

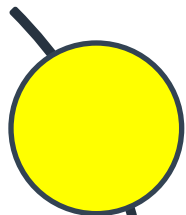


# 基于 Harbor 的企业级镜像仓库高可用实践

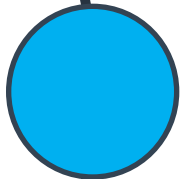
乐金明 才云科技

✉ [yuejinming@caicloud.io](mailto:yuejinming@caicloud.io)

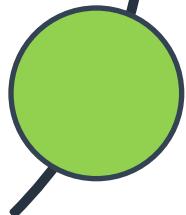
# Agenda



Harbor Overview



Harbor HA Practice



Experience and Advices



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HARBOR™



Kubernetes

- Enterprise-class registry server for Docker images

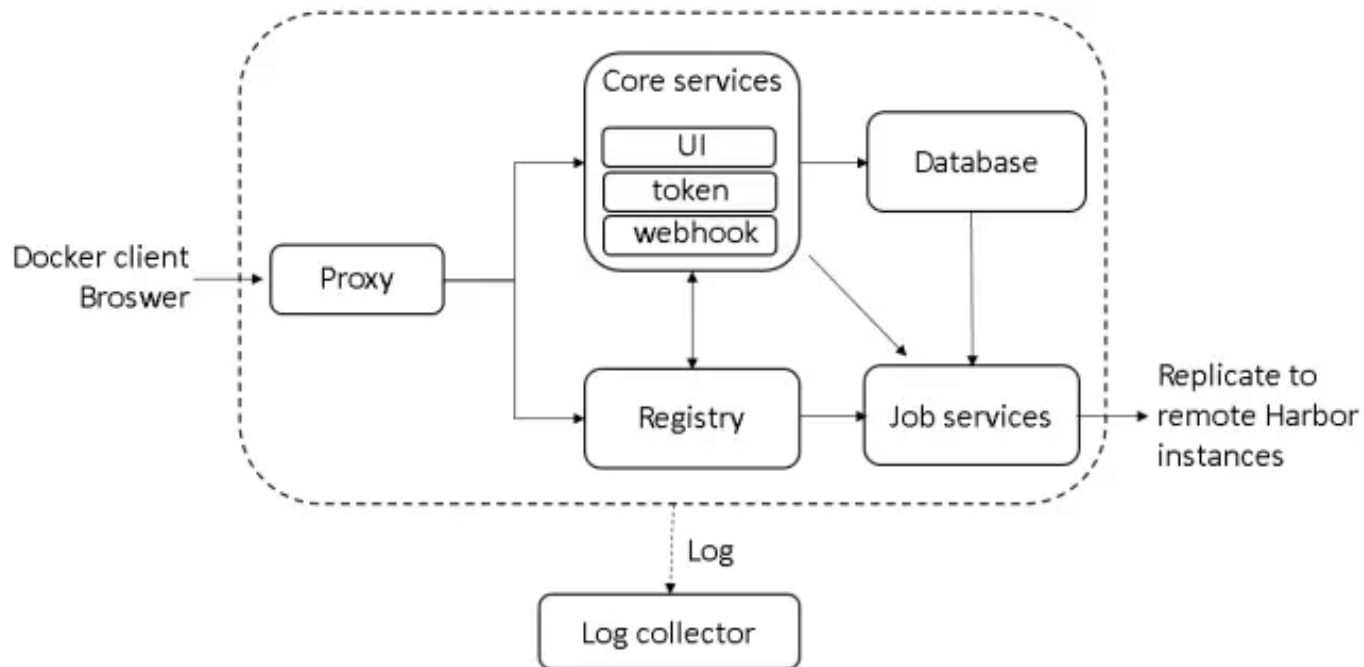
- Open source project

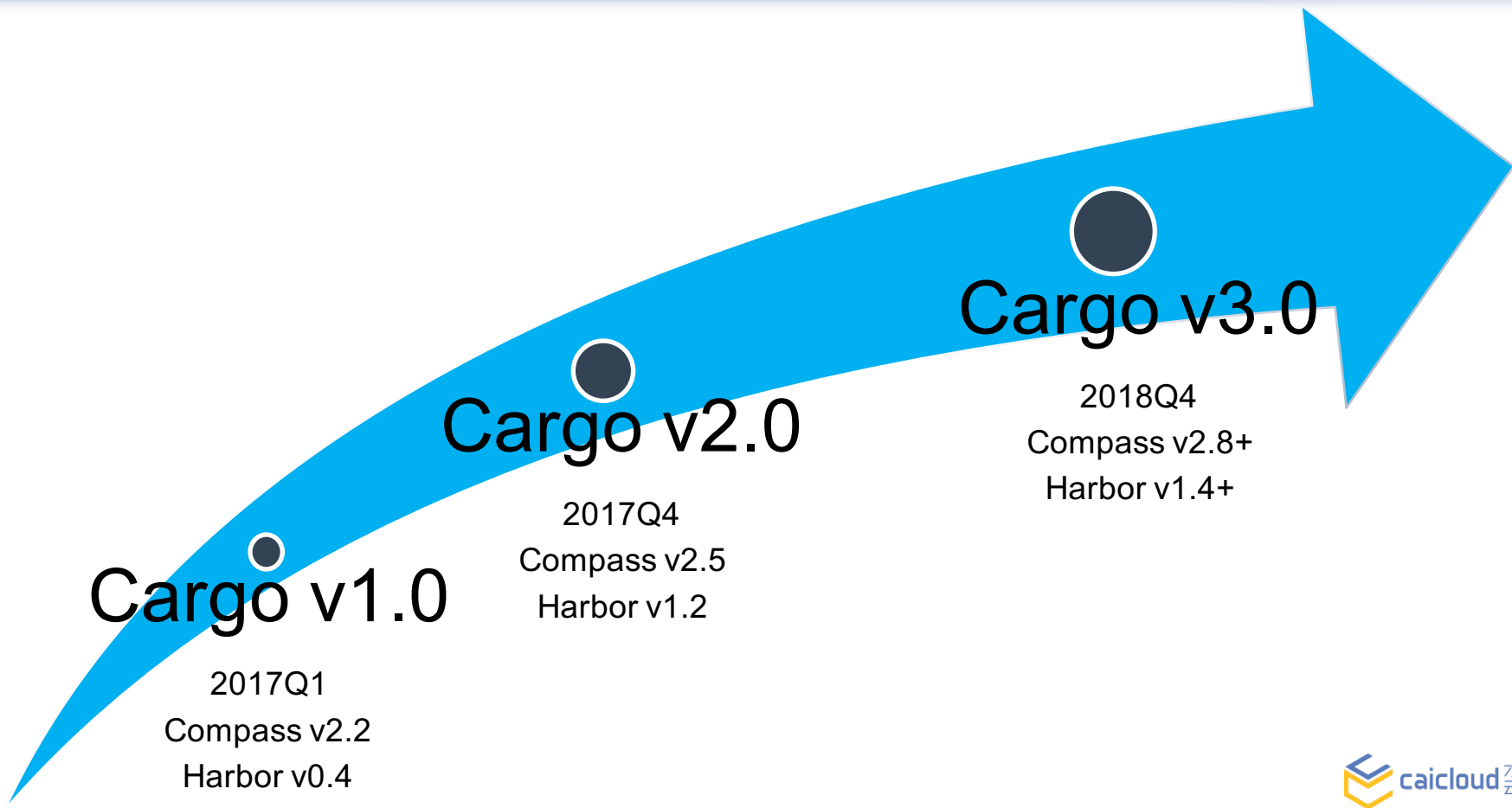
- Developed by VMware
- Started from Jan 31, 2016
- 3.6k+ stars, 1k+ forks

- Key features

- Graphical user portal
- Image replication
- Access control
- Operation auditing
- Image vulnerability scanning

## Harbor Overview – Architecture





# Compass



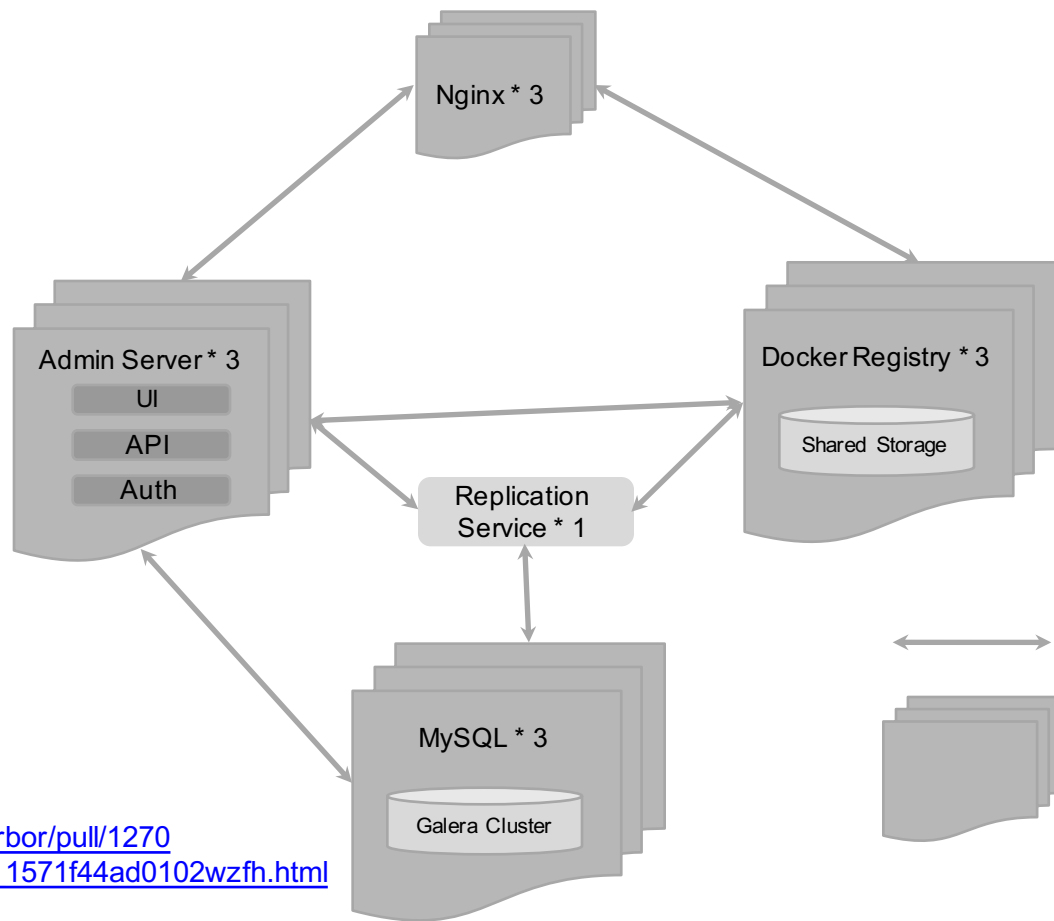
## Cargo



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## Cargo v1.0: Customized Harbor

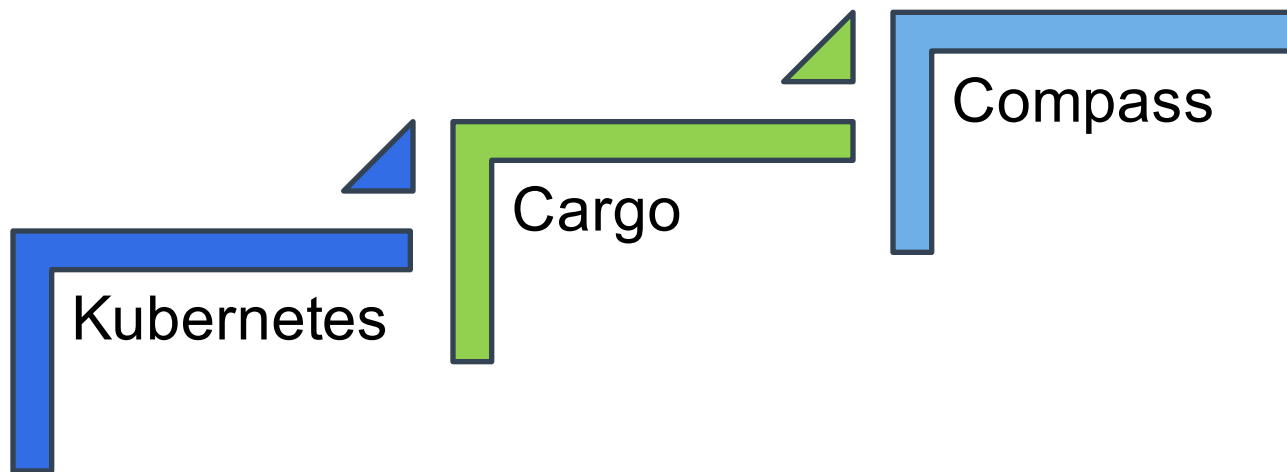
- Add label for images
- Support Clair for security
- Performance improvement
- ...



Reference:

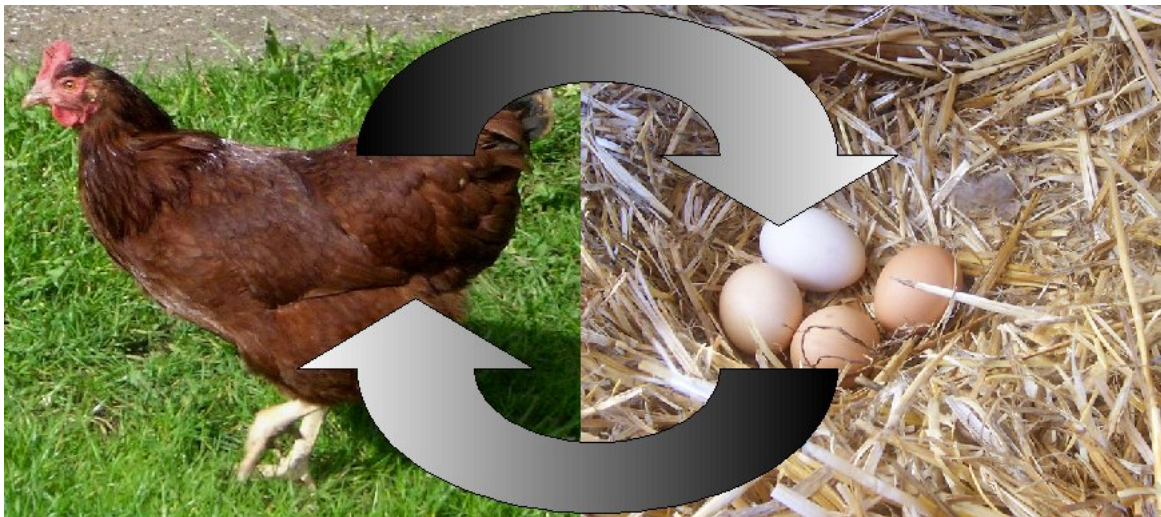
- <https://github.com/vmware/harbor/pull/1270>
- [http://blog.sina.com.cn/s/blog\\_1571f44ad0102wzfh.html](http://blog.sina.com.cn/s/blog_1571f44ad0102wzfh.html)





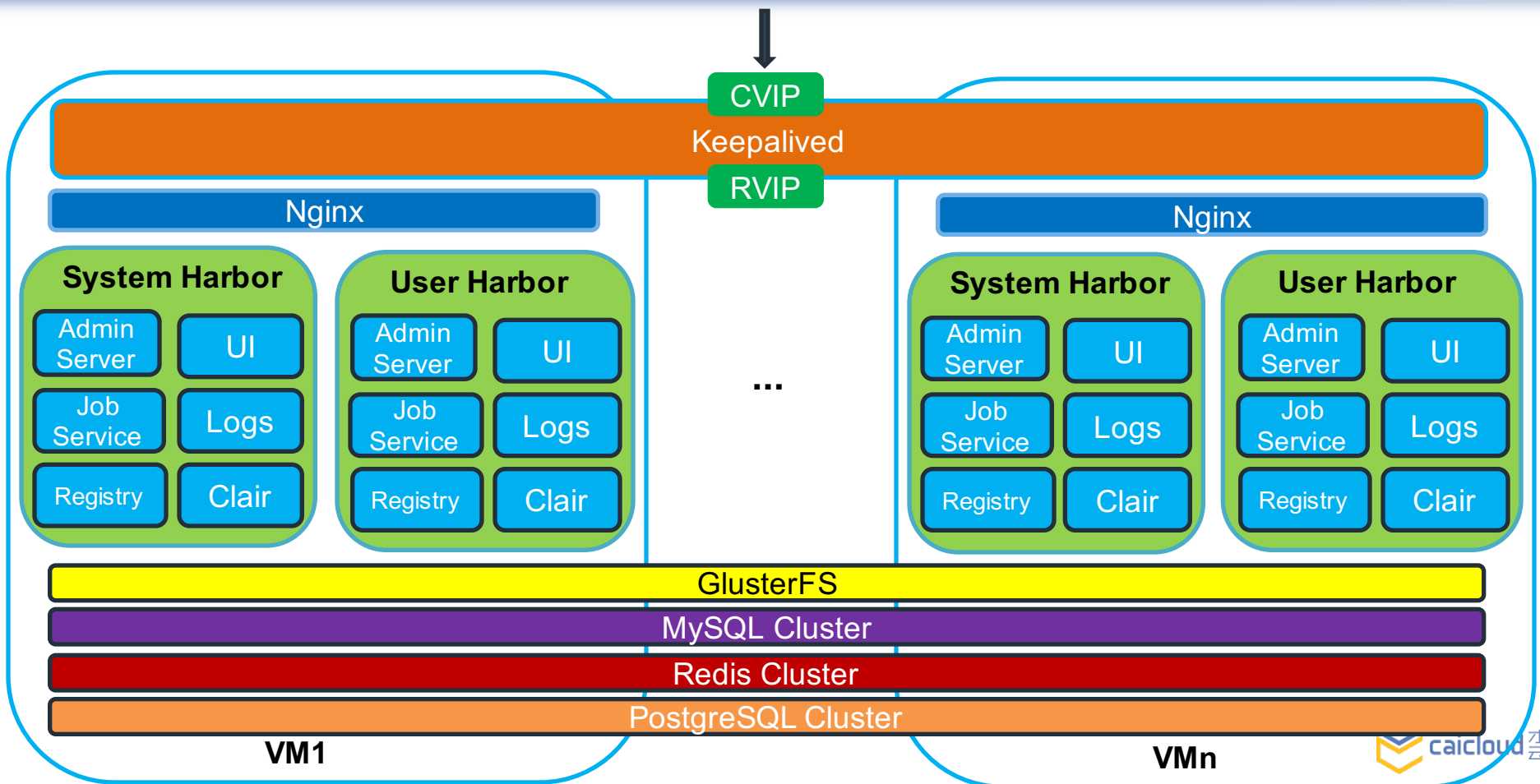
## What changes:

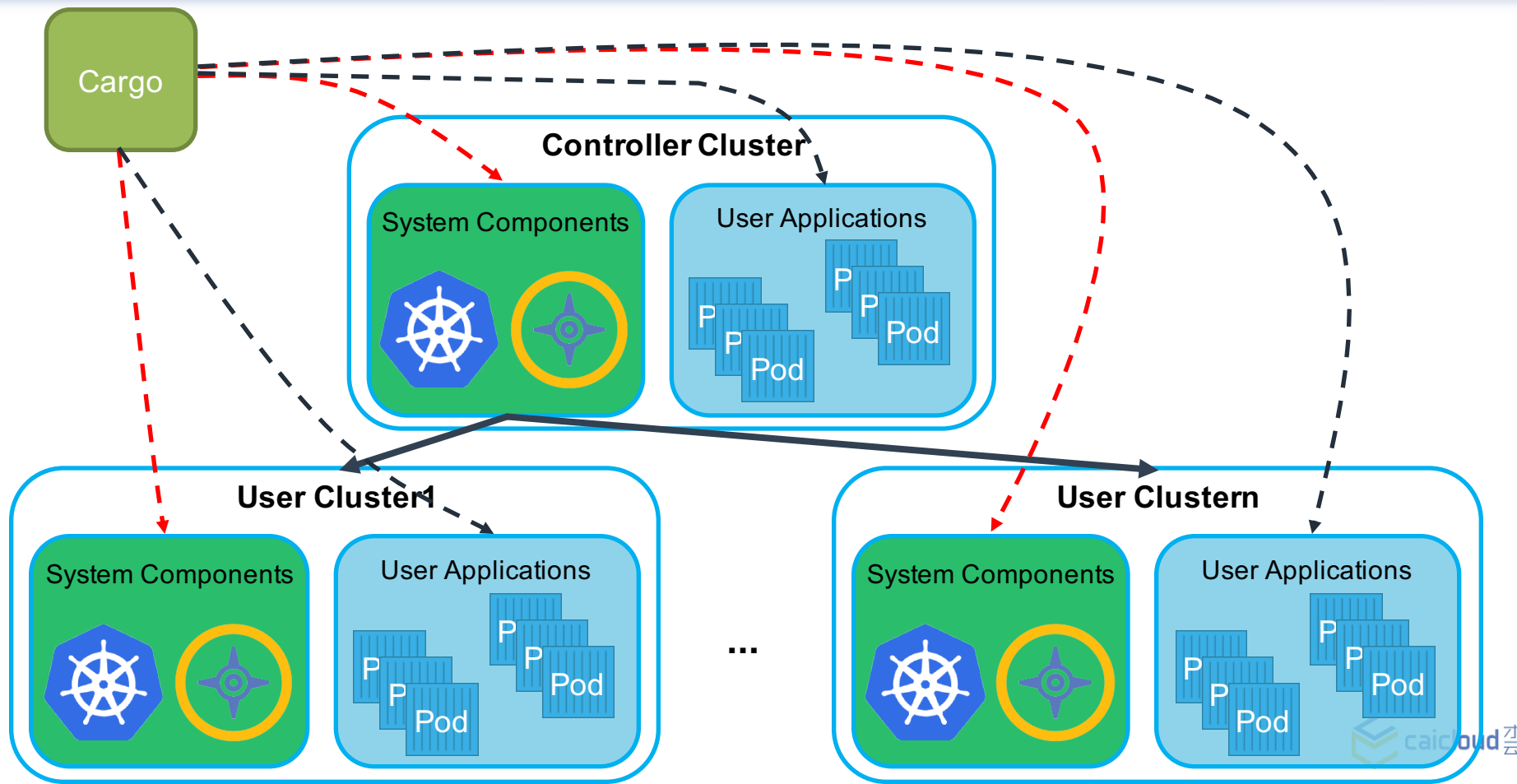
- Harbor releases v1.x
- Harbor supports [Clair](#) and [Notary](#)
- Containerize K8s components

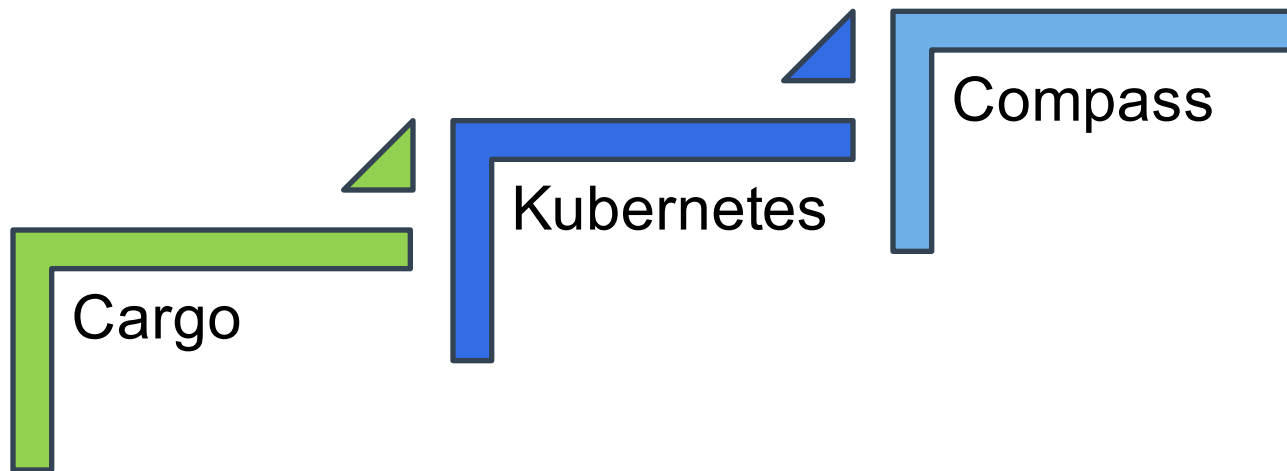


## Cargo v2.0: System Harbor + User Harbor

- Harbor v1.2
- System Harbor: For Compass and K8s component images
- User Harbor: For user images







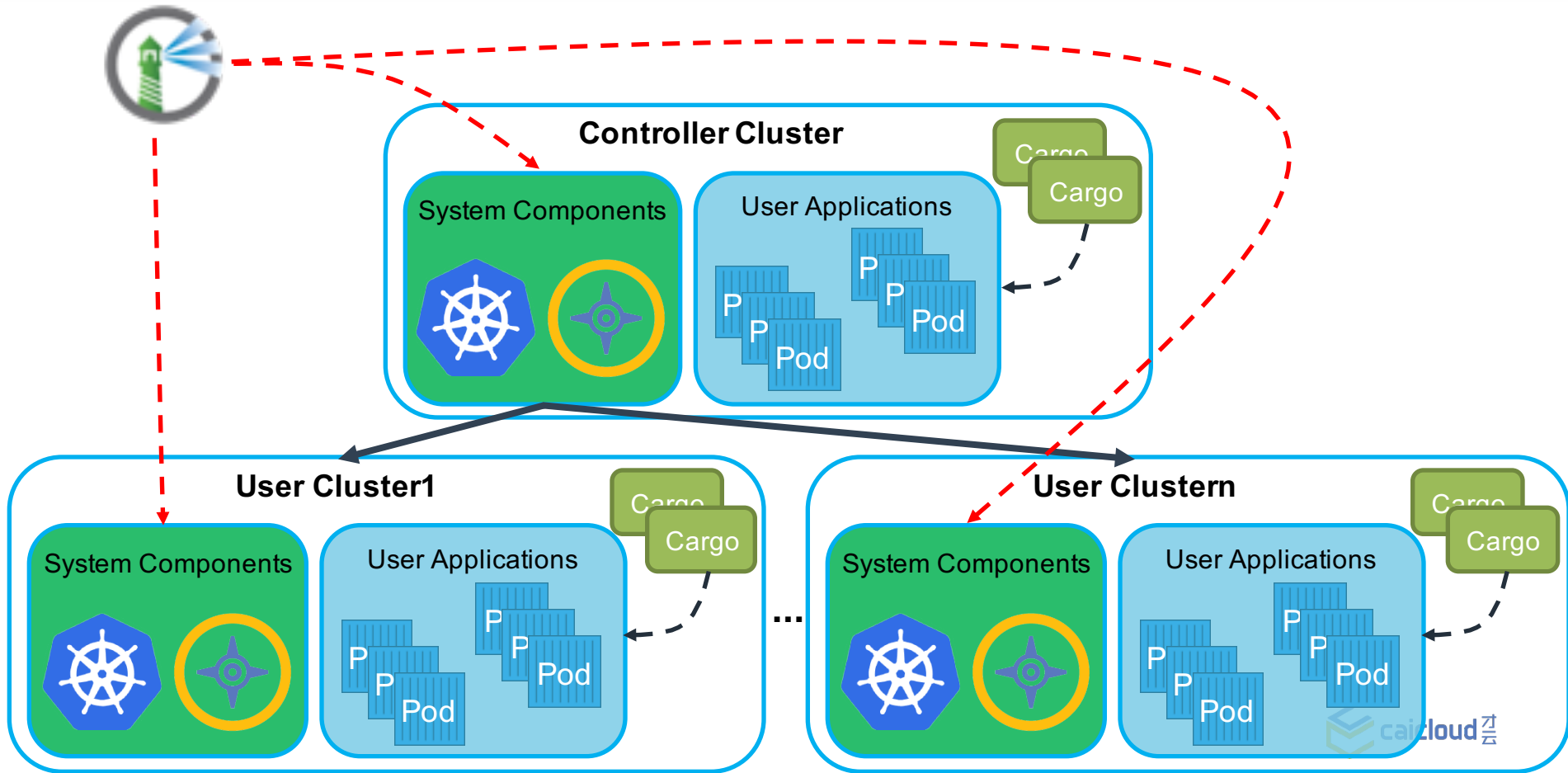
## What changes:

- Improvement of Harbor HA
- Need tenant isolation and multiple environments in Cargo

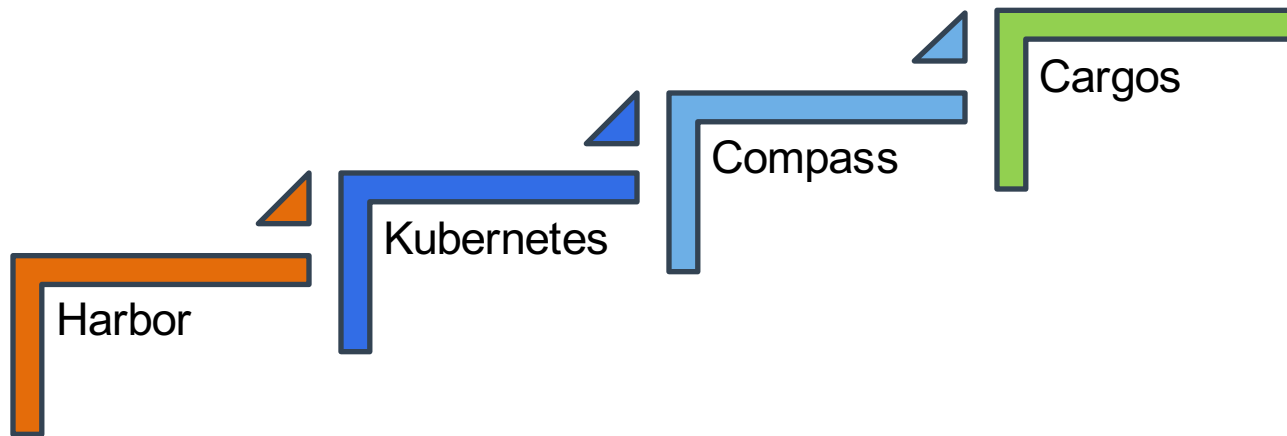
## Cargo v3.0:

- Harbor v1.4+
- Automatically provision in K8s
- Cargo is tenant resource and use tenant resource





Cargo v3.0 HA = Harbor HA + Cargos HA in K8s



P: Do not support configure Redis cluster

S: VIP for the master of Redis cluster

```
120 // SessionInit init redis session
121 // savepath like redis server addr,pool size,password,dbnum
122 // e.g. 127.0.0.1:6379,100,astaxie,0
123 func (rp *Provider) SessionInit(maxlifetime int64, savePath string) error {
124     rp.maxlifetime = maxlifetime
125     configs := strings.Split(savePath, ",")
126     if len(configs) > 0 {
127         rp.savePath = configs[0]
128     }
129     if len(configs) > 1 {
130         poolsize, err := strconv.Atoi(configs[1])
131         if err != nil || poolsize <= 0 {
132             rp.poolsize = MaxPoolSize
133         } else {
134             rp.poolsize = poolsize
135         }
136     } else {
137         rp.poolsize = MaxPoolSize
138     }
139     if len(configs) > 2 {
140         rp.password = configs[2]
141     }
142     if len(configs) > 3 {
143         dbnum, err := strconv.Atoi(configs[3])
```

```
vrp_script check_redis {
    script "/bin/busybox echo info | /usr/bin/nc KEEPALIVED_REDIS_NODE_IP KEEPALIVED_REDIS_NODE_PORT | /bin/busybox grep role:master > /dev/null"
    interval 1
    timeout 5
    fall 2
    rise 1
}
```

P: Do not support Clair and Notary in Active/Active mode

S: Active/Standby mode

A: Harbor v1.4 has fixed for Clair, but still not for Notary

P: How to do the health check

S: Periodically pull the test image

```
vrrp_script check_cargo {  
    script "/usr/local/bin/docker pull cargo.caicloudprivatetest.com/library/hello-world:latest"  
    interval 10  
    timeout 10  
    fall 2  
    rise 1  
}
```

< 项目

library 项目管理员

镜像仓库 成员 日志 复制

用户名	镜像名称	标签	操作	时间戳
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:21
anonymous	library/hello-world	latest	pull	2018/2/12 下午1:20



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谢谢大家！