

Skills modernization for the Virtual Infrastructure Admin

Take the first step using VEBA

Patrick Kremer

Staff Cloud Solution Architect, VMC on AWS

July 2020

About Me

VMware Employee since
2014 – Presales SE

Started working with
VMware in 2006 - ESX 3.0

Primarily a sysadmin

Limited programming
background

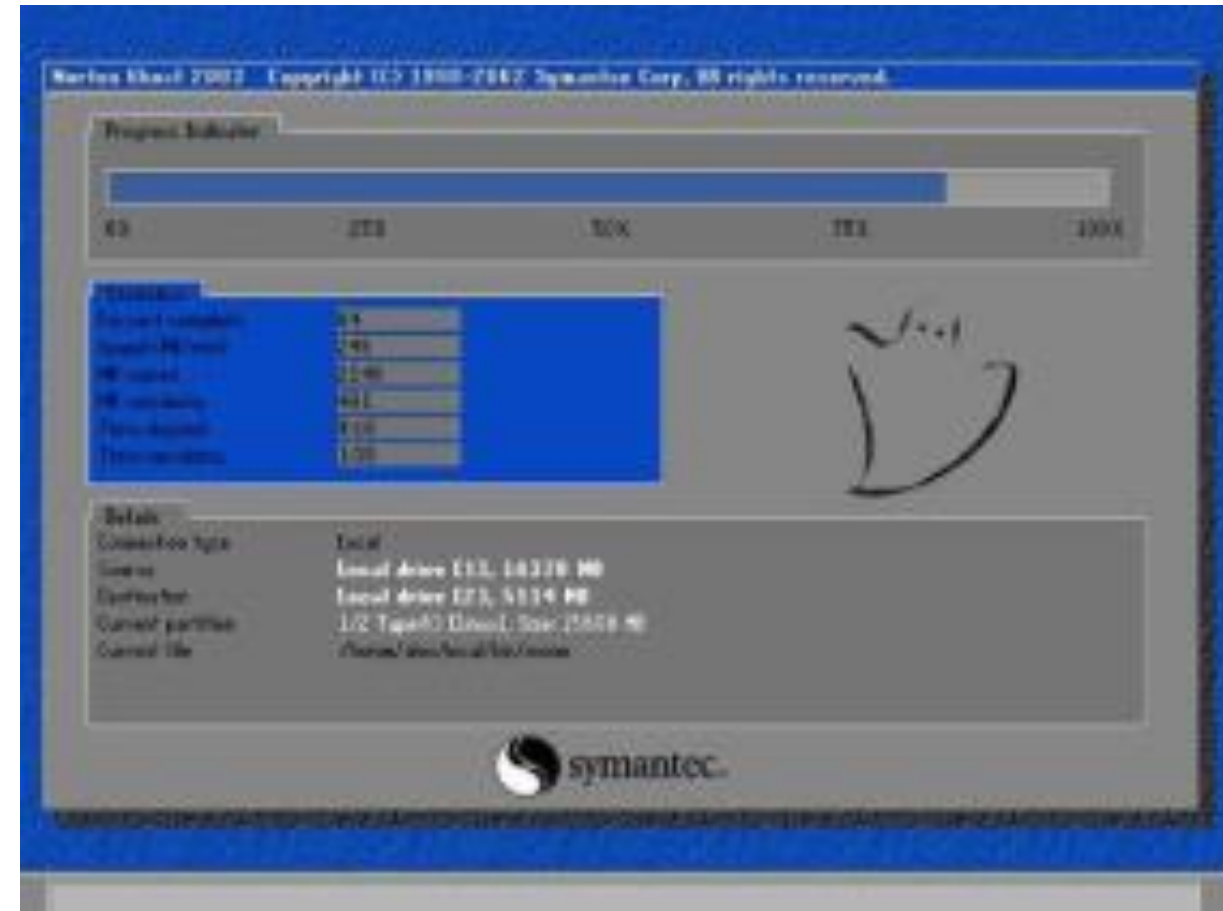
Currently a VMware Cloud
Solution Architect - VMC



Why Modernize your Skills?

Obsolescence

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



In the beginning



THE
BEGINNING



Since 2006

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



Three Tier Apps



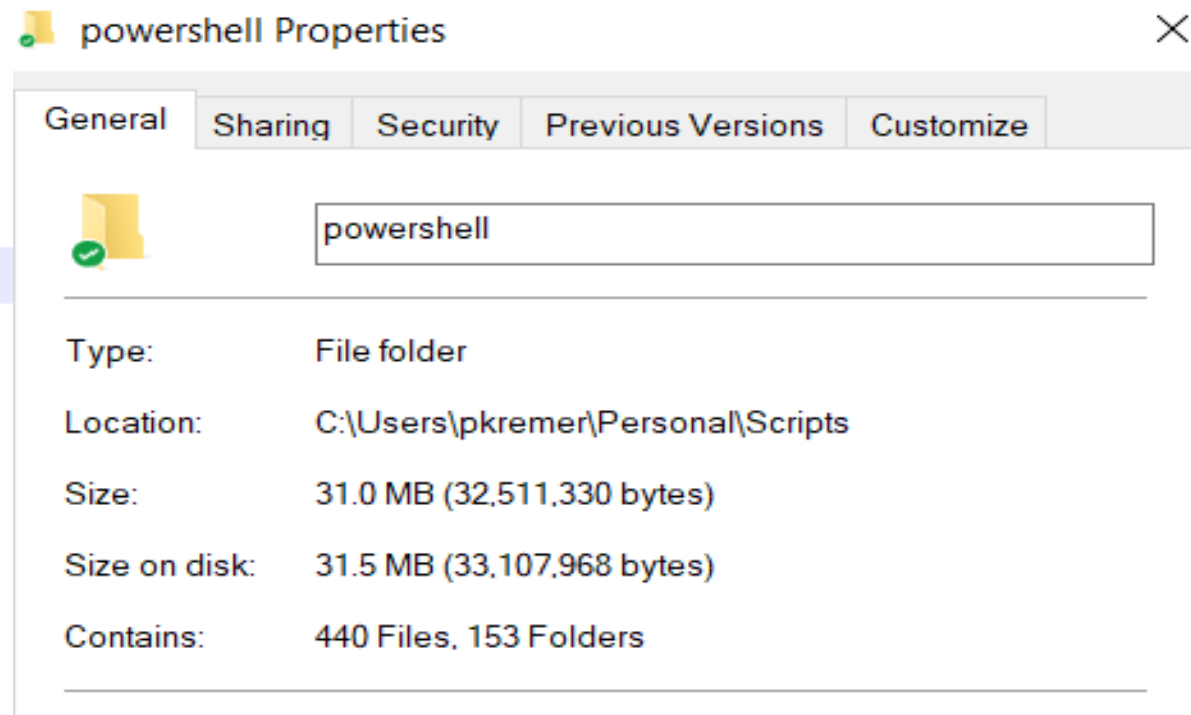
Virtual Machines



vSphere

Programming = Scripting

```
1 $AllClusters = Get-Cluster | where {$_.Name -ne "LabManager" -and $_.Name -ne "Double Take Windows 2000 ONLY" } | Sort-Object "Name"
2 ForEach( $Cluster in $AllClusters)
3 {
4     $ClusterName = $Cluster.Name
5     $AllVMs = get-cluster $ClusterName | Get-VM | Where { $_.Guest.State -ne "NotRunning" -And $_.Description -like "*2015*" } | Sort-Object
6     Name
7     ForEach ($VM in $AllVMs )
8     {
9         Write-Host $VM.Name
10        Write-Host $VM.Description
11    }
```



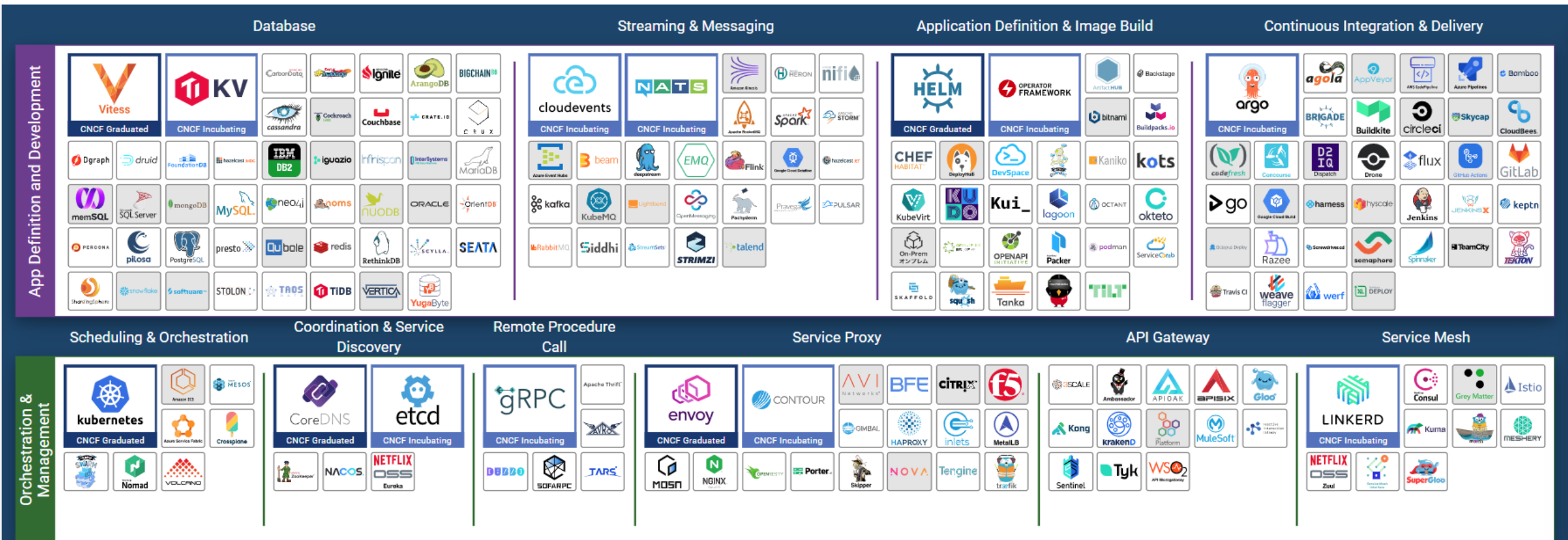
2013



2020

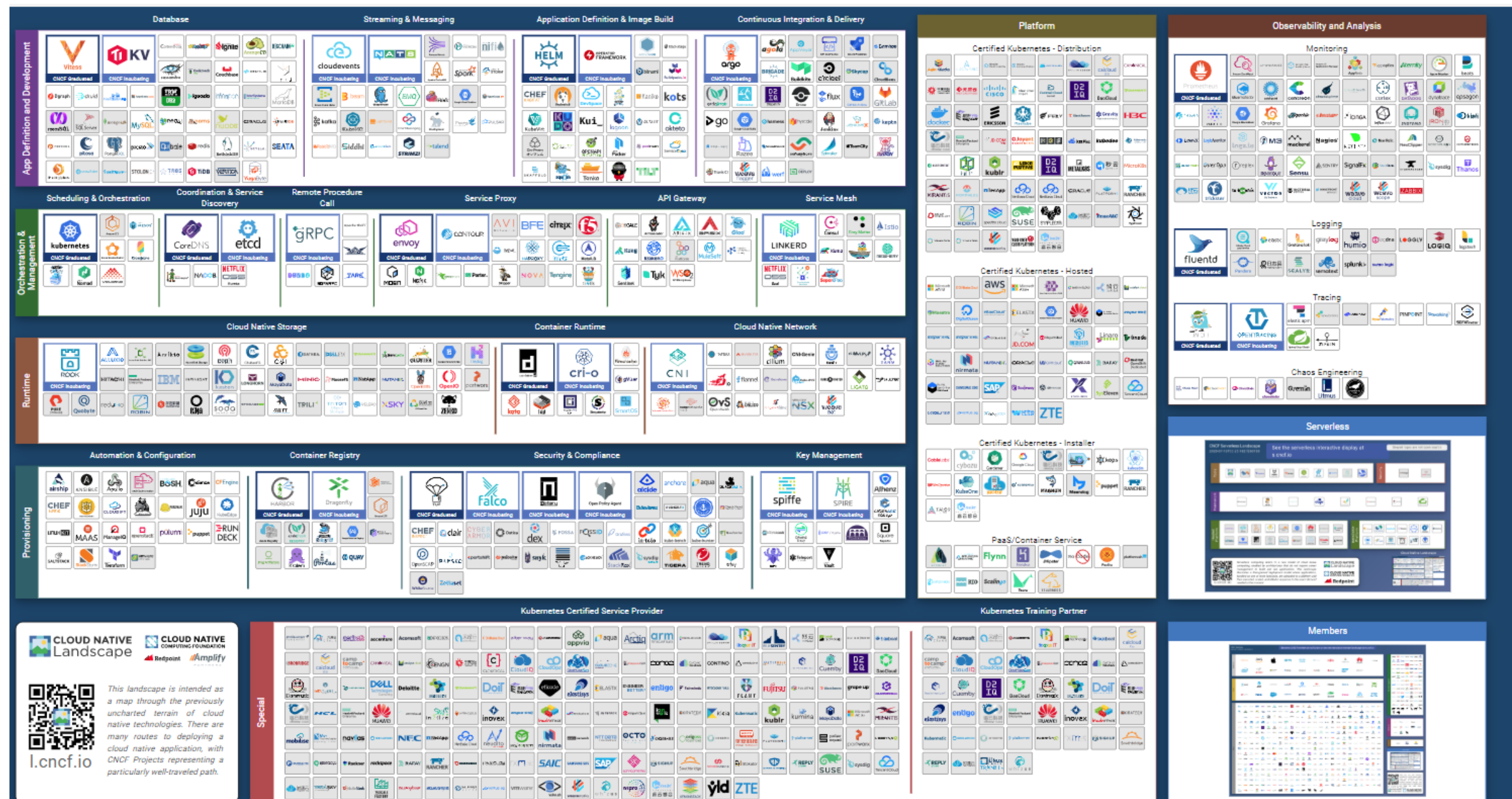
gitdevops
containers
microservices
Github
Kubernetes
agile
CI/CD
Docker

Cloud Native Landscape

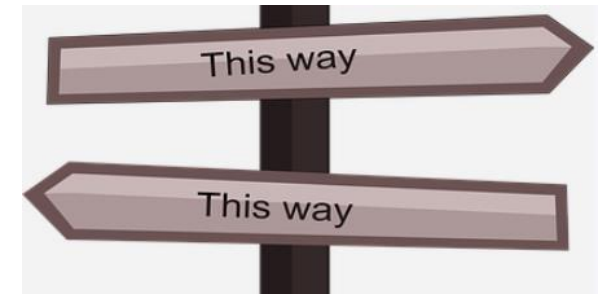


Cloud Native Landscape

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



Where to start?



VMware Event Broker Appliance

[Home](#)[Documentation](#)[Functions](#)[Community](#)[FAQs](#)[Resources](#)

Unlocking the Hidden Potential of Events in the VMware SDDC

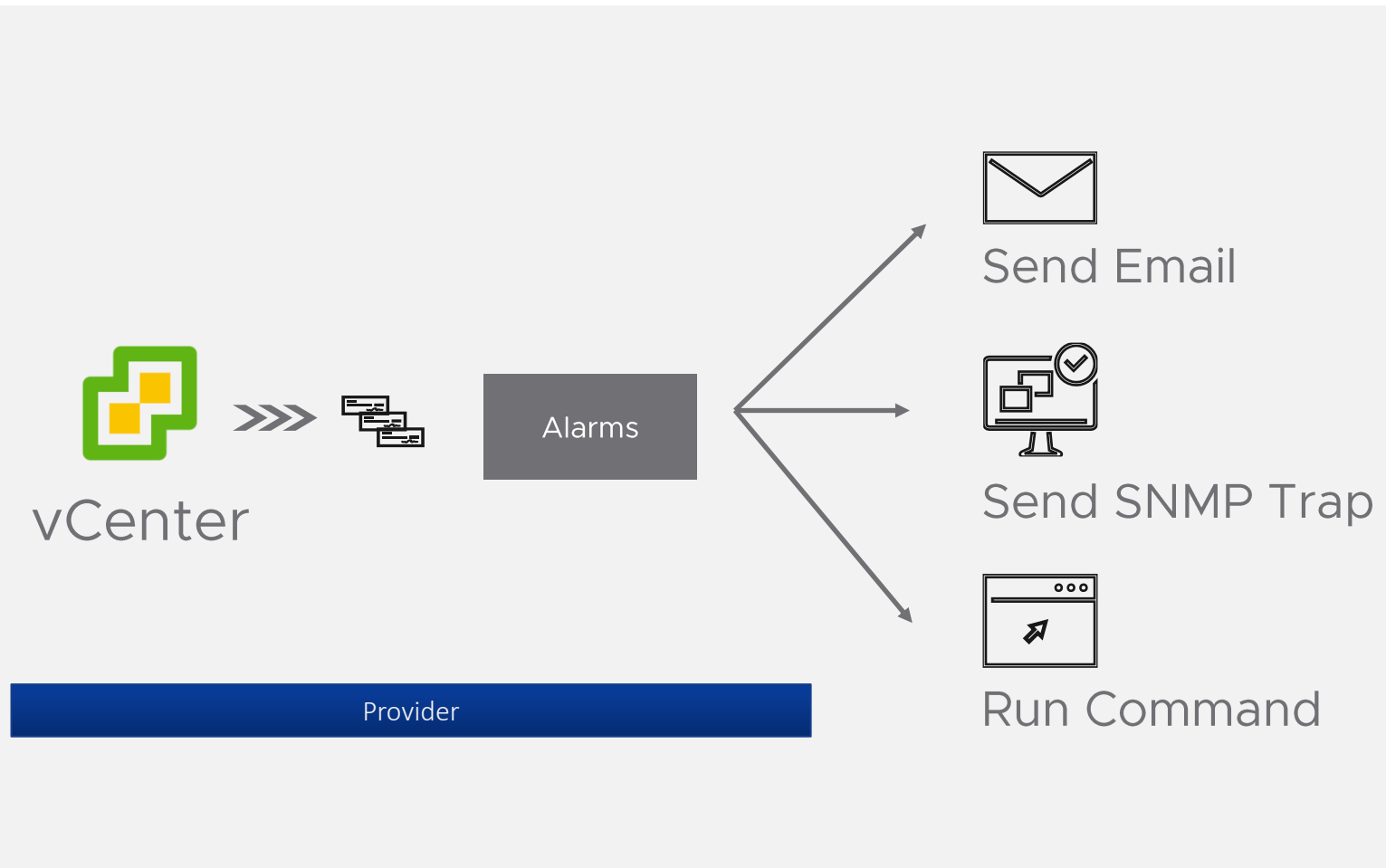
Use event-driven automation and take your vSphere Events to the next level! Easily trigger custom or pre-built actions to deliver powerful integrations within your datacenter but also across public cloud services. Integrations like Slack, Pager Duty, Service Now, etc. has never been easier before

#VEBA brings a Day  Night of difference to your SDDC

[DOWNLOAD & INSTALL](#)[DEPLOY FUNCTIONS](#)

vCenter Event Driven Automation

Trigger Actions based on vCenter Events



Alarms allows limited and structured workflow capability

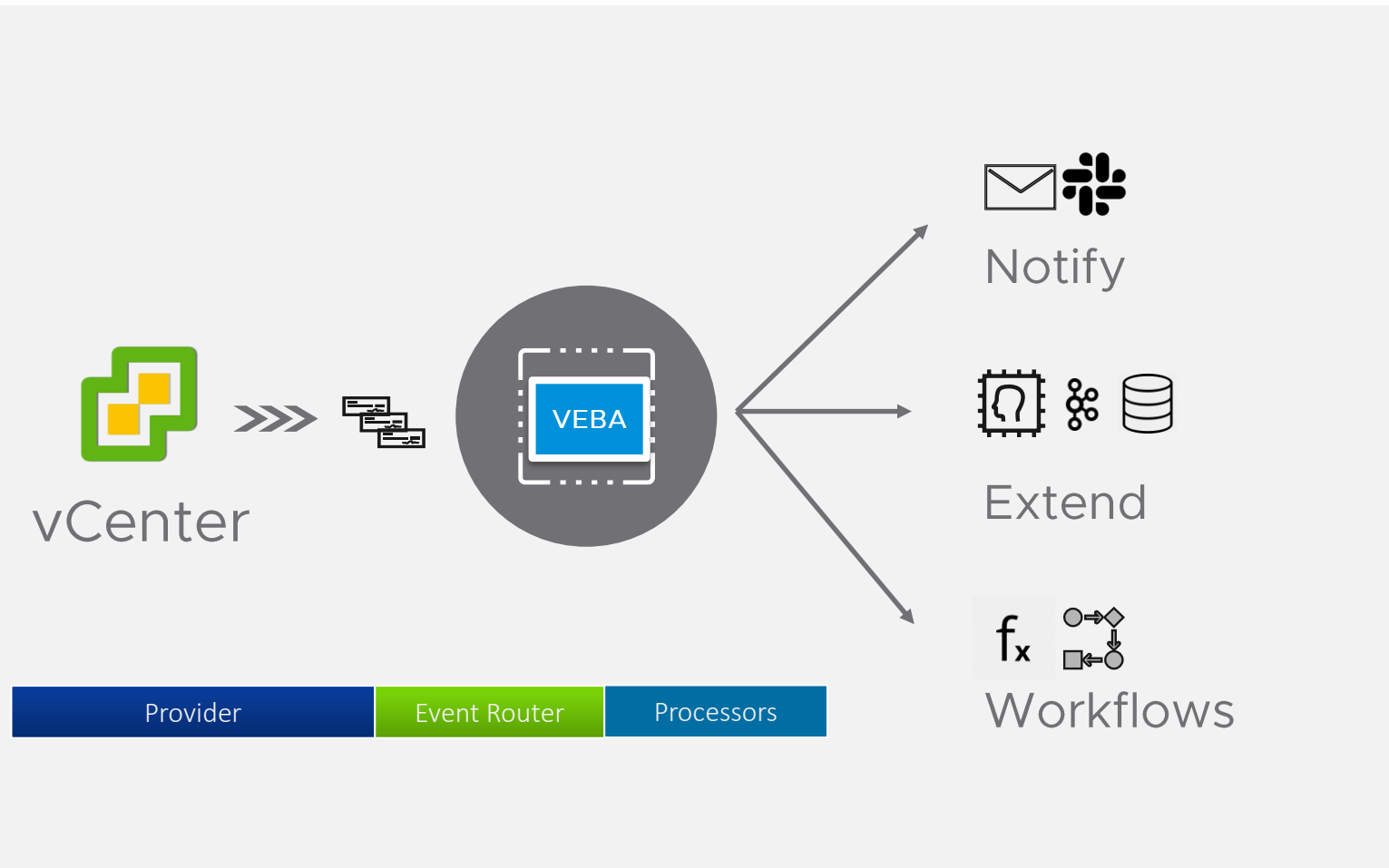
- Send Email
- Send SNMP traps
- Run Commands or Scripts

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

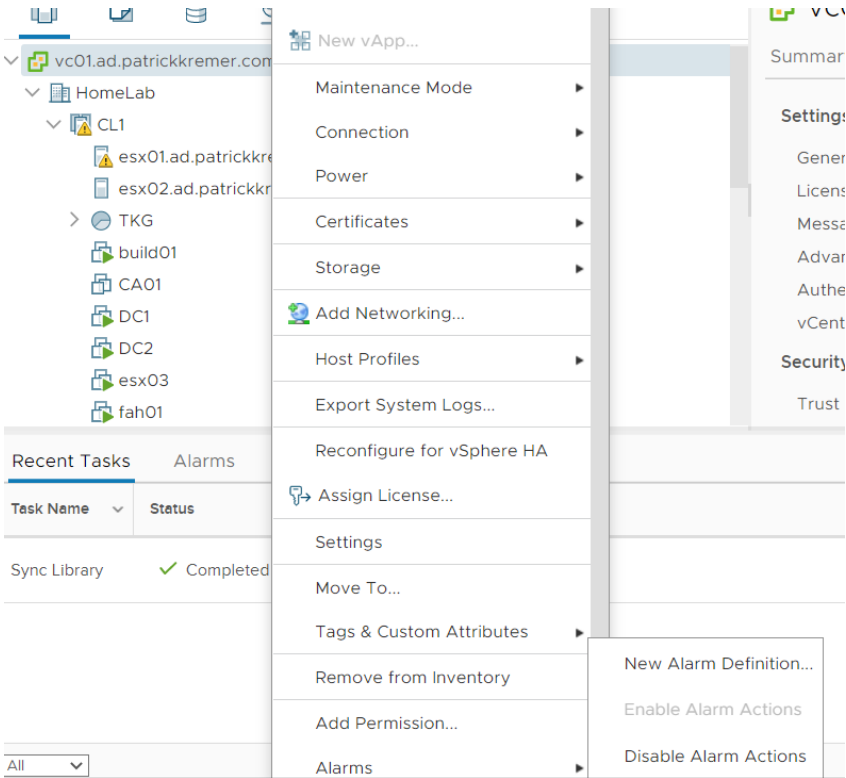
- Deployed as an appliance
- Enables innovation without requiring vCenter UI access
- Can enable fan-out messaging patterns

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 ****

 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 reached 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)
1 provider:
2   name: openfaas
3   gateway: https://veba.primp-industries.com
4 functions:
5   powershell-datastore-usage:
6     lang: powercli
7     handler: ./handler
8     image: vmware/veba-powercli-datastore-notification:latest
9     environment:
10      write_debug: true
11      read_debug: true
12      function_debug: false
13     secrets:
14      - vc-datastore-config
15     annotations:
16      topic: AlarmStatusChangedEvent
17
```


Appliance Processes

```

root      5865    0.0    0.1 109004    8524 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  Jul07    0:09 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/892eb859f87fd9b58cc1290f40c
nobody    6429    0.0    0.0 106724    7900 ?        Ssl  Jul07    0:00 /usr/sbin/tinywww
root      6499    0.0    0.1 107596    8580 ?        Ssl  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 fwatcdog
root      6580    0.0    0.1 109004    8524 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  Jul11    0:03 containerd-shim -namespace moby -workdir /var/lib/containerd/io.containerd.runtime.v1.linux/moby/bd5be0ea5fcc5f4c46082f00fc
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 ?        Ssl  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 ?        Ssl  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 ?        Ssl  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



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

 1 

December 2019

Deploying VEBA

<http://www.patrickkremer.com/veba>

Edit

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

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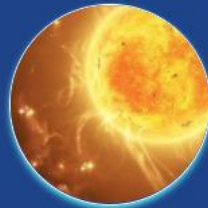
Meet and get to know Team #VEBA.



Michael Gasch



William Lam



Frankie Gold



Partheeban Kandasamy (PK)



Patrick Kremer



Robert Guske



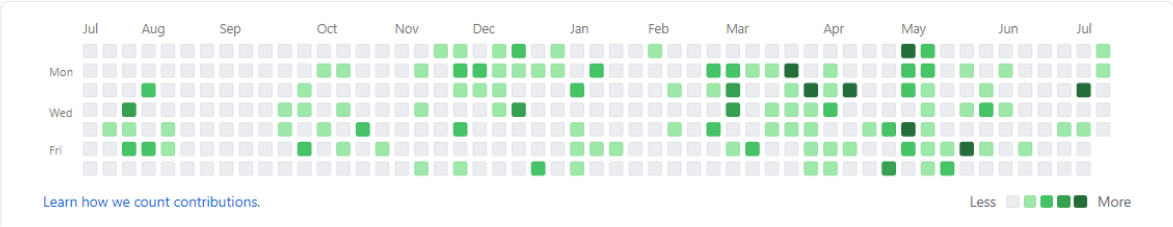
Vladimir Velikov



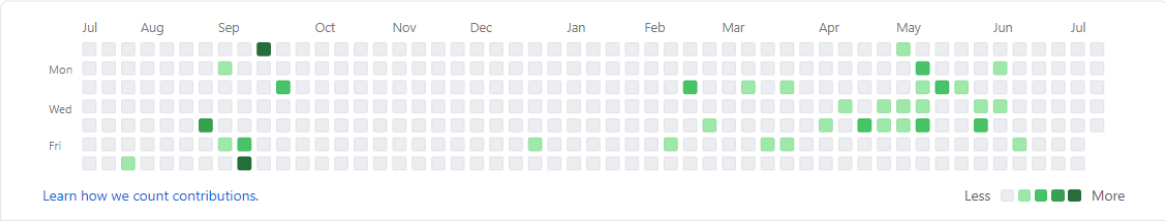
Martin Dekov

Here's them

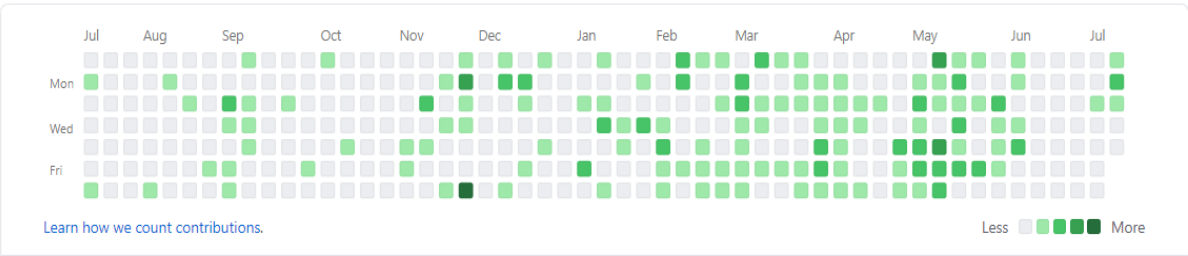
374 contributions in the last year



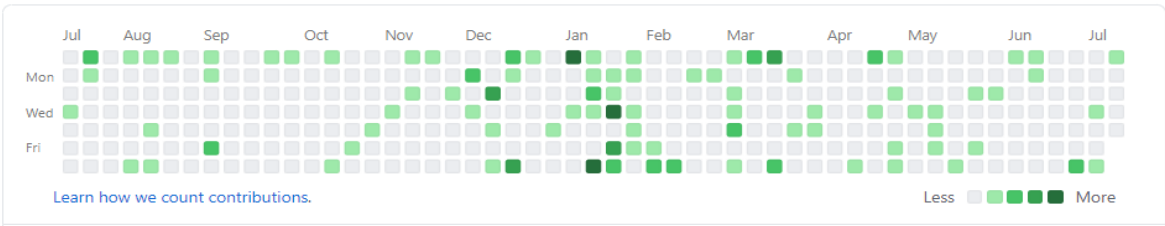
88 contributions in the last year



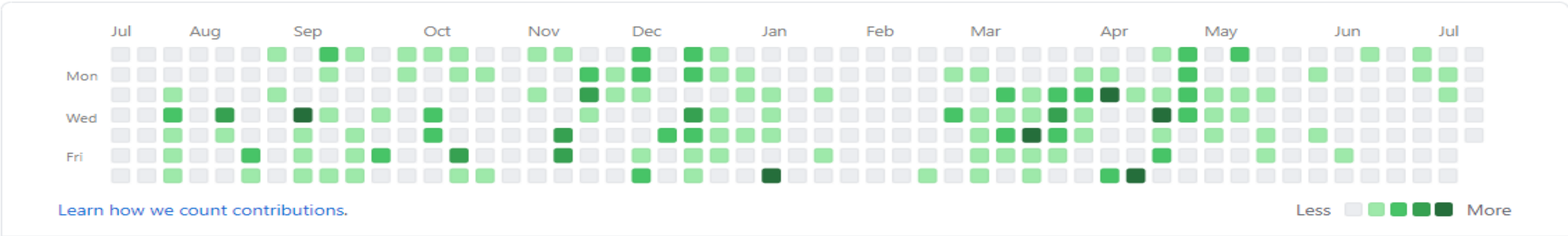
258 contributions in the last year



242 contributions in the last year



413 contributions in the last year



Here's me

	Jul	Aug	Sep	Oct	Nov	Dec
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fri	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[Learn how we count contributions.](#)

Help from the community

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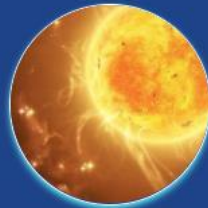
Meet and get to know Team #VEBA.



Michael Gasch



William Lam



Frankie Gold



Partheeban Kandasamy (PK)



Patrick Kremer



Robert Guske



Vladimir Velikov



Martin Dekov

Using the right tools

Containers run code

Pods are a group of containers

Pods are organized into namespaces

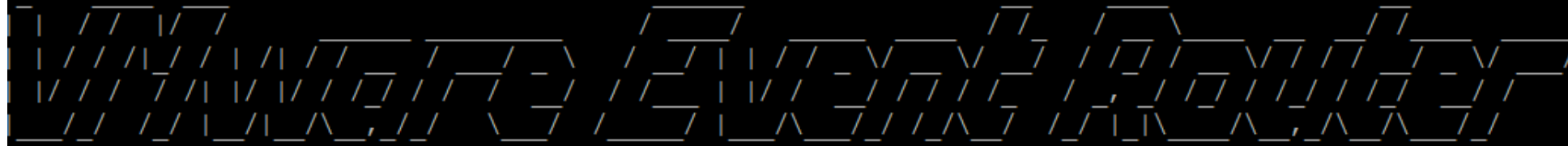
```
root@veba02 [ ~ ]# kubectl get pods -A
```

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-679dccccd74-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

Fixed typo 'read_debuge -> read_debug' #15

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

 Conversation **1**  Commits **1**  Checks **0**  Files changed **1**

Changes from all commits ▾ File filter... ▾ Jump to... ▾ 

2  examples/python/tagging/README.MD 		
↑	@@ -73,7 +73,7 @@ functions:	
73	73	image: embano1/pytag-fn:0.2
74	74	environment:
75	75	write_debug: true
76	-	read_debuge: true
76	+	read_debug: true
77	77	secrets:
78	78	- vcconfig # leave as is unless you changed the name during the creation of the vCenter credentials secrets above
79	79	annotations:
↓		

I fixed documentation

Fixes to documentation and sample config files for openfaas #18

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

Conversation 4 Commits 1 Checks 0 Files changed 7

Changes from all commits ▾ File filter... ▾ Jump to... ▾ ⚙ ▾

0 / 7 files viewed ⓘ

2 examples/powercli/hostmaint-alarms/README.md

@@ -23,7 +23,7 @@ faas-cli secret create vcconfig --from-file=vcconfig.json --tls-no-verify

23 23 2. Update the gateway in the stack.yml file with your vCenter Event Broker Appliance address and deploy the functions.

24 24 ```yaml

25 25 provider:

26 - name: faas

26 + name: openfaas

27 27 gateway: https://veba.yourdomain.com

28 28 ...

29 29 ...

2 examples/powercli/hostmaint-alarms/stack.yml

@@ -1,6 +1,6 @@

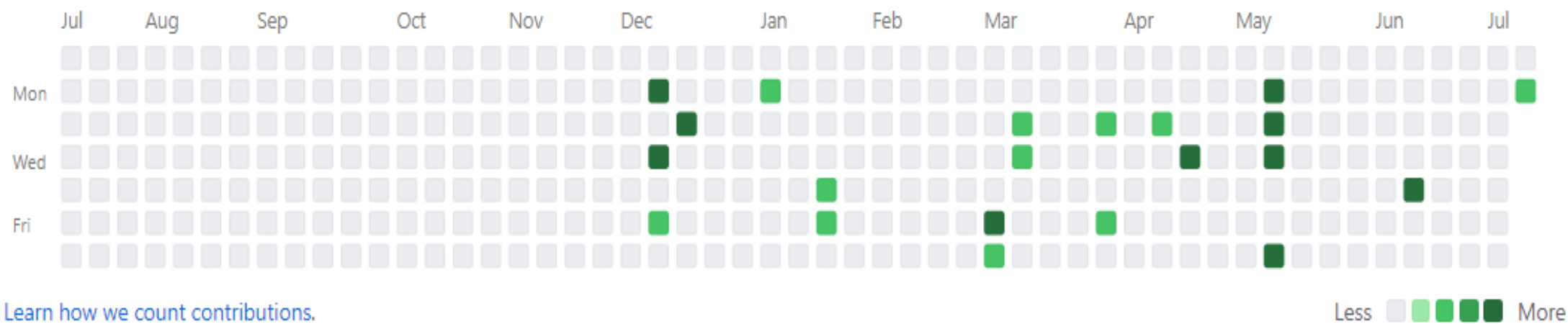
1 1 version: 1.0

Contributing to open source

Github contributions

34 contributions in the last year

Contribution settings ▼



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

Documentation, code, and more

🔗 0 Open ✓ 17 Closed		Author ▼	Label ▼
🔗	Updated Fling URL from vcenter to vmware ✓ #181 by kremerpatrick was merged 24 days ago • 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 #142 by kremerpatrick was merged on May 14 • Approved		enhancement
🔗	Updated docs to reflect new v0.4 path to event-router-config.json #137 by kremerpatrick was merged on May 14 • Approved		documentation
🔗	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		
🔗	Support datastore custom attribute as To: address #109 by kremerpatrick was closed on Apr 22 • Review required ➡ v0.4 Release		enhancement
🔗	Add initial release of troubleshooting guide ✓ #93 by kremerpatrick was merged on Mar 31 • Approved		
🔗	Initial release of troubleshooting guide in .md format #80 by kremerpatrick was closed on Mar 31 • Changes requested		

My checkbox

▼ OS Credentials	2 settings
Root Password	Password to login in as root. Please use a secure password
	Password <input type="password"/>
	Confirm Password <input type="password"/>
Enable SSH	Automatically start SSH daemon
	<input type="checkbox"/>

My checkbox

```
9      - systemctl disable sshd
10     - systemctl stop sshd

9 + if [ "${ENABLE_SSH}" == "true" ]; then
10 +     systemctl enable sshd
11 +     systemctl start sshd
12 + else
13 +     systemctl disable sshd
14 +     systemctl stop sshd
15 + fi
```

```
21 21  ROOT_PASSWORD=$(vmtoolsd --cmd "info-get guestinfo.ovfEnv" | grep "guestinfo.root_password" | awk -F 'oe:value=' '{print $2}' | awk -F '"' '{print $1}')
22 + ENABLE_SSH=$(vmtoolsd --cmd "info-get guestinfo.ovfEnv" | grep "guestinfo.enable_ssh" | awk -F 'oe:value=' '{print $2}' | awk -F '"' '{print $1}' | tr '[:upper:]' ' '
22 23  VCENTER_SERVER=$(vmtoolsd --cmd "info-get guestinfo.ovfEnv" | grep "guestinfo.vcenter_server" | awk -F 'oe:value=' '{print $2}' | awk -F '"' '{print $1}')
```

```
62 62      </Property>
63 +      <Property ovf:key="guestinfo.enable_ssh" ovf:type="boolean" ovf:userConfigurable="true" ovf:value="false">
64 +          <Label>Enable SSH</Label>
65 +          <Description>Automatically start SSH daemon</Description>
66 +      </Property>
```

Create your own checkbox

<https://vmweventbroker.io/>

<https://flings.vmware.com/vmware-event-broker-appliance>

<http://patrickkremer.com/veba>

<https://vmwarecode.slack.com/archives/CQLT9B5AA>





Thank You