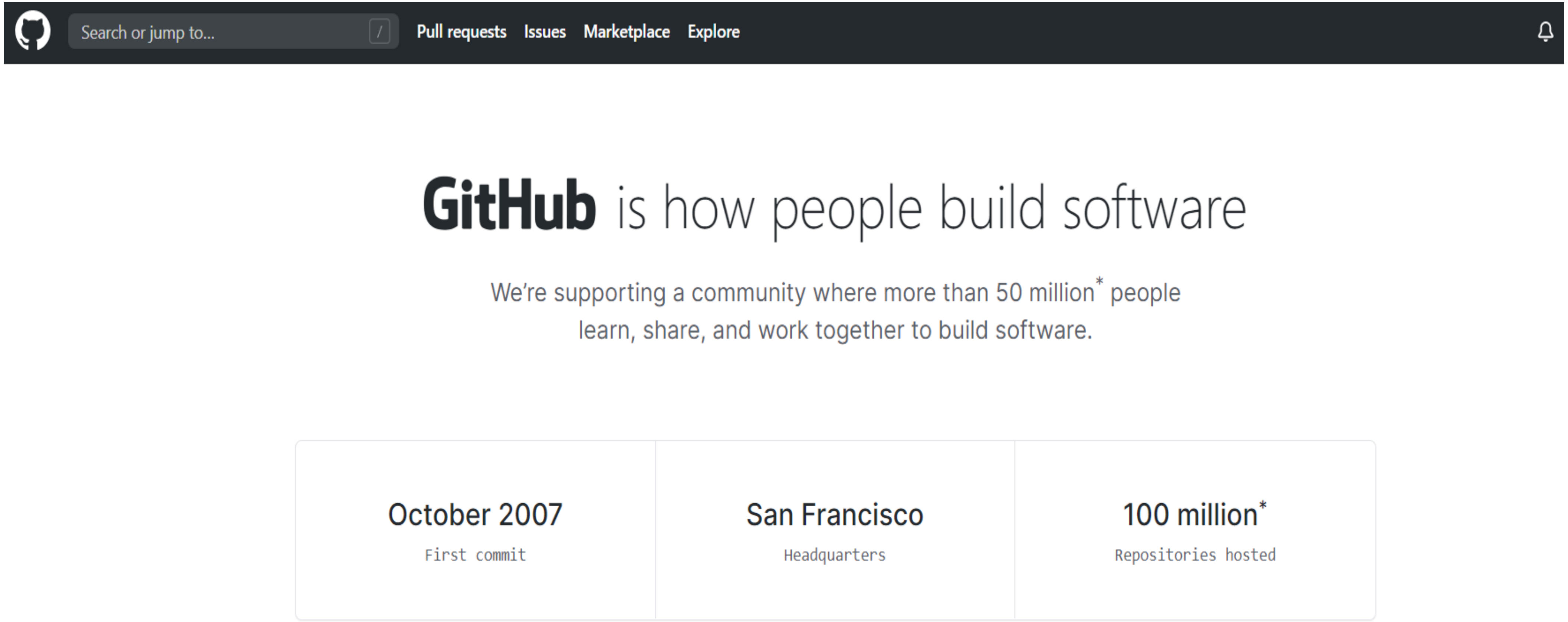


VMware Event Broker Appliance – Part I – Deployment

Introduction

I became aware of the VMware Event Broker Appliance Fling (VEBA) in December, 2019. The VEBA fling is open source code released by VMware which allows customers to easily create event-driven automation based on vCenter Server Events. You can think of it as a way to run scripts based on alarm events – but you're not limited to only the alarm events exposed in the vCenter GUI. Instead, you have the ability to respond to ANY event in vCenter.

What is Github?



GitHub is how people build software

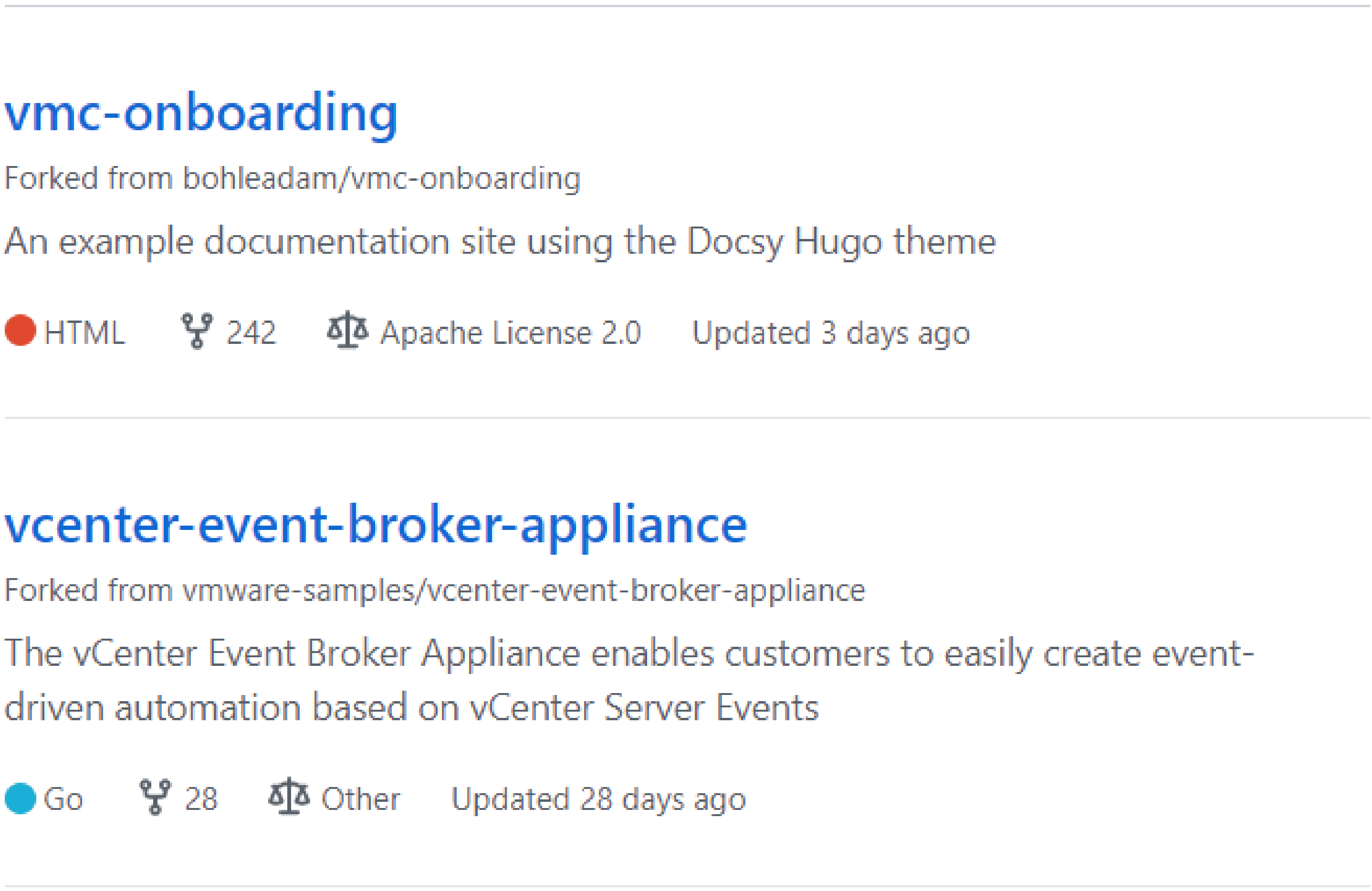
We're supporting a community where more than 50 million* people learn, share, and work together to build software.

October 2007
First commit

San Francisco
Headquarters

100 million*
Repositories hosted

What is a repository (repo)



vmc-onboarding

Forked from bohleadam/vmc-onboarding

An example documentation site using the Docsy Hugo theme

● HTML ⑂ 242 ⚖ Apache License 2.0 Updated 3 days ago

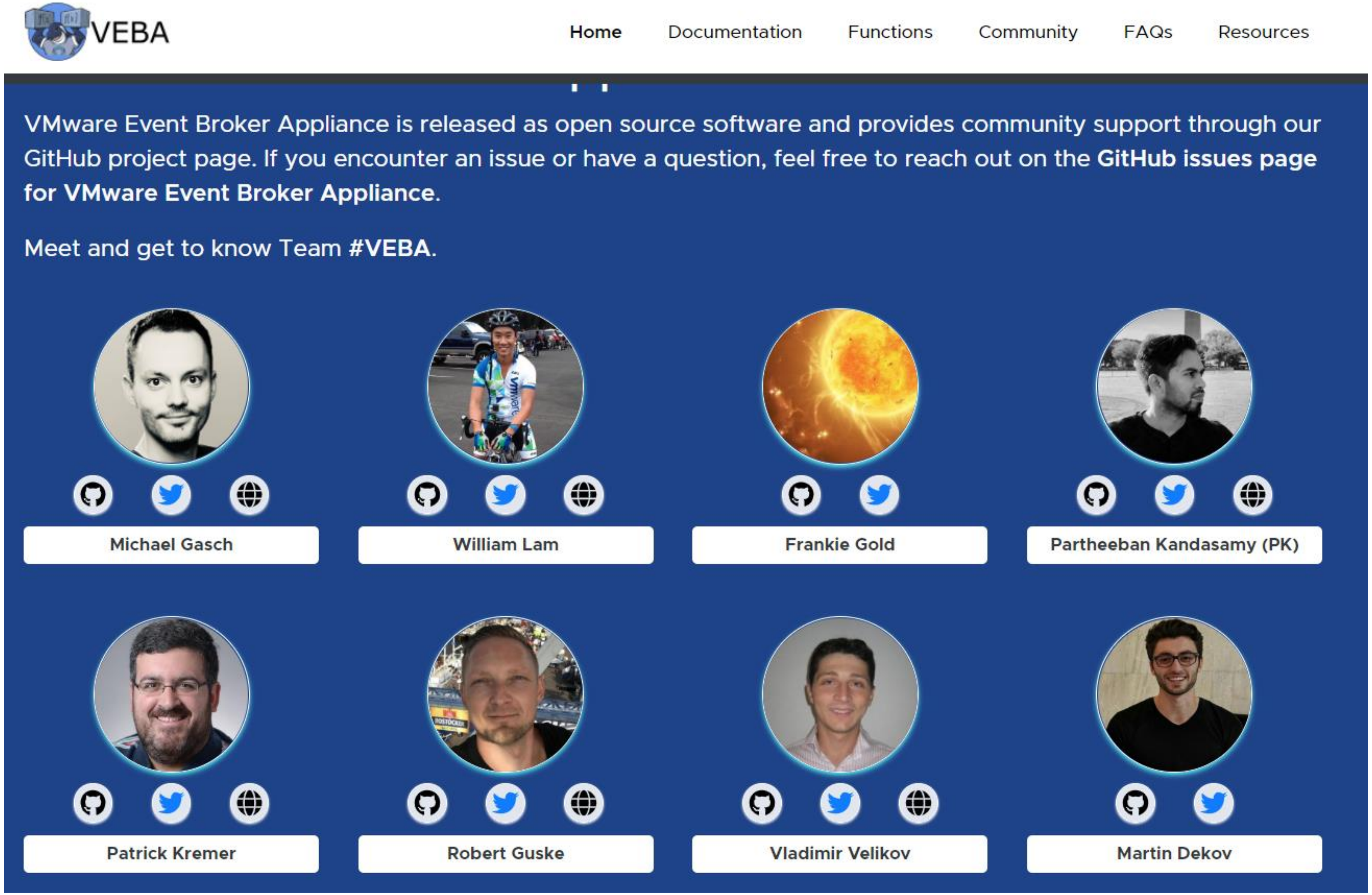
vcenter-event-broker-appliance

Forked from vmware-samples/vcenter-event-broker-appliance

The vCenter Event Broker Appliance enables customers to easily create event-driven automation based on vCenter Server Events

● Go ⑂ 28 ⚖ Other Updated 28 days ago

Impostor syndrome

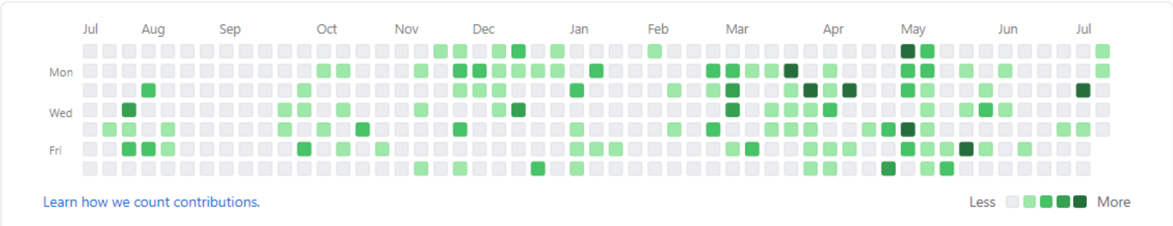


VMware Event Broker Appliance is released as open source software and provides community support through our GitHub project page. If you encounter an issue or have a question, feel free to reach out on the **GitHub issues page for VMware Event Broker Appliance**.

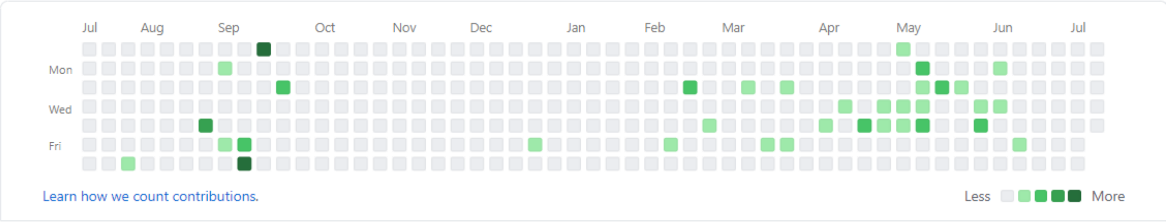
Meet and get to know Team **#VEBA**.

Here’s them

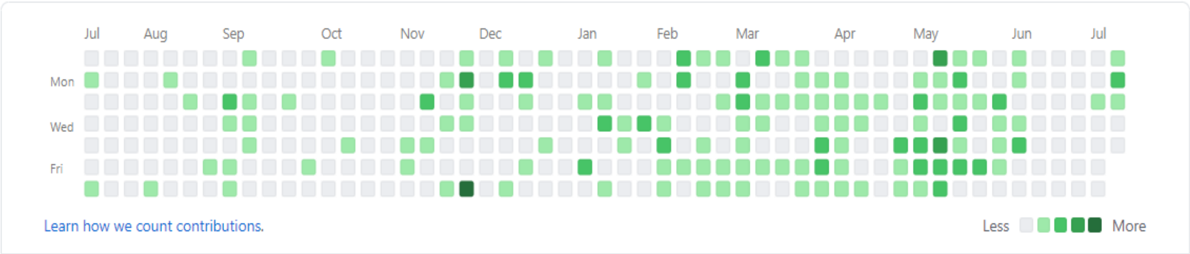
374 contributions in the last year



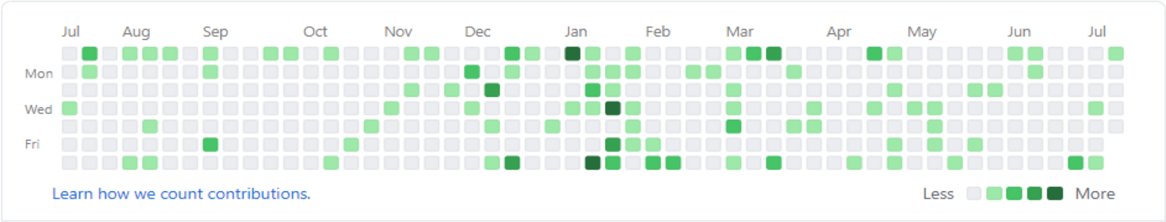
88 contributions in the last year



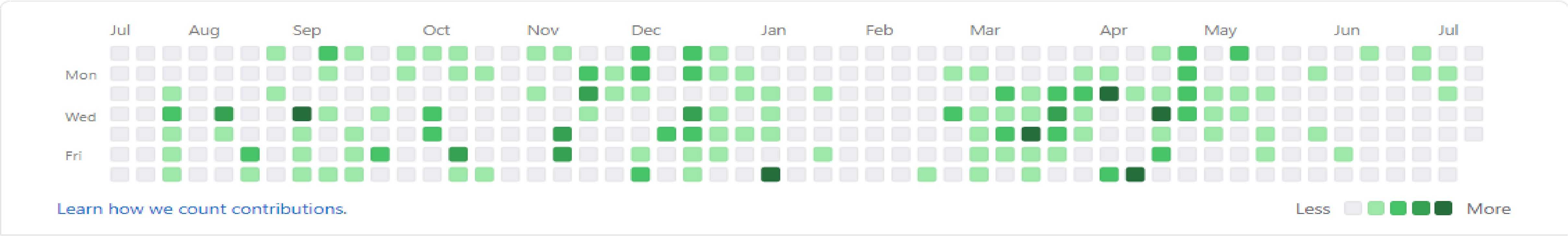
258 contributions in the last year



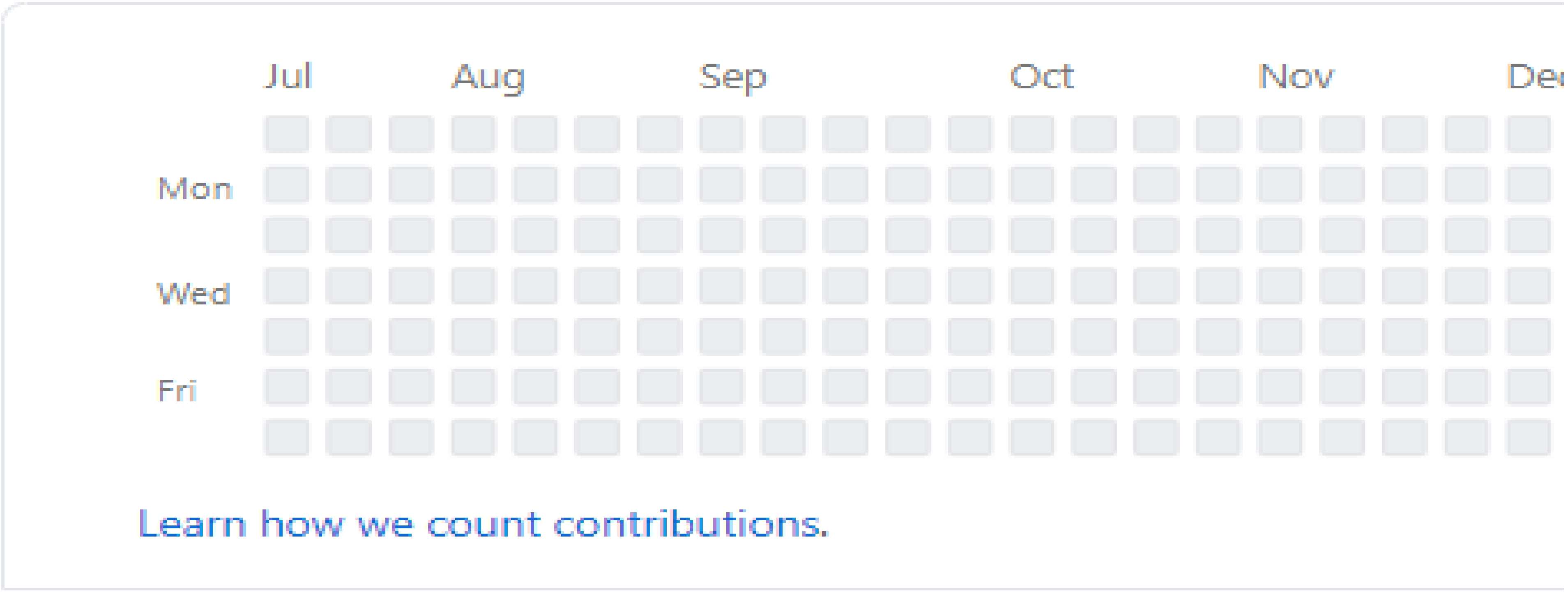
242 contributions in the last year



413 contributions in the last year

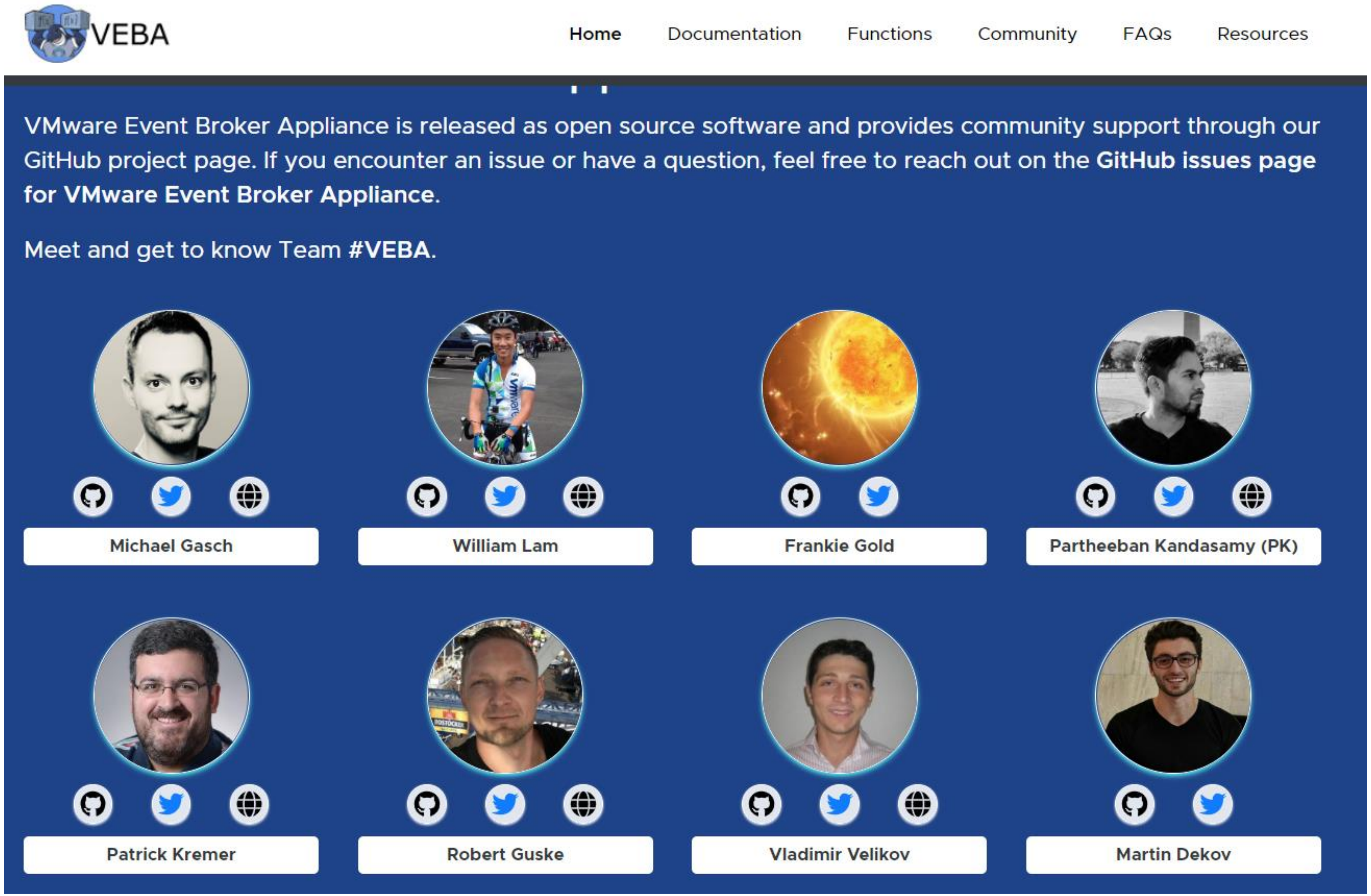


Here’s me



Learn how we count contributions.

Help from the community



VMware Event Broker Appliance is released as open source software and provides community support through our GitHub project page. If you encounter an issue or have a question, feel free to reach out on the **GitHub issues page for VMware Event Broker Appliance**.

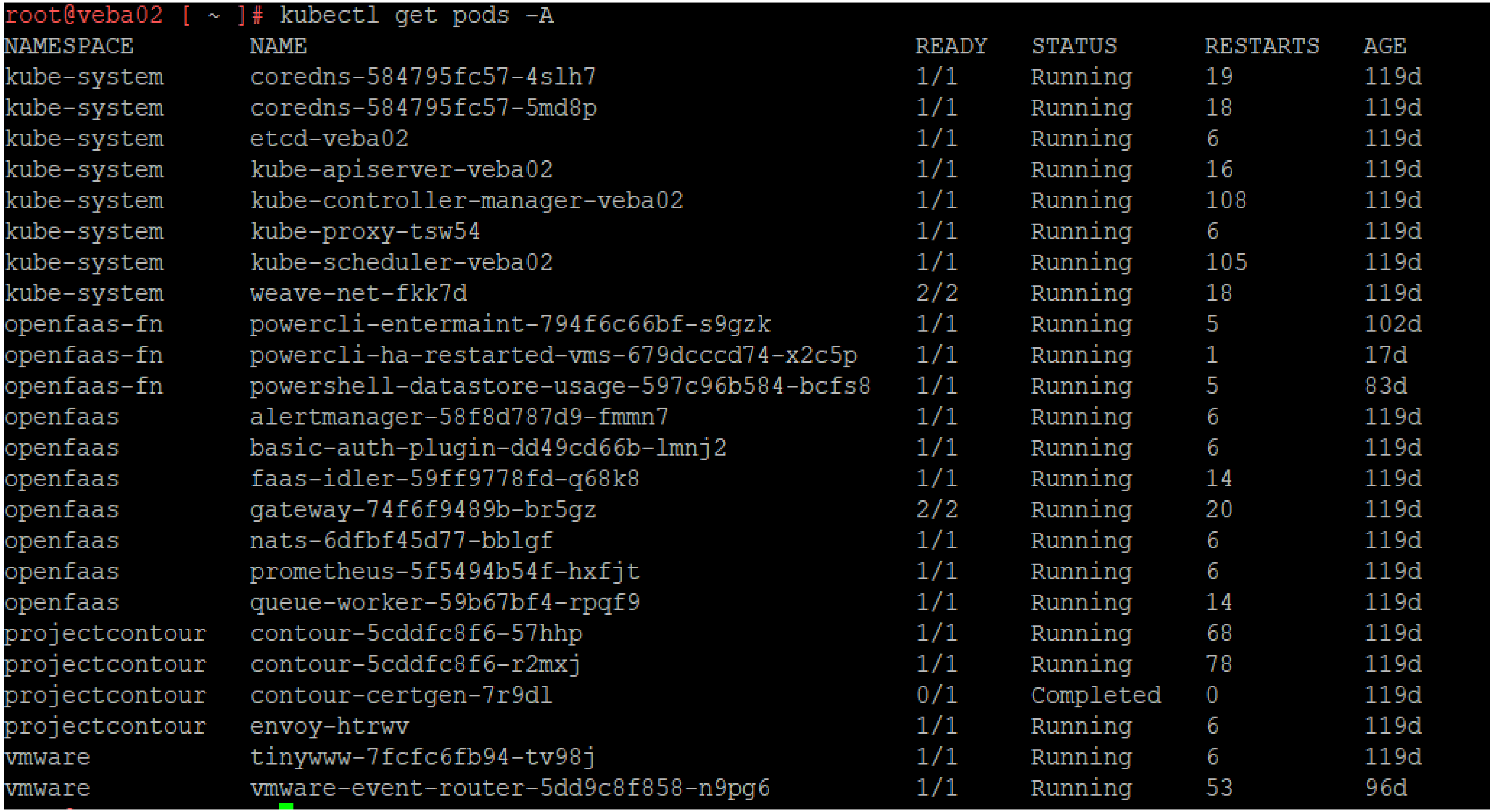
Meet and get to know Team **#VEBA**.

Using the right tools

Containers run code

Pods are a group of containers

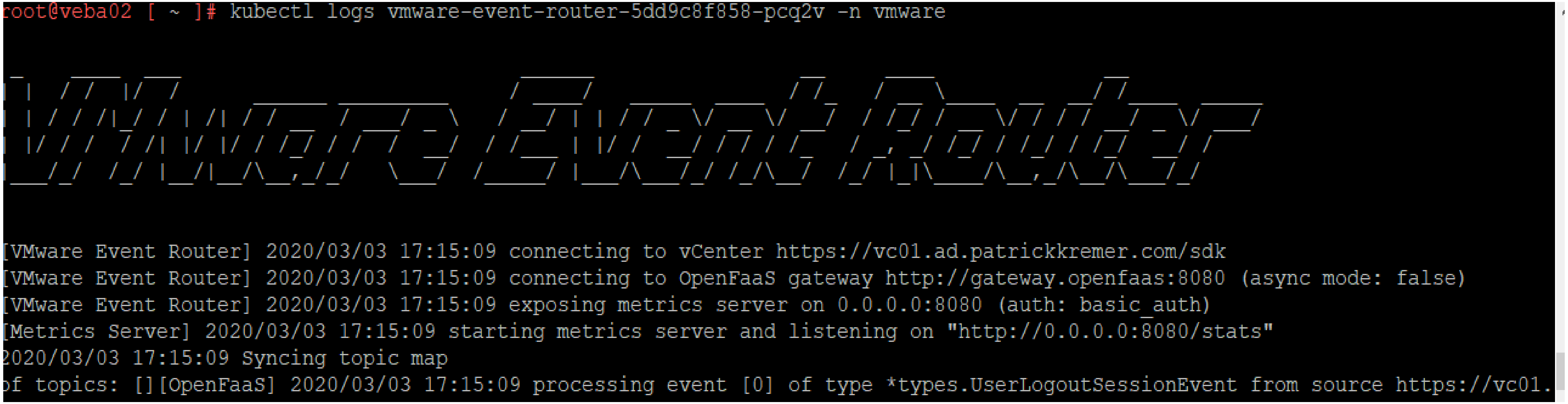
Pods are organized into namespaces



```
root@veba02 [ ~ ]# kubectl get pods -A
NAMESPACE        NAME                                          READY   STATUS      RESTARTS   AGE
kube-system      coredns-584795fc57-4slh7                      1/1     Running     19         119d
kube-system      coredns-584795fc57-5md8p                      1/1     Running     18         119d
kube-system      etcd-veba02                                   1/1     Running     6          119d
kube-system      kube-apiserver-veba02                         1/1     Running     16         119d
kube-system      kube-controller-manager-veba02                1/1     Running     108        119d
kube-system      kube-proxy-tsw54                              1/1     Running     6          119d
kube-system      kube-scheduler-veba02                         1/1     Running     105        119d
kube-system      weave-net-fkk7d                               2/2     Running     18         119d
openfaas-fn      powercli-entermaint-794f6c66bf-s9gzk          1/1     Running     5          102d
openfaas-fn      powercli-ha-restarted-vms-679dcccd74-x2c5p    1/1     Running     1          17d
openfaas-fn      powershell-datastore-usage-597c96b584-bcfs8   1/1     Running     5          83d
openfaas         alertmanager-58f8d787d9-fmmn7                 1/1     Running     6          119d
openfaas         basic-auth-plugin-dd49cd66b-lmnj2             1/1     Running     6          119d
openfaas         faas-idler-59ff9778fd-q68k8                   1/1     Running     14         119d
openfaas         gateway-74f6f9489b-br5gz                      2/2     Running     20         119d
openfaas         nats-6dfbf45d77-bblgf                         1/1     Running     6          119d
openfaas         prometheus-5f5494b54f-hxfjt                   1/1     Running     6          119d
openfaas         queue-worker-59b67bf4-rpqf9                   1/1     Running     14         119d
projectcontour   contour-5cddfc8f6-57hhp                       1/1     Running     68         119d
projectcontour   contour-5cddfc8f6-r2mxj                       1/1     Running     78         119d
projectcontour   contour-certgen-7r9dl                         0/1     Completed   0          119d
projectcontour   envoy-htrwv                                   1/1     Running     6          119d
vmware           tinywww-7fcfc6fb94-tv98j                      1/1     Running     6          119d
vmware           vmware-event-router-5dd9c8f858-n9pg6          1/1     Running     53         96d
```

Using the right tools

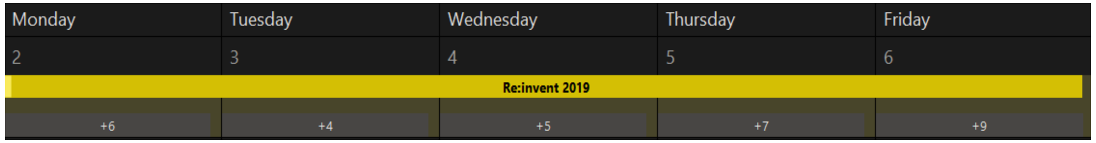
Pods have logs!



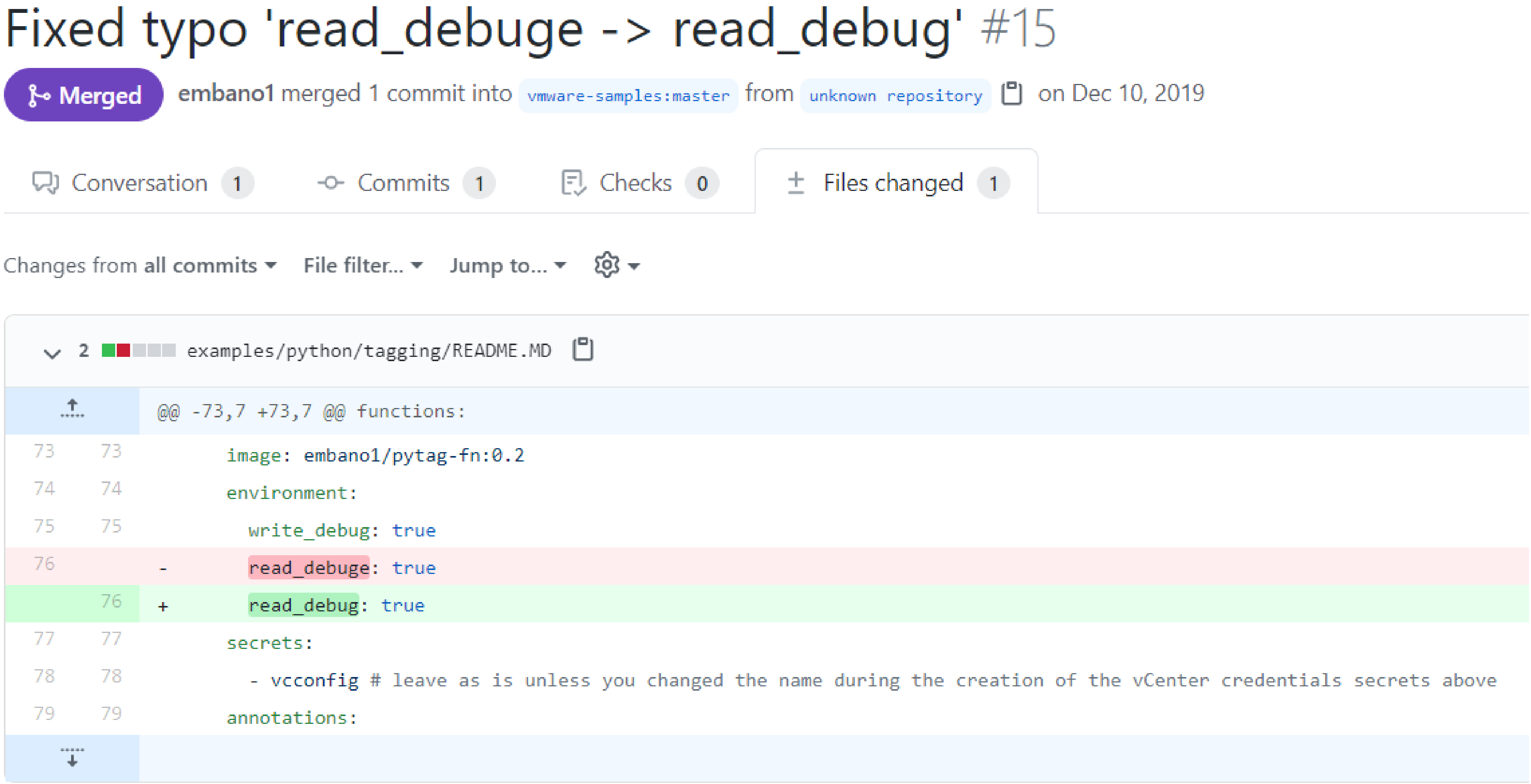
```
root@veba02 [ ~ ]# kubectl logs vmware-event-router-5dd9c8f858-pcq2v -n vmware

[VMware Event Router] 2020/03/03 17:15:09 connecting to vCenter https://vc01.ad.patrickkremer.com/sdk
[VMware Event Router] 2020/03/03 17:15:09 connecting to OpenFaaS gateway http://gateway.openfaas:8080 (async mode: false)
[VMware Event Router] 2020/03/03 17:15:09 exposing metrics server on 0.0.0.0:8080 (auth: basic_auth)
[Metrics Server] 2020/03/03 17:15:09 starting metrics server and listening on "http://0.0.0.0:8080/stats"
2020/03/03 17:15:09 Syncing topic map
of topics: [][OpenFaaS] 2020/03/03 17:15:09 processing event [0] of type *types.UserLogoutSessionEvent from source https://vc01.
```

I fixed a typo in Github



Monday	Tuesday	Wednesday	Thursday	Friday
2	3	4	5	6
Re:invent 2019				
+6	+4	+5	+7	+9



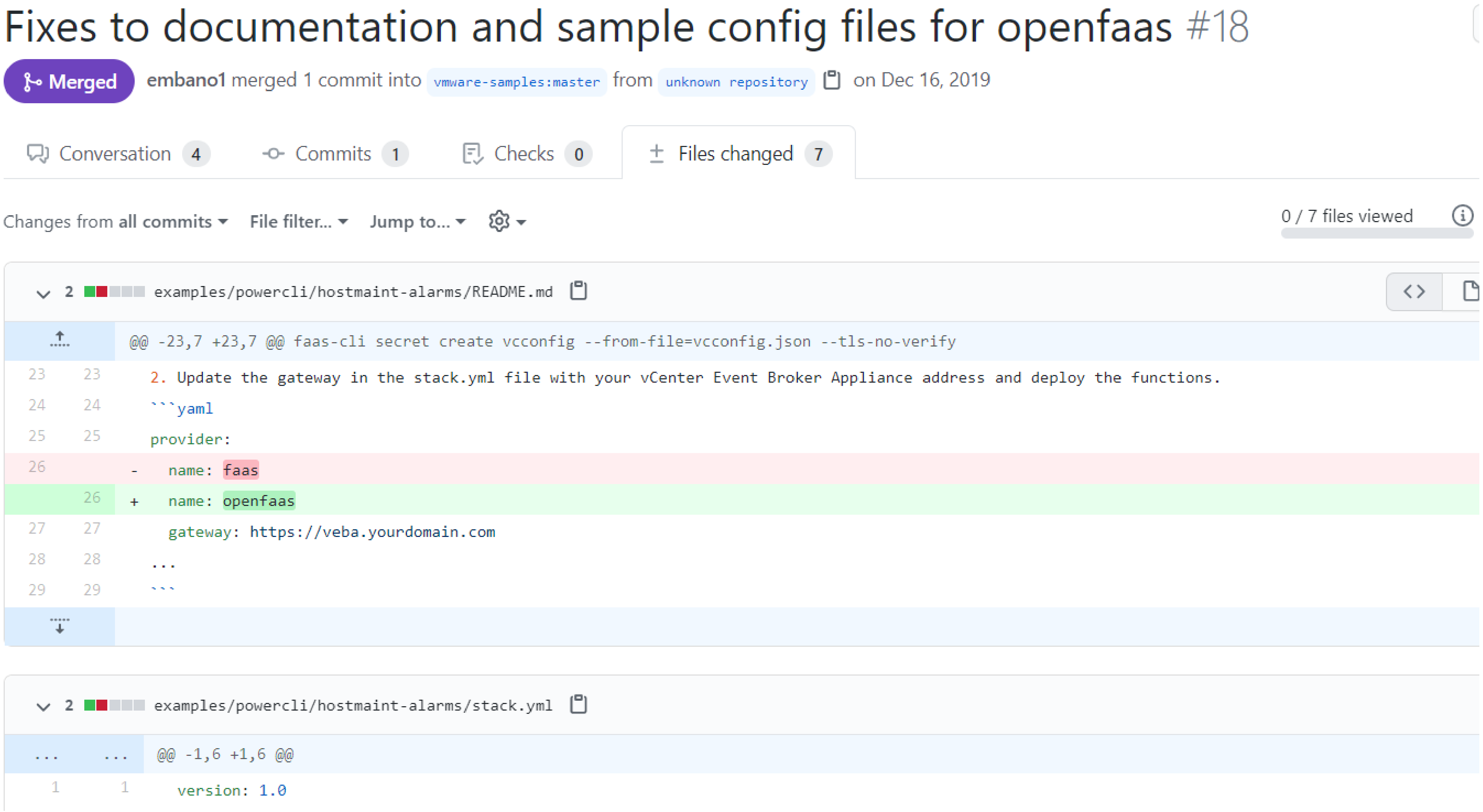
Fixed typo 'read_debuge -> read_debug' #15

Merged embano1 merged 1 commit into `vmware-samples:master` from `unknown repository` on Dec 10, 2019

2 🟩🟥 examples/python/tagging/README.MD

```
@@ -73,7 +73,7 @@ functions:
      image: embano1/pytag-fn:0.2
      environment:
        write_debug: true
-       read_debuge: true
+       read_debug: true
      secrets:
        - vcconfig # leave as is unless you changed the name during the creation of the vCenter credentials secrets above
      annotations:
```

I fixed documentation



Fixes to documentation and sample config files for openfaas #18

embano1 merged 1 commit into `vmware-samples:master` from `unknown repository` on Dec 16, 2019

2 🟩🟥⬜⬜⬜ examples/powercli/hostmaint-alarms/README.md

~~~diff
@@ -23,7 +23,7 @@ faas-cli secret create vcconfig --from-file=vcconfig.json --tls-no-verify
 2. Update the gateway in the stack.yml file with your vCenter Event Broker Appliance address and deploy the functions.
 ```yaml
 provider:
-  name: faas
+  name: openfaas
   gateway: https://veba.yourdomain.com
 ...
 ~~~

2 🟩🟥⬜⬜⬜ examples/powercli/hostmaint-alarms/stack.yml

```diff
@@ -1,6 +1,6 @@
 version: 1.0
```

Expanding my knowledge over time

Part I – VMware Event Broker Appliance – Deployment

Part Ia – AWS EventBridge Deployment

Part II – VMware Event Broker Appliance – Sample Code Prereqs

Part III – VMware Event Broker Appliance – Tags and Clones

Part IV – VMware Event Broker Appliance – Deploying the First Sample Function

Part V – VMware Event Broker Appliance – Contributing to the VEBA Project

Part VI – VMware Event Broker Appliance – Syncing Your Fork

Part VII – VMware Event Broker Appliance – Deploy the Sample Host Maintenance Function

Part VIII – VMware Event Broker Appliance – Basic Troubleshooting Techniques

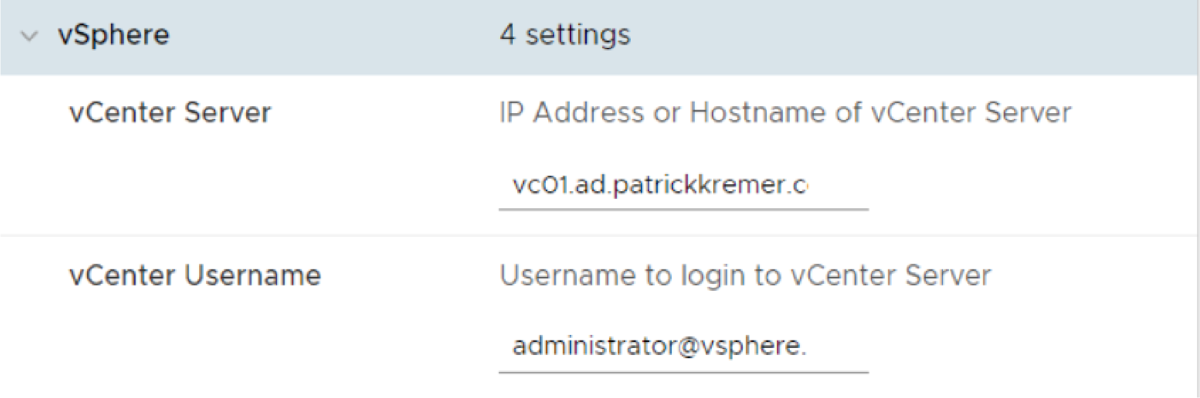
Part IX – Deploying the Datastore Sample Email Script in VMC

Part X – Building the Appliance OVA from source code

Part XI – Changing options in the OVA installer

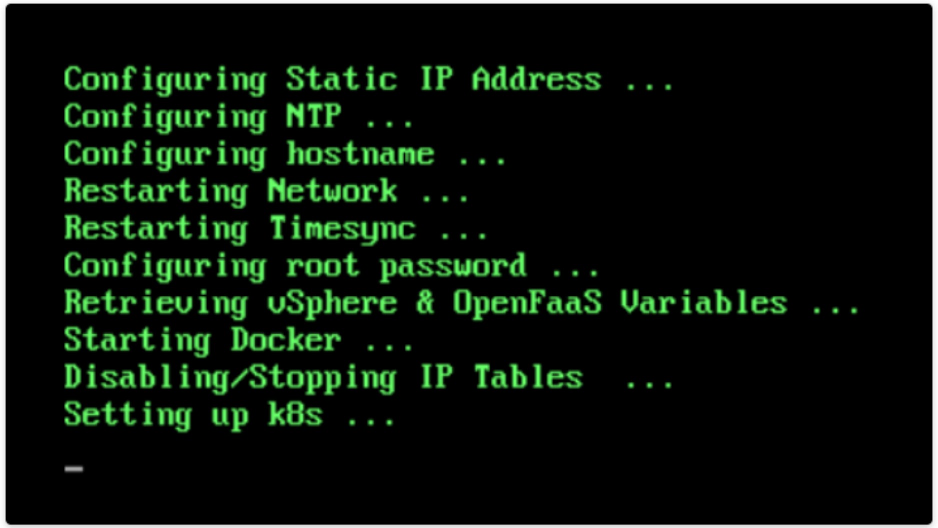
Part XII – Advanced Function Troubleshooting

Installation



vSphere	4 settings
vCenter Server	IP Address or Hostname of vCenter Server vc01.ad.patrickkremer.c
vCenter Username	Username to login to vCenter Server administrator@vsphere.

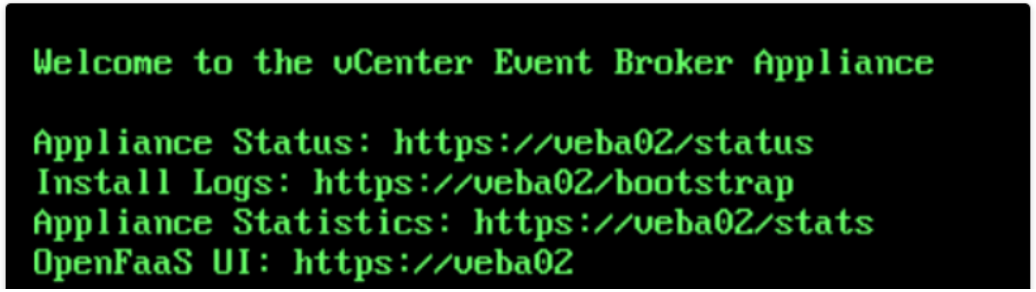
This is what the VEBA looks like during first boot



```
Configuring Static IP Address ...
Configuring NTP ...
Configuring hostname ...
Restarting Network ...
Restarting Timesync ...
Configuring root password ...
Retrieving vSphere & OpenFaaS Variables ...
Starting Docker ...
Disabling/Stopping IP Tables  ...
Setting up k8s ...

_
```

If you end up with this, [IP] in brackets instead of your hostname, something has failed. Did you use a subnet mask instead of CIDR? Did you put comma-separated DNS instead of space? Did you put in the incorrect gateway? If you enabled debugging at deploy time, you can look at /var/log/boostrap-debug.log for detailed debug logs to help you pinpoint the error. If not, see what you can find in /var/log/boostrap.log

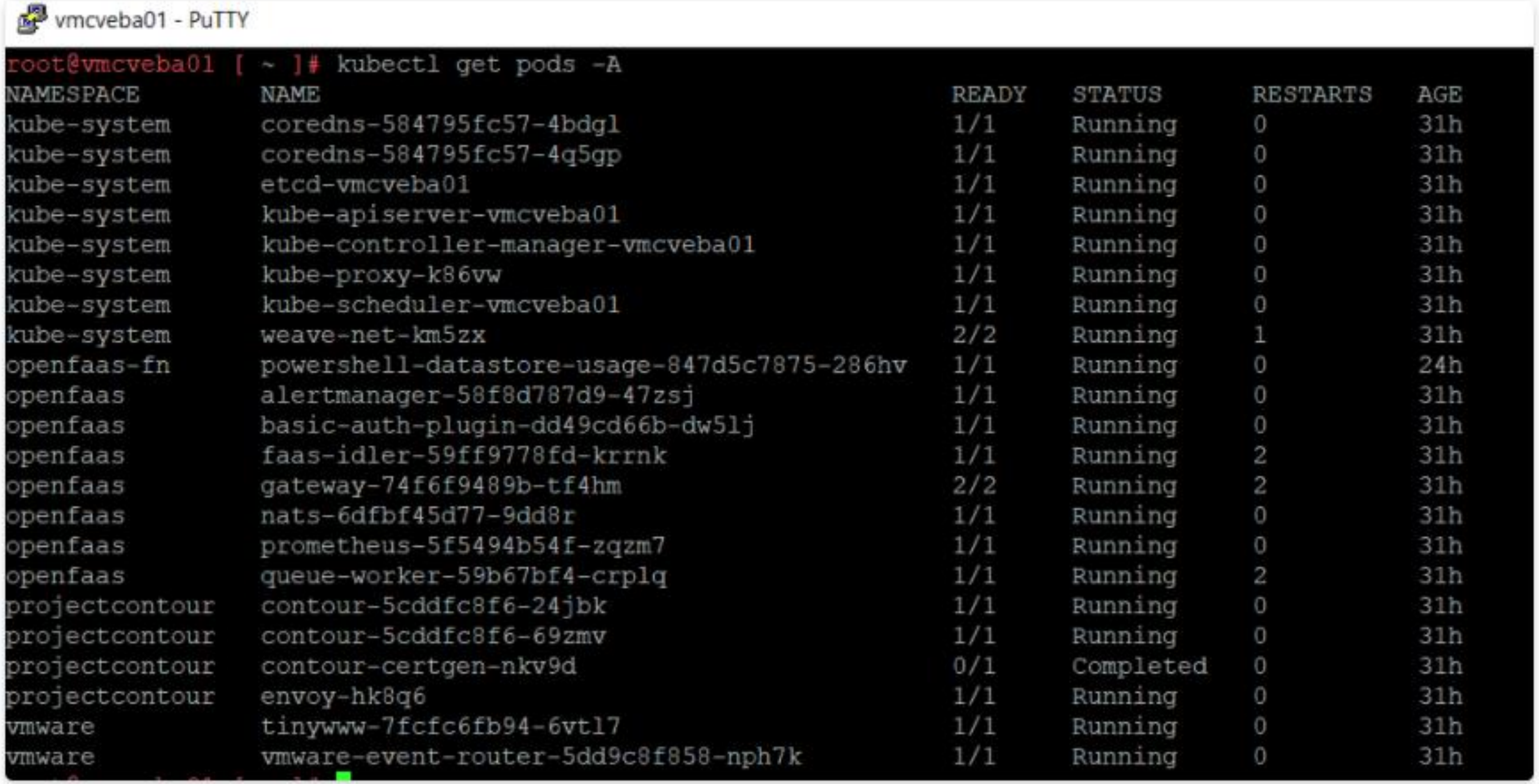


```
Welcome to the vCenter Event Broker Appliance

Appliance Status: https://veba02/status
Install Logs: https://veba02/bootstrap
Appliance Statistics: https://veba02/stats
OpenFaaS UI: https://veba02
```

Troubleshooting

PROTIP: *kubectl get pods -A* gives you all the pods and their associated namespaces in one command.

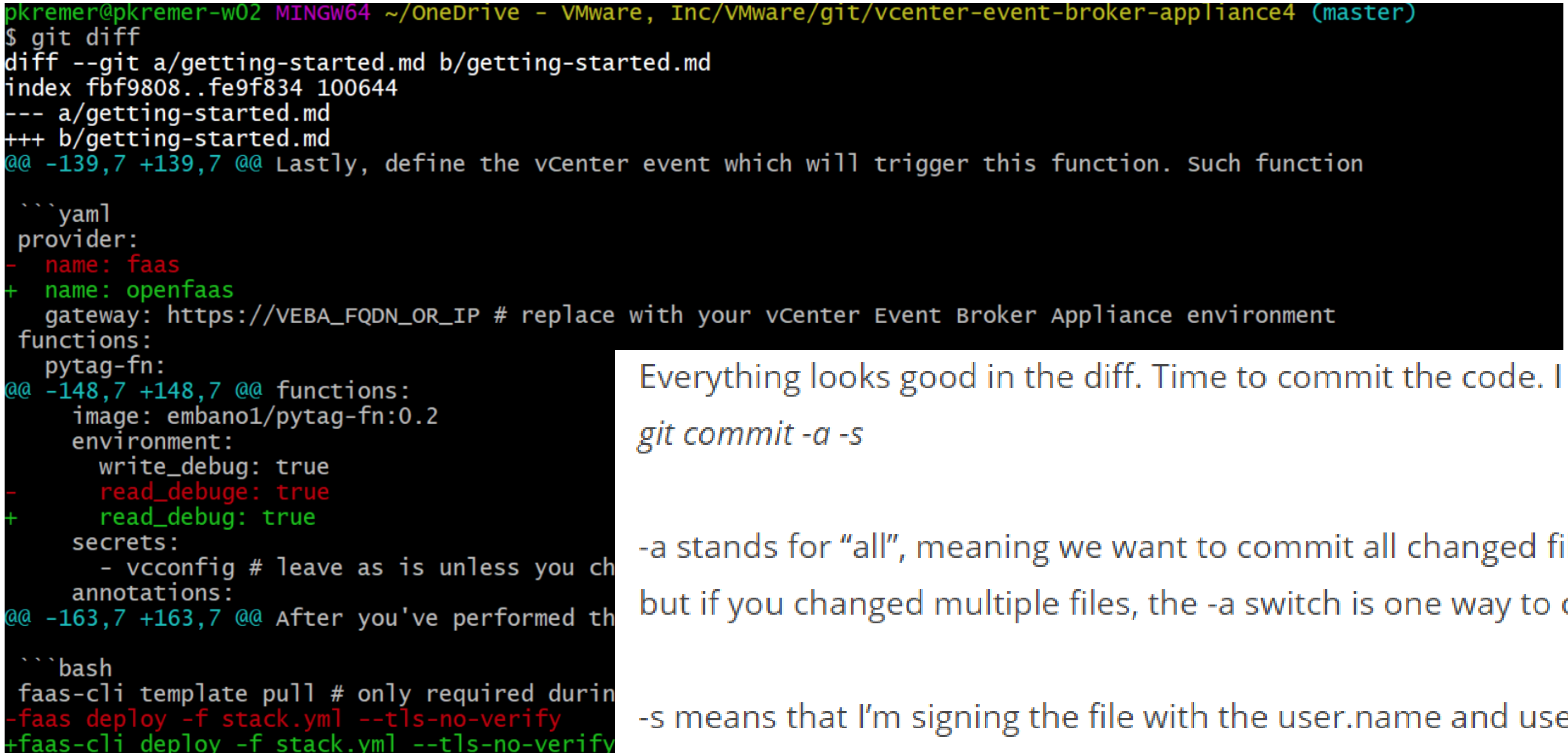


vmcveba01 - PuTTY

```
root@vmcveba01 [ ~ ]# kubectl get pods -A
NAMESPACE        NAME                                      READY   STATUS      RESTARTS   AGE
kube-system      coredns-584795fc57-4bdgl                  1/1     Running     0          31h
kube-system      coredns-584795fc57-4q5gp                  1/1     Running     0          31h
kube-system      etcd-vmcveba01                            1/1     Running     0          31h
kube-system      kube-apiserver-vmcveba01                  1/1     Running     0          31h
kube-system      kube-controller-manager-vmcveba01         1/1     Running     0          31h
kube-system      kube-proxy-k86vw                          1/1     Running     0          31h
kube-system      kube-scheduler-vmcveba01                  1/1     Running     0          31h
kube-system      weave-net-km5zx                           2/2     Running     1          31h
openfaas-fn      powershell-datastore-usage-847d5c7875-286hv   1/1     Running     0          24h
openfaas         alertmanager-58f8d787d9-47zsj             1/1     Running     0          31h
openfaas         basic-auth-plugin-dd49cd66b-dw5lj         1/1     Running     0          31h
openfaas         faas-idler-59ff9778fd-krrnk               1/1     Running     2          31h
openfaas         gateway-74f6f9489b-tf4hm                  2/2     Running     2          31h
openfaas         nats-6dfbf45d77-9dd8r                     1/1     Running     0          31h
openfaas         prometheus-5f5494b54f-zqzm7               1/1     Running     0          31h
openfaas         queue-worker-59b67bf4-crplq               1/1     Running     2          31h
projectcontour   contour-5cddfc8f6-24jbk                   1/1     Running     0          31h
projectcontour   contour-5cddfc8f6-69zmv                   1/1     Running     0          31h
projectcontour   contour-certgen-nkv9d                     0/1     Completed   0          31h
projectcontour   envoy-hk8q6                               1/1     Running     0          31h
vmware           tinywww-7fcfc6fb94-6vtl7                  1/1     Running     0          31h
vmware           vmware-event-router-5dd9c8f858-nph7k      1/1     Running     0          31h
```

©2020 VMware, Inc.

Git commands



~~~
pkremer@pkremer-w02 MINGW64 ~/OneDrive - VMware, Inc/VMware/git/vcenter-event-broker-appliance4 (master)
$ git diff
diff --git a/getting-started.md b/getting-started.md
index fbf9808..fe9f834 100644
--- a/getting-started.md
+++ b/getting-started.md
@@ -139,7 +139,7 @@ Lastly, define the vCenter event which will trigger this function. Such function

 ```yaml
 provider:
-  name: faas
+  name: openfaas
   gateway: https://VEBA_FQDN_OR_IP # replace with your vCenter Event Broker Appliance environment
 functions:
   pytag-fn:
@@ -148,7 +148,7 @@ functions:
     image: embano1/pytag-fn:0.2
     environment:
       write_debug: true
-      read_debuge: true
+      read_debug: true
     secrets:
       - vcconfig # leave as is unless you ch
     annotations:
@@ -163,7 +163,7 @@ After you've performed th

 ```bash
 faas-cli template pull # only required durin
-faas deploy -f stack.yml --tls-no-verify
+faas-cli deploy -f stack.yml --tls-no-verify
~~~

Everything looks good in the diff. Time to commit the code. I issue the command

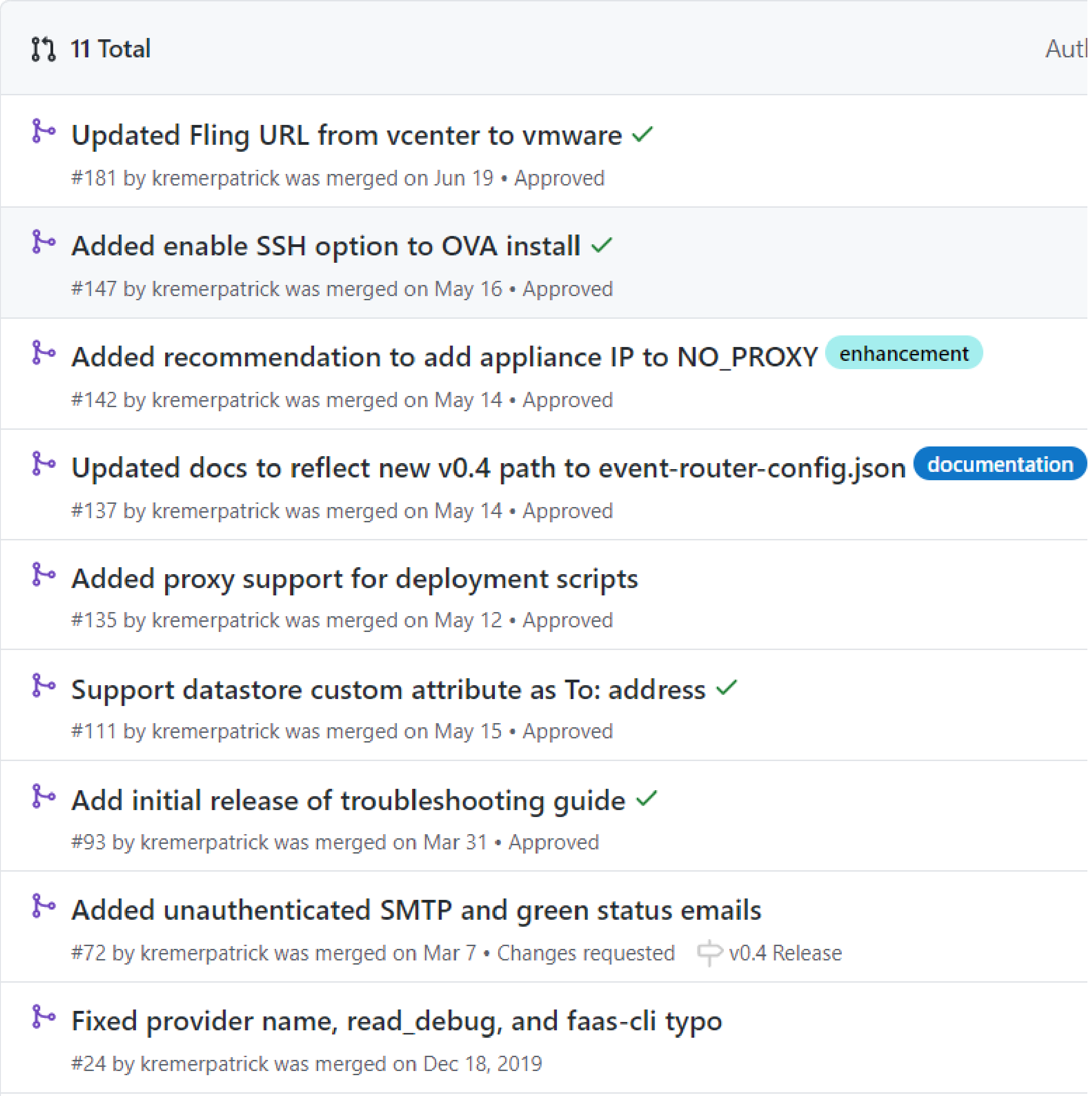
git commit -a -s

-a stands for “all”, meaning we want to commit all changed files. I only changed one in this case, but if you changed multiple files, the -a switch is one way to commit all of them.

-s means that I’m signing the file with the user.name and user.email variables that we populated above.

When I issue the command, git pops open my text editor of choice. I need to write a comment documenting my changes. I write it, save it, then close the text editor.

Documentation, code, and more



11 Total

Autl

Updated Fling URL from vcenter to vmware ✓

#181 by kremerpatrick was merged on Jun 19 • Approved

Added enable SSH option to OVA install ✓

#147 by kremerpatrick was merged on May 16 • Approved

Added recommendation to add appliance IP to NO_PROXY enhancement

#142 by kremerpatrick was merged on May 14 • Approved

Updated docs to reflect new v0.4 path to event-router-config.json documentation

#137 by kremerpatrick was merged on May 14 • Approved

Added proxy support for deployment scripts

#135 by kremerpatrick was merged on May 12 • Approved

Support datastore custom attribute as To: address ✓

#111 by kremerpatrick was merged on May 15 • Approved

Add initial release of troubleshooting guide ✓

#93 by kremerpatrick was merged on Mar 31 • Approved

Added unauthenticated SMTP and green status emails

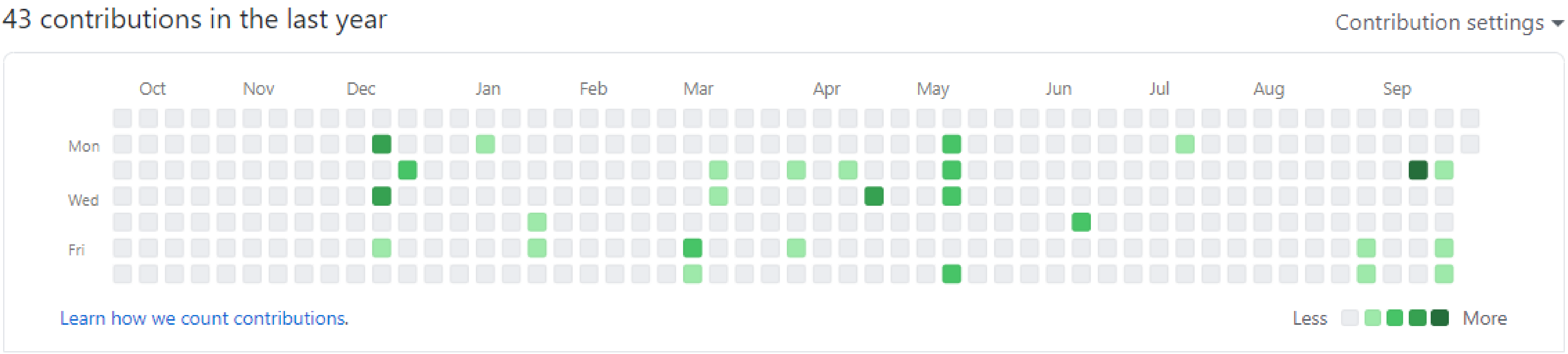
#72 by kremerpatrick was merged on Mar 7 • Changes requested v0.4 Release

Fixed provider name, read_debug, and faas-cli typo

#24 by kremerpatrick was merged on Dec 18, 2019

Contributing to open source

Github contributions



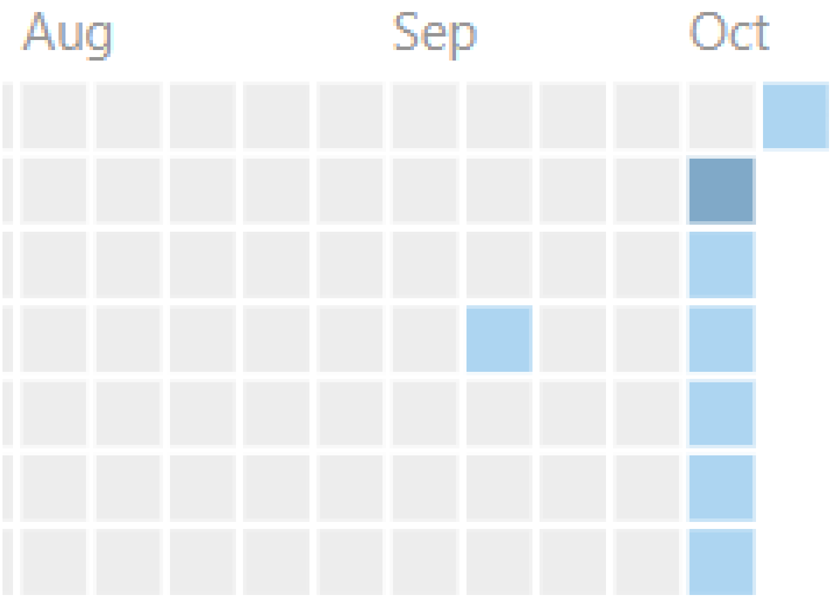
43 contributions in the last year

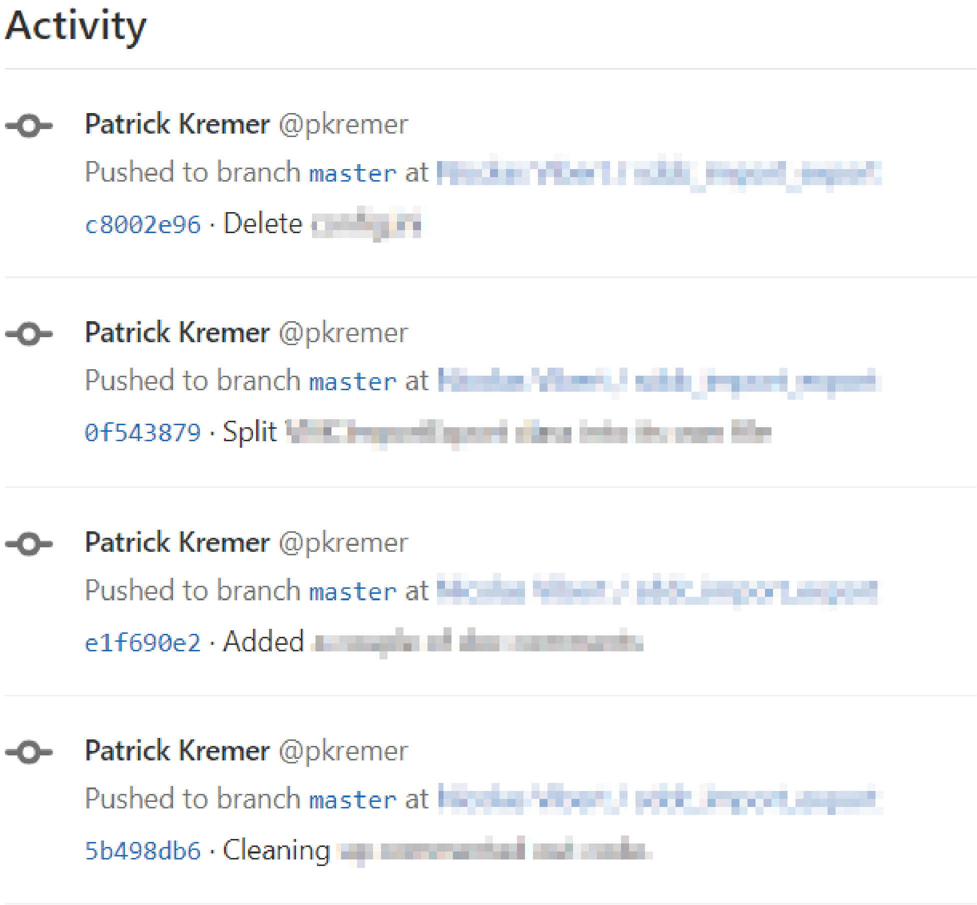
Contribution settings

Learn how we count contributions.

Contributing to internal projects

Expanded visibility and opportunity with VMware




Activity

Patrick Kremer @pkremer
Pushed to branch `master` at [redacted]
`c8002e96` · Delete [redacted]

Patrick Kremer @pkremer
Pushed to branch `master` at [redacted]
`0f543879` · Split [redacted]

Patrick Kremer @pkremer
Pushed to branch `master` at [redacted]
`e1f690e2` · Added [redacted]

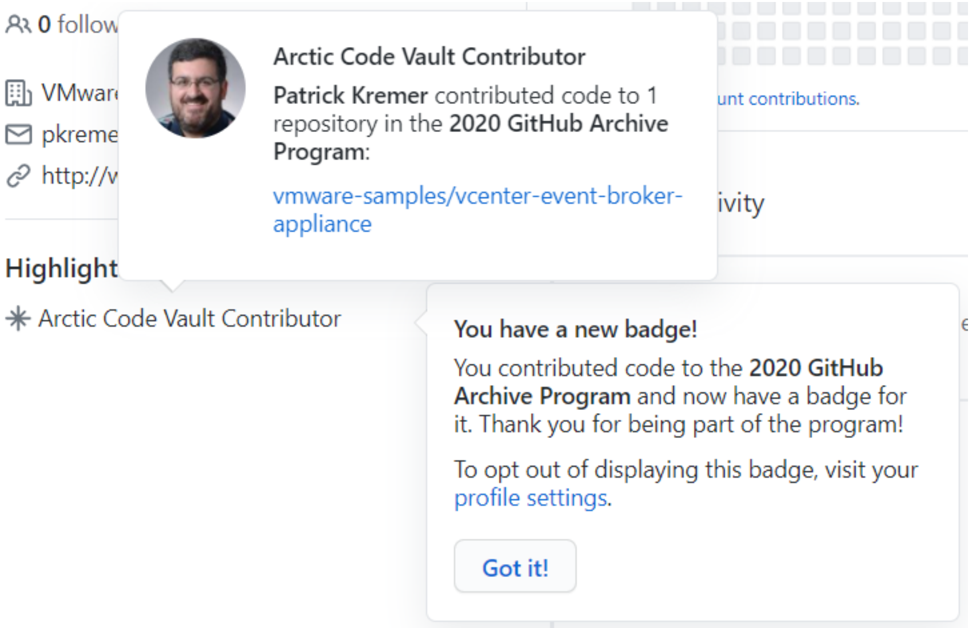
Patrick Kremer @pkremer
Pushed to branch `master` at [redacted]
`5b498db6` · Cleaning [redacted]

Contributing to open source

https://archiveprogram.github.com/

The GitHub Arctic Code Vault

The GitHub Arctic Code Vault is a data repository preserved in the Arctic World Archive (AWA), a very-long-term archival facility 250 meters deep in the permafrost of an Arctic mountain. The archive is located in a decommissioned coal mine in the Svalbard archipelago, closer to the North Pole than the Arctic Circle. GitHub will capture a snapshot of every active public repository on 02/02/2020 and preserve that data in the Arctic Code Vault.



0 follow

VMware

pkreme

http://v

Highlight

Arctic Code Vault Contributor

Arctic Code Vault Contributor

Patrick Kremer contributed code to 1 repository in the **2020 GitHub Archive Program**:

vmware-samples/vcenter-event-broker-appliance

unt contributions.

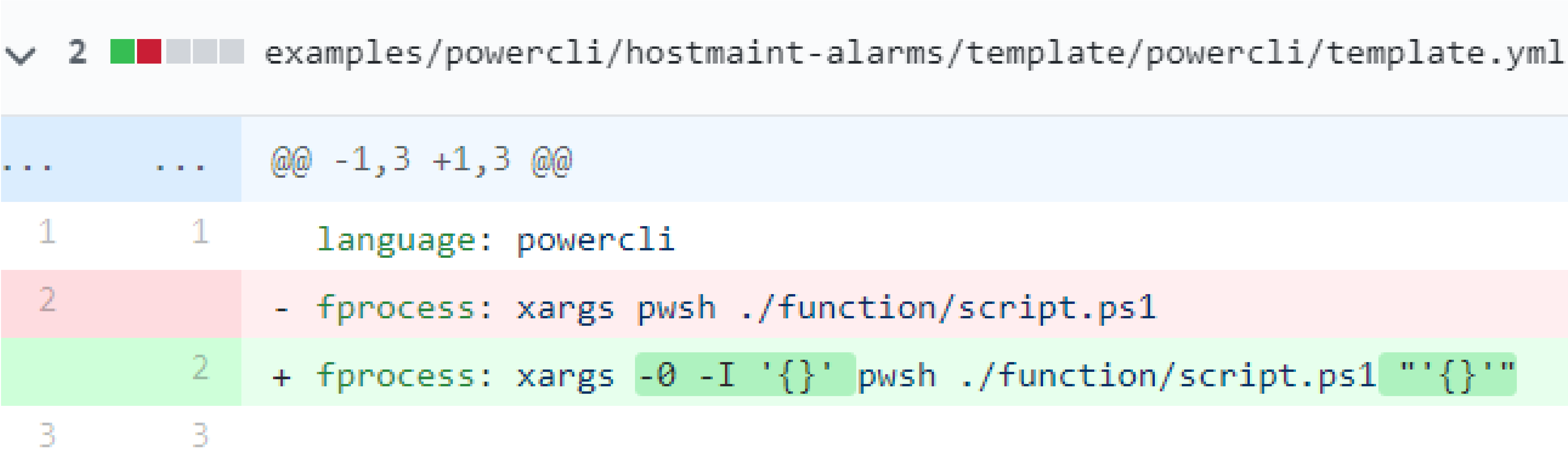
ivity

You have a new badge!

You contributed code to the **2020 GitHub Archive Program** and now have a badge for it. Thank you for being part of the program!

To opt out of displaying this badge, visit your profile settings.

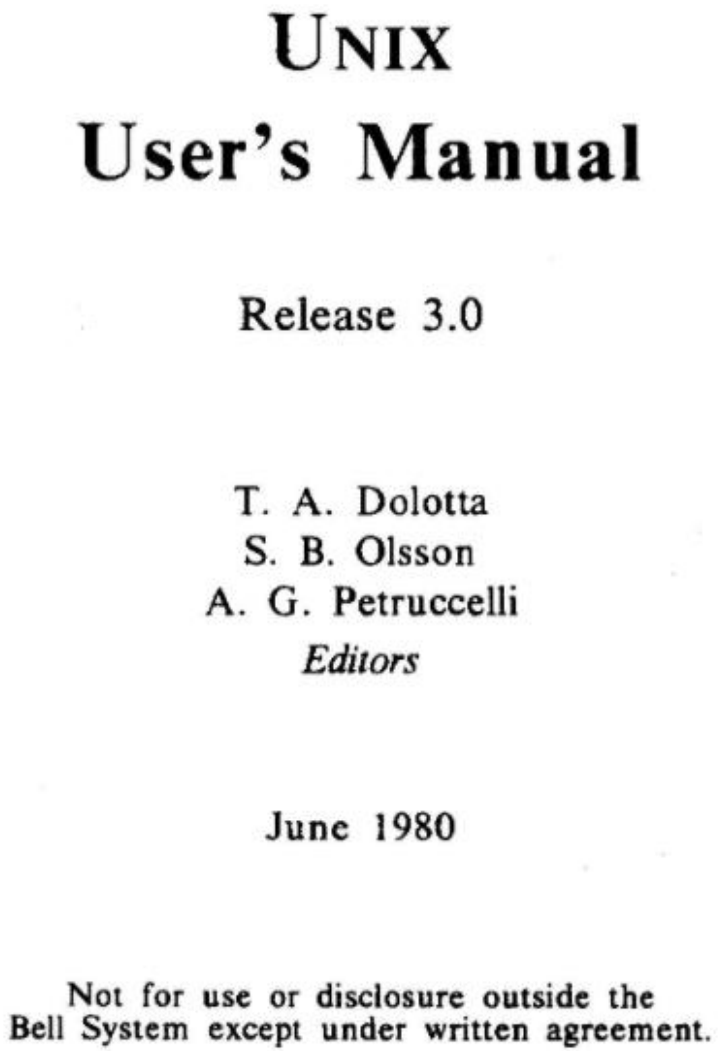
xargs – Everything old is new again



```
2 🟩🟥⬜⬜⬜ examples/powercli/hostmaint-alarms/template/powercli/template.yml
```

```diff
@@ -1,3 +1,3 @@
  language: powercli
- fprocess: xargs pwsh ./function/script.ps1
+ fprocess: xargs -0 -I '{}' pwsh ./function/script.ps1 "'{}'"
```

How old is xargs? At least 40 years.



UNIX

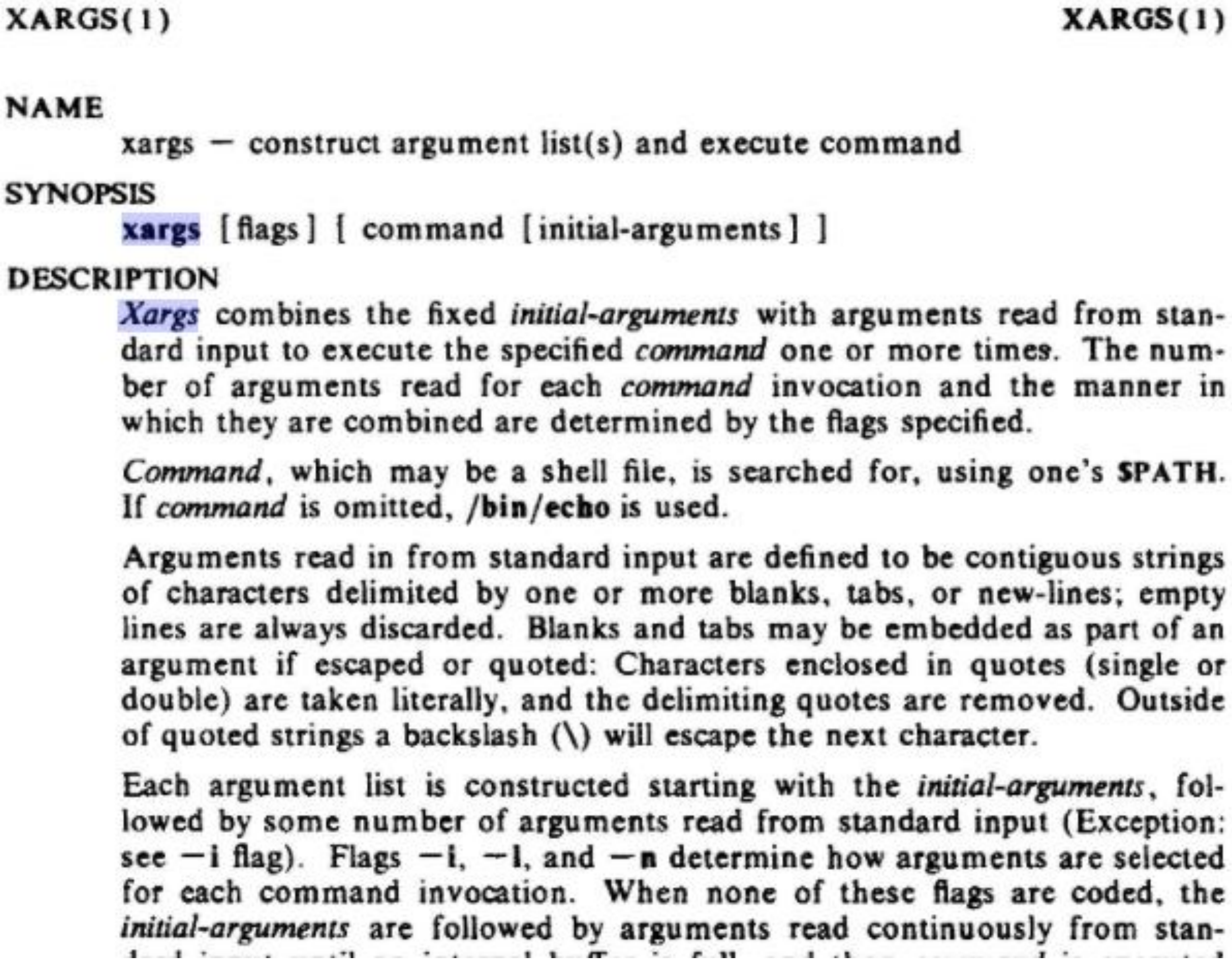
User's Manual

Release 3.0

T. A. Dolotta
S. B. Olsson
A. G. Petruccelli
Editors

June 1980

Not for use or disclosure outside the
Bell System except under written agreement.



XARGS(1) XARGS(1)

NAME

xargs − construct argument list(s) and execute command

SYNOPSIS

xargs [flags] [command [initial-arguments]]

DESCRIPTION

Xargs combines the fixed *initial-arguments* with arguments read from standard input to execute the specified *command* one or more times. The number of arguments read for each *command* invocation and the manner in which they are combined are determined by the flags specified.

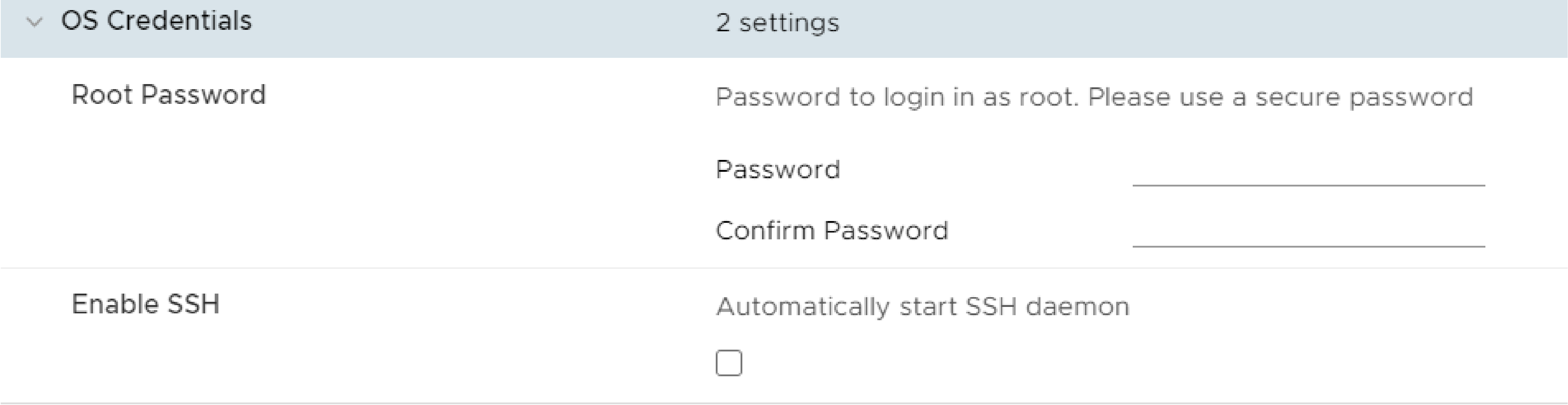
Command, which may be a shell file, is searched for, using one's **$PATH**. If *command* is omitted, **/bin/echo** is used.

Arguments read in from standard input are defined to be contiguous strings of characters delimited by one or more blanks, tabs, or new-lines; empty lines are always discarded. Blanks and tabs may be embedded as part of an argument if escaped or quoted: Characters enclosed in quotes (single or double) are taken literally, and the delimiting quotes are removed. Outside of quoted strings a backslash (\) will escape the next character.

Each argument list is constructed starting with the *initial-arguments*, followed by some number of arguments read from standard input (Exception: see **−i** flag). Flags **−i**, **−l**, and **−n** determine how arguments are selected for each command invocation. When none of these flags are coded, the *initial-arguments* are followed by arguments read continuously from stan-

Source: https://archive.org/details/bitsavers_attunixSysalRelease3Jun80_33886798

My checkbox



OS Credentials 2 settings

Root Password

Password to login in as root. Please use a secure password

Password ______

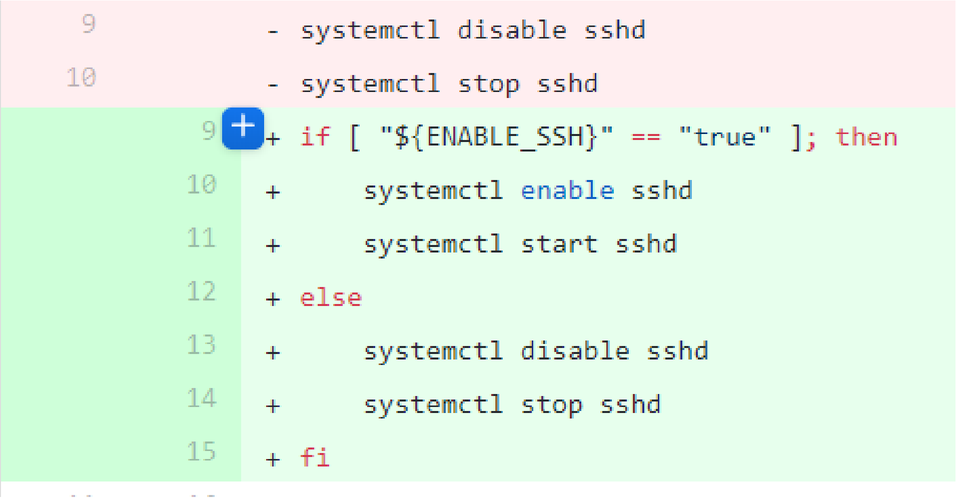
Confirm Password ______

Enable SSH

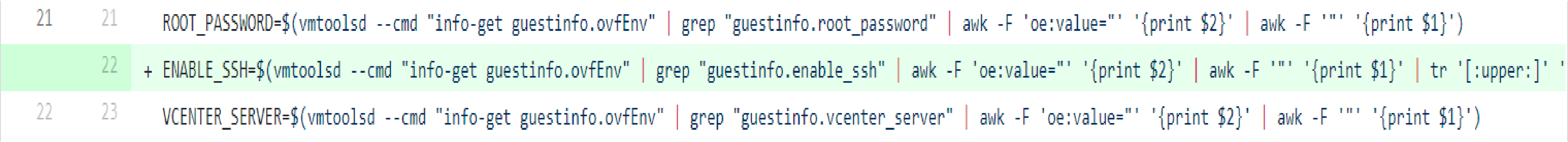
Automatically start SSH daemon

□

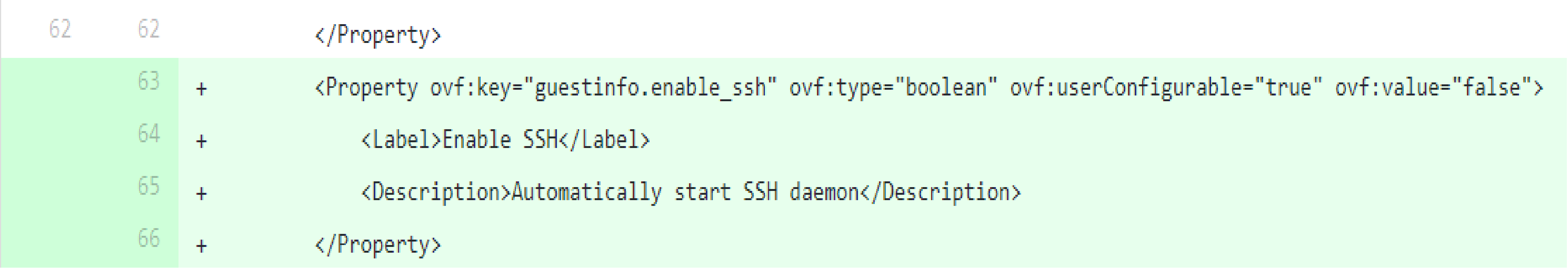
My checkbox



```
- systemctl disable sshd
- systemctl stop sshd
+ if [ "${ENABLE_SSH}" == "true" ]; then
+     systemctl enable sshd
+     systemctl start sshd
+ else
+     systemctl disable sshd
+     systemctl stop sshd
+ fi
```



```
  ROOT_PASSWORD=$(vmtoolsd --cmd "info-get guestinfo.ovfEnv" | grep "guestinfo.root_password" | awk -F 'oe:value="' '{print $2}' | awk -F '"' '{print $1}')
+ ENABLE_SSH=$(vmtoolsd --cmd "info-get guestinfo.ovfEnv" | grep "guestinfo.enable_ssh" | awk -F 'oe:value="' '{print $2}' | awk -F '"' '{print $1}' | tr '[:upper:]' '
  VCENTER_SERVER=$(vmtoolsd --cmd "info-get guestinfo.ovfEnv" | grep "guestinfo.vcenter_server" | awk -F 'oe:value="' '{print $2}' | awk -F '"' '{print $1}')
```



```
          </Property>
+         <Property ovf:key="guestinfo.enable_ssh" ovf:type="boolean" ovf:userConfigurable="true" ovf:value="false">
+             <Label>Enable SSH</Label>
+             <Description>Automatically start SSH daemon</Description>
+         </Property>
```

Create your own checkbox

VEBA Docs: https://vmweventbroker.io/

VEBA download: https://vmware.com/go/veba

My VEBA Blog: http://patrickkremer.com/veba

Public VEBA Slack:
https://vmwarecode.slack.com/archives/CQLT9B5AA

vmware vEXPERT ★

Thank You

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