DevOps World

Jenkins World

Developing and Delivering Jenkins in the cloud

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“Olblak”

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@Cloudbees

Jenkins Contributor

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Cloud Developer Advocate

Microsoft

bbenz

What's the Jenkins Infrastructure Project?

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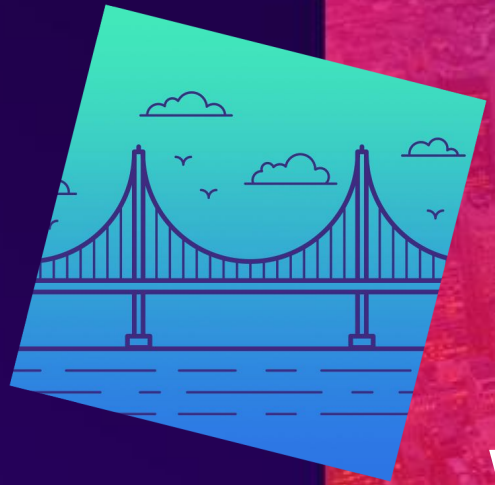
Github

68 Repositories
8967 Commits
333 Contributors

- Managed Services
  - Jenkins
  - Tracking Issues
  - Wiki
  - etc.
- Home made application
  - Pluginsite
  - Account
  - Main Website
  - Etc.
- Technologies
  - Java/Ruby/Groovy/Perl/Bash/Javascript
  - Puppet/Kubernetes/Terraform
  - Markdown,Asciidoctor
  - etc.

Open Source Infrastructure Project



What are the challenges?

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People

Contributor Driven
Chaotic Disponibilities
Limited People
Groups:
- Privileged
- The others

- ★ IAAS
- ★ SAAS
- ★ PAAS
- ★ *AAS

People

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Communication

Highly Distributed
Chaotic Disponibilities
Channels

★ Asynchronous Communication
★ Audit
★ Test
★ Deploy

People

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Communication

Highly Distributed
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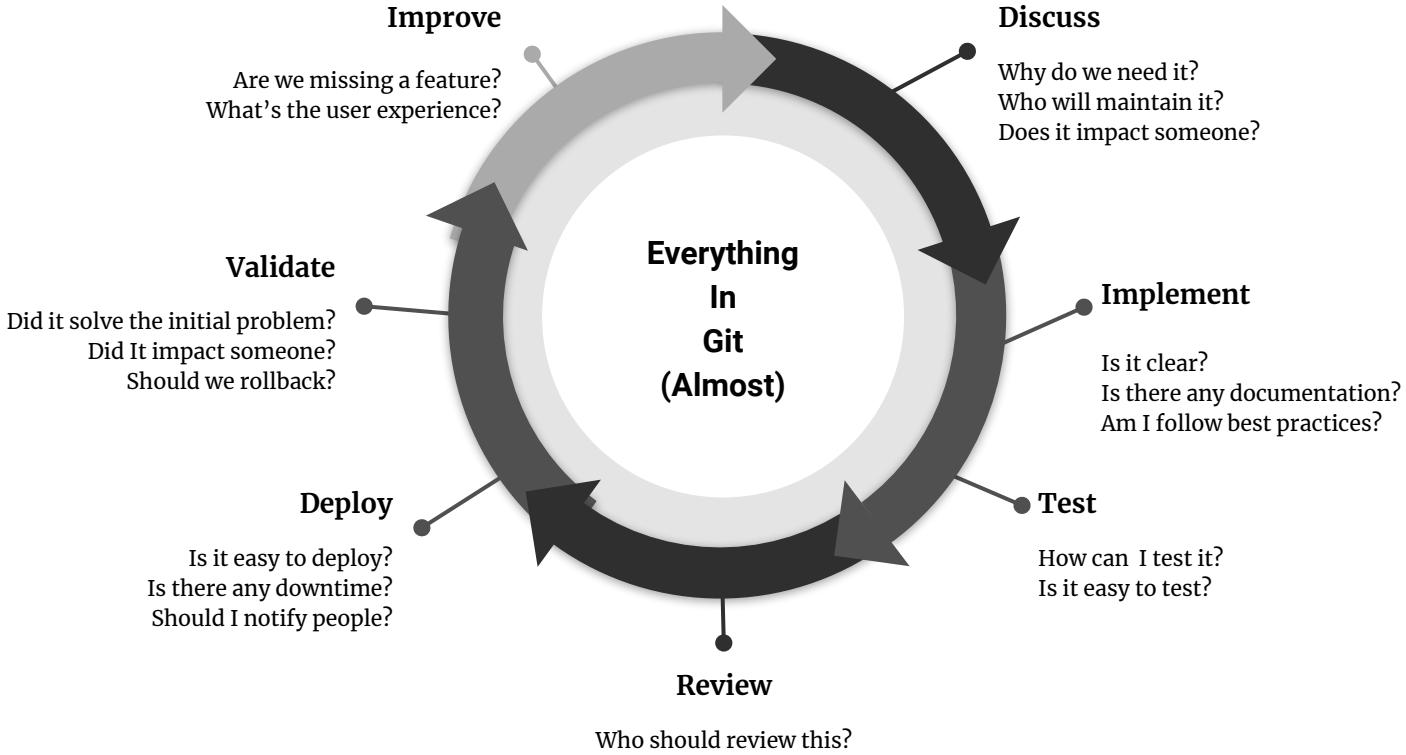
★ Audit
★ Test
★ Deploy

Technical

Amount of Technologies
Turn Over
Legacy

★ Strict on new services
★ Communicate



What is the Current State with Azure?

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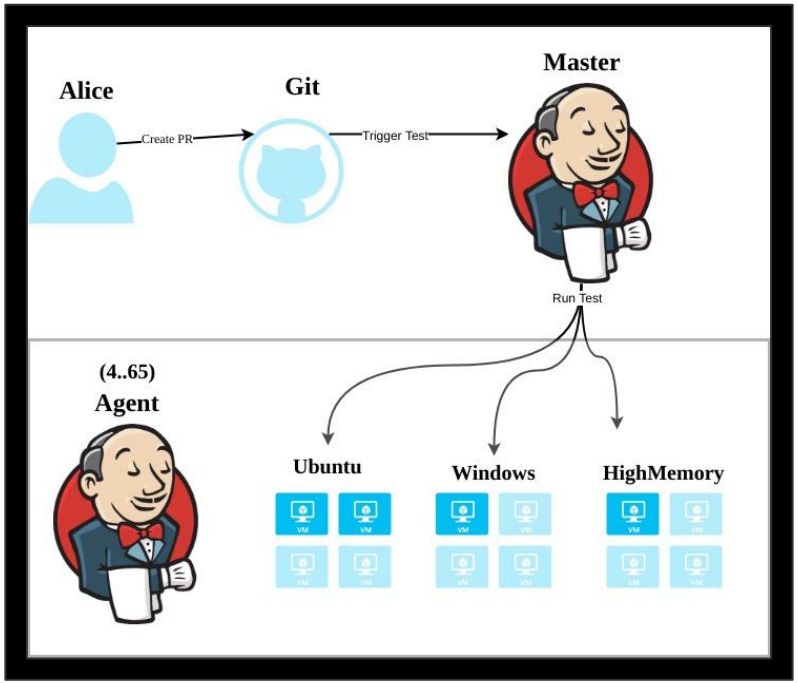
Non Persistent Service

Lifecycle defined by an application

Jenkins

Kubernetes



Jenkins Plugins on Azure

QuickStarts, tutorials, plugins on GitHub

https://docs.microsoft.com/azure/jenkins

azure-credentials-plugin
Jenkins Azure Credentials plugin
Java ★6 9 MIT Updated on Aug 1

azure-cli-plugin
A Jenkins plugin to use Azure CLI for managing Azure resources.
jenkins azure azure-cli jenkins-plugin
Java ★4 8 MIT 1 issue needs help Updated on Jun 28

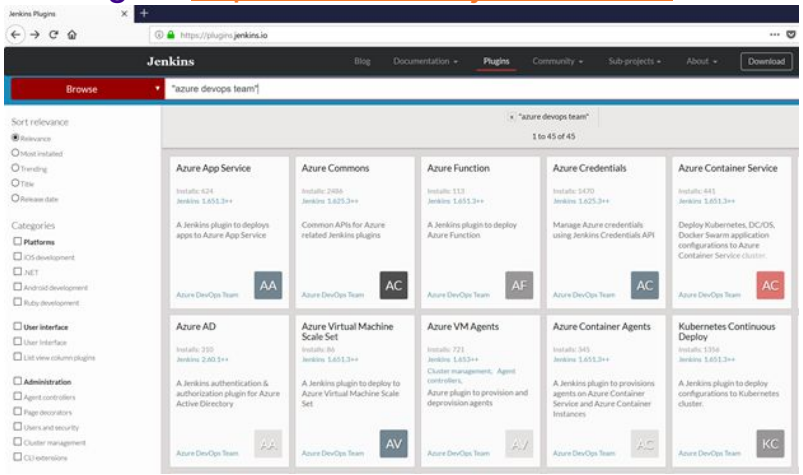
azure-ad-plugin
Authentication and Authorization with Azure AD
Java ★3 10 MIT Updated 10 hours ago

azure-commons-plugin
Common APIs for Azure related Jenkins plugins
Java ★3 8 Updated on Aug 14

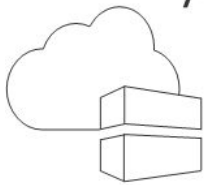
azure-container-agents-plugin
Azure Container Agents Plugin for Jenkins
Java ★9 4 MIT Updated on Apr 18

Azure plugins

- VM agent - https://aka.ms/azjenkinsagents
- VMSS - https://aka.ms/azjenkinsvmss
- Container agent - https://aka.ms/azcontaineragent
- AKS - https://aka.ms/azjenkinsacs
- App Service - https://aka.ms/azapp-service
- Storage – https://aka.ms/azjenkinsstore



Azure Container Registry (ACR) Build



Native Container Build Service in the cloud

Follows docker build semantics

```
docker build -t helloworld:v1 .
az acr build -t helloworld{{.Build.ID}} .
```

Trigger based builds (git commits, base image updates)

```
az acr build-task create
 --image        helloworld{{.Build.ID}}
 --name         myBuildTask
 --registry     jengademos
 --context      https://github.com/me/helloworld
 --branch       master
 --git-access-token $PAT
```

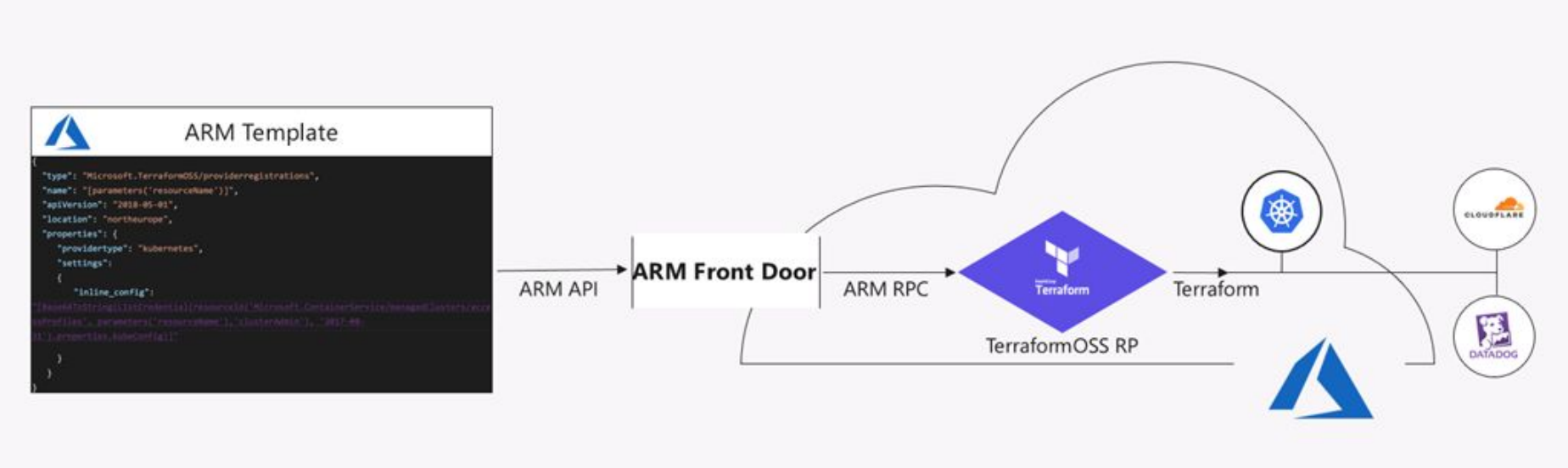
Persistent Service

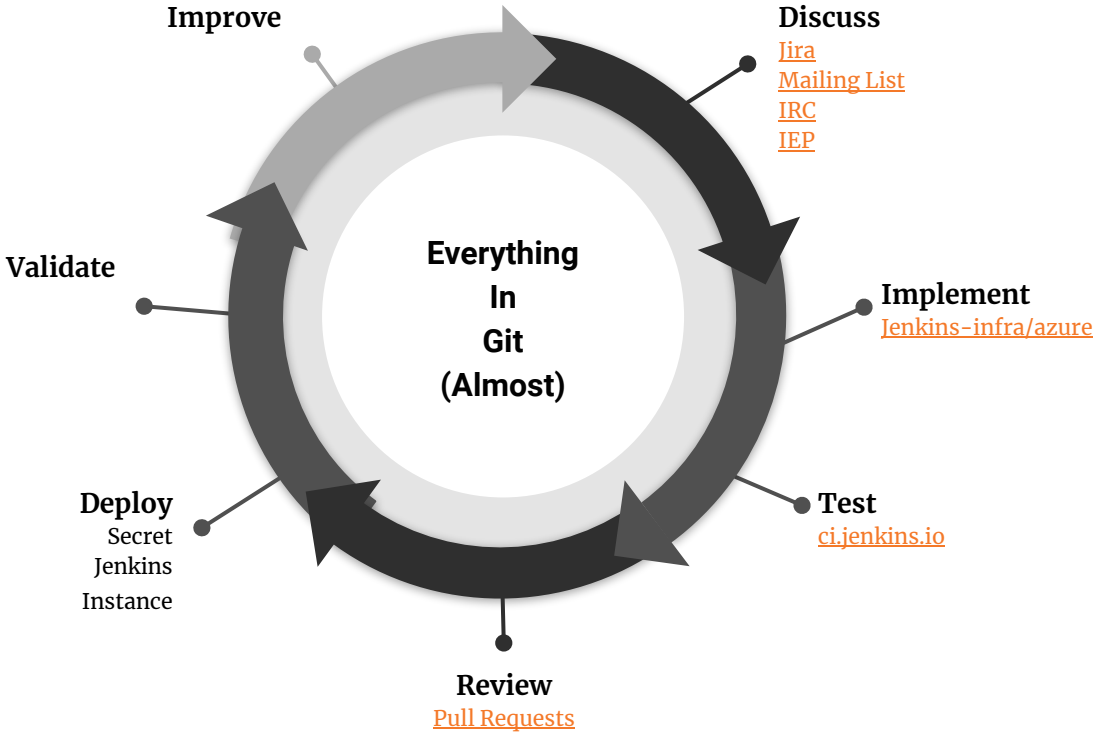
Full lifecycle control

HashiCorp Terraform

```
resource "azurerm_mysql_database" "confluence" {
  name                = "confluence"
  resource_group_name = "${azurerm_resource_group.confluence.name}"
  server_name         = "${azurerm_mysql_server.confluence.name}"
  charset             = "utf8"
  collation           = "utf8_bin"
}
```

Azure Resource Provider for Terraform





See for Yourself

How the migration is going?

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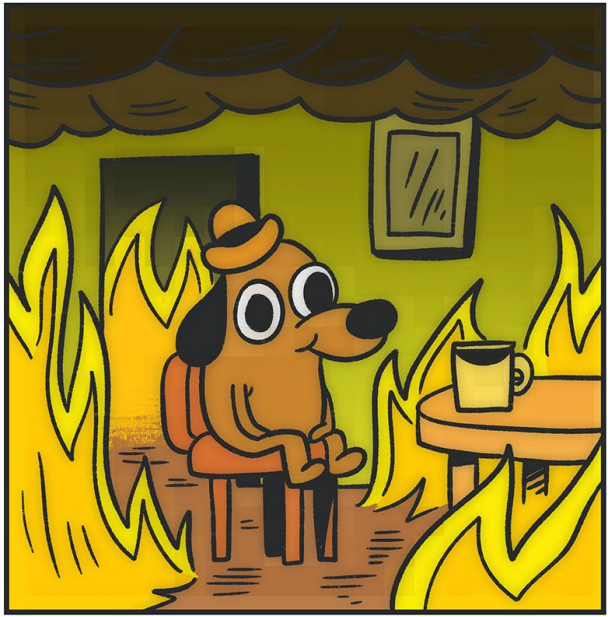

What our Kubernetes Journey looks like?

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Kubernetes As A Service

No Deep Kubernetes Understanding

```
//Pod.yaml

---

apiVersion: v1
kind: Pod
metadata:
  name: myapp-pod
  labels:
    app: myapp
spec:
  containers:
  - name: myapp-container
    image: busybox
    command: ['sh', '-c', 'echo Hello Kubernetes! && sleep 3600']
```

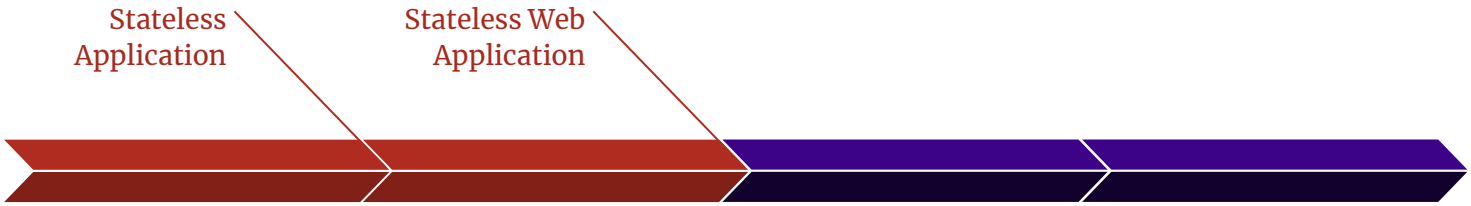
Kubernetes Journey: 101

Daemonset - ConfigMap
Deployment - Secret

Kubernetes is Awesome

Monitoring
Logging

Kubernetes Journey: Web Application



Daemonset - ConfigMap
Deployment - Secret

Kubernetes is Awesome

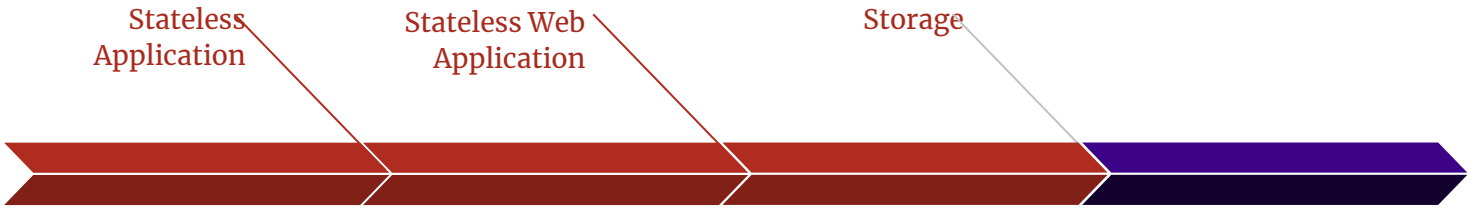
Ingress - Service
Ingress Controller

Who deleted that public ip?
Who cut that idle tcp connection?
How many iptable rules?

Monitoring
Logging

Plugins.jenkins.io

Kubernetes Journey: Storage



Daemonset - ConfigMap
Deployment - Secret

Kubernetes is Awesome

Ingress - Service

Who deleted that public ip?
Who cut that idle tcp connection?
How many iptable rules?

PersistentVolume
PersistentVolume Claim

Why is it so slow?
Where is my disk?

Monitoring
Logging

Plugins.jenkins.io

Accounts
Javadoc

Storage

Local/HostPath

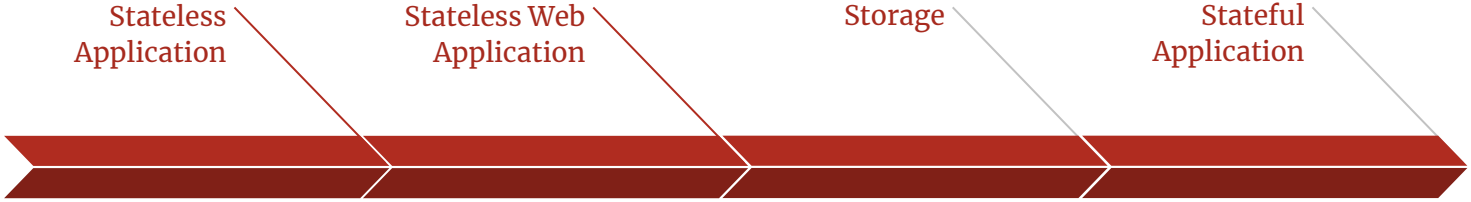
Azure Disk Storage

+	-
IO Performance Ext4 partition Owner/Group Permission	Slow Bind mounting No Read/Write many

Azure File Storage

+	-
READ/WRITE Many Reliability	IO Performance CIFS

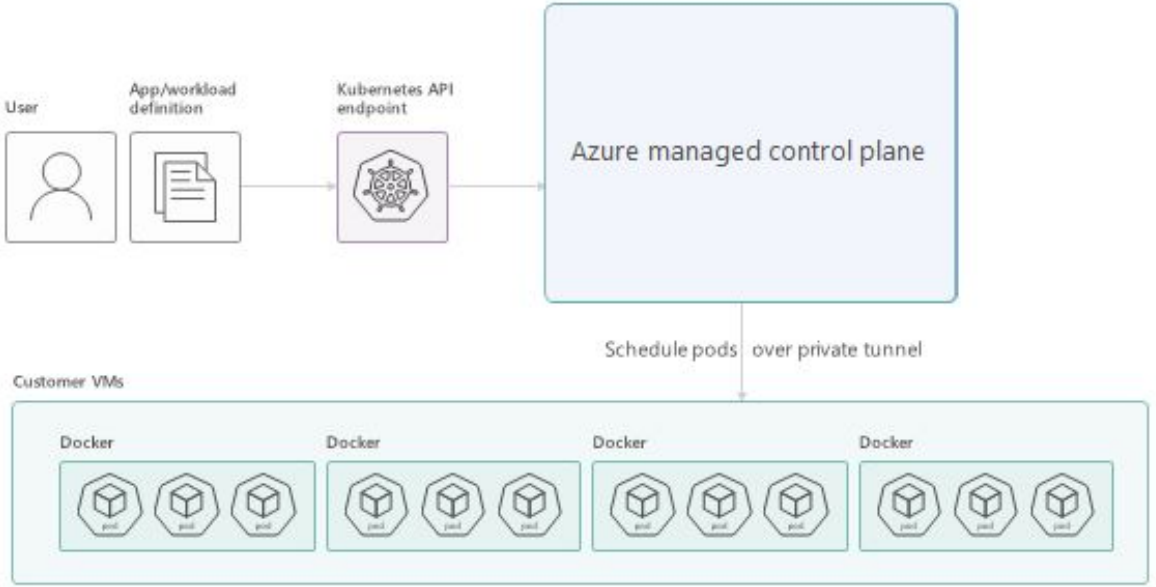
Kubernetes Journey



Daemonset - ConfigMap **Deployment - Secret**	**Ingress - Service**	**PersistentVolume** **PersistentVolume Claim**	**StatefulSet**
Kubernetes is Awesome	Who deleted that public ip? Who cut that idle tcp connection? How many iptable rules?	Why is it so slow? Where did my disk disappeared? Are those file really stored as root user with 777 permission?	What if the application is killed? Is there database migrations?
Monitoring Logging	Plugins.jenkins.io	Accounts Javadoc	Evergreen ldap

How Managed Kubernetes on Azure works

- Automated upgrades, patches
- High reliability and availability
- Easy and secure cluster scaling
- Self-healing
- API server monitoring
- Control plane at no charge



DevOps World

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Thanks

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