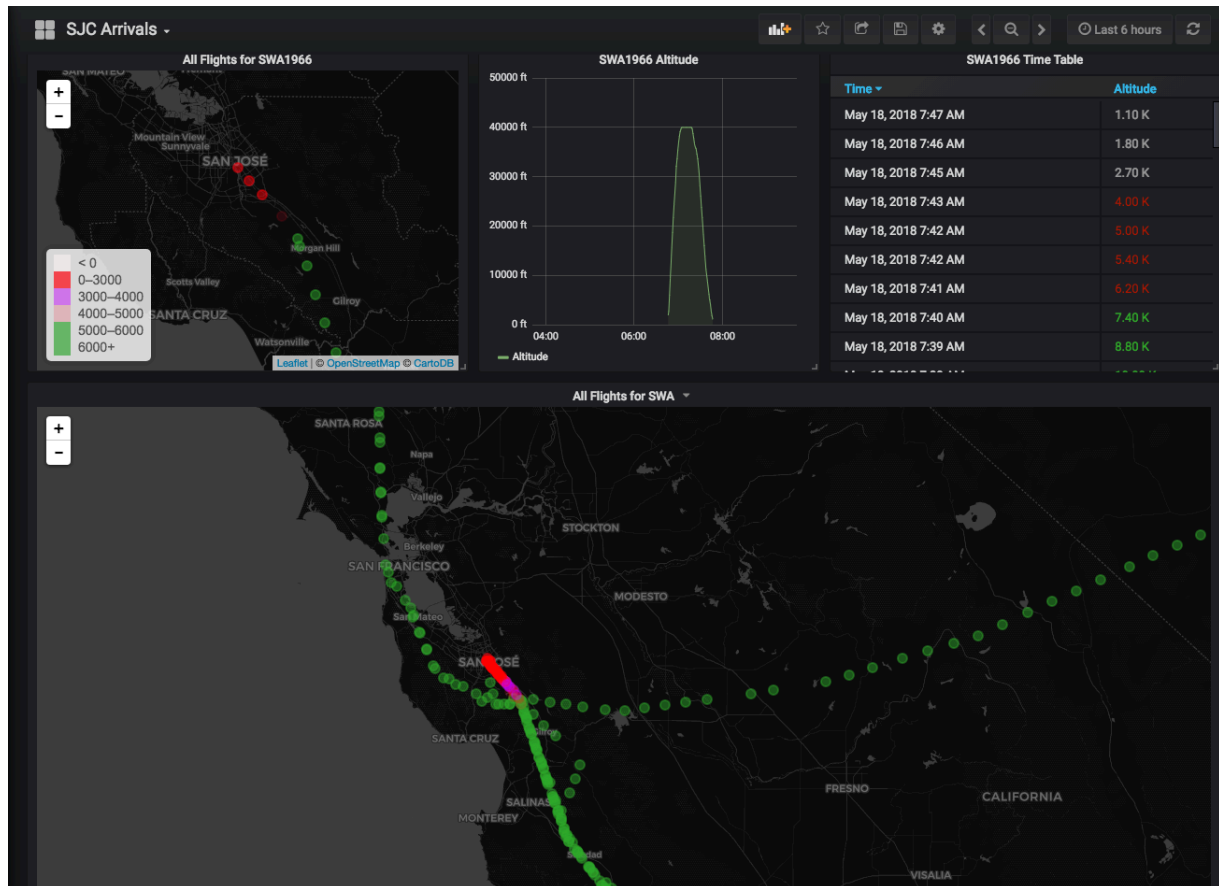


Instructions on setting up SJC arrival flights monitoring with Azure Kubernetes Service (AKS) and MapR Data Fabric



This demo provides the steps to setup a real-time monitoring system for San Jose Airport (SJC) arrival flights. It shows the flight tracks, flight numbers and altitudes of flights.

Step 1: Create a MapR Sandbox on Azure

Go to <https://tinyurl.com/y8q645xz>, fill out the form and record your resource group name and login name and password

Step 2: Create a AKS K8 cluster


Go to the Azure portal: <https://portal.azure.com>, select “Kubernetes Service”, then create a K8s cluster. The K8s cluster has to be in the same resource group as the MapR Sandbox in Step 1 above.


It is recommended to change the VM size to Standard D4s v3 for better performance, click 'Next Networking' when done.


You can enable HTTP application routing and choose between two networking options: "Basic" or "Advanced".


- **"Basic"** networking creates a new VNet for your cluster using default values.
- **"Advanced"** networking allows clusters to use a new or existing VNet with customizable addresses. Application pods are connected directly to the VNet, which allows for native integration with VNet features.

[Learn more about networking in Azure Kubernetes Service](#)


HTTP application routing  ☒ No ☐ Yes


Network configuration  ☐ Basic ☒ Advanced

* Virtual network 


MapRSandboxVnet 


[Create new](#)


* Subnet 


MapRSandboxSubnet 


[Create new](#)


* Kubernetes service address range 

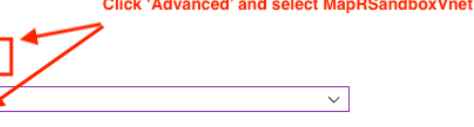
10.1.0.0/24  ✓

* Kubernetes DNS service IP address 

10.1.0.10  ✓

* Docker Bridge address 

172.17.0.1/16  ✓



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BASICS

Subscription	[REDACTED]
Resource group	jsunaks0508
Kubernetes cluster name	jsunaks0510
Region	East US
Kubernetes version	1.9.6
DNS name prefix	jsunaks0510
Node count	3
Node size	Standard_D4s_v3

NETWORKING

HTTP application routing	No
Network configuration	Advanced
Virtual network	MapRSandboxVnet
Subnet	MapRSandboxSubnet
Kubernetes service address range	10.1.0.0/24
Kubernetes DNS service IP address	10.1.0.10
Docker Bridge address	172.17.0.1/16

MONITORING

Enable container monitoring	Yes
Log Analytics workspace	DefaultWorkspace-[REDACTED]

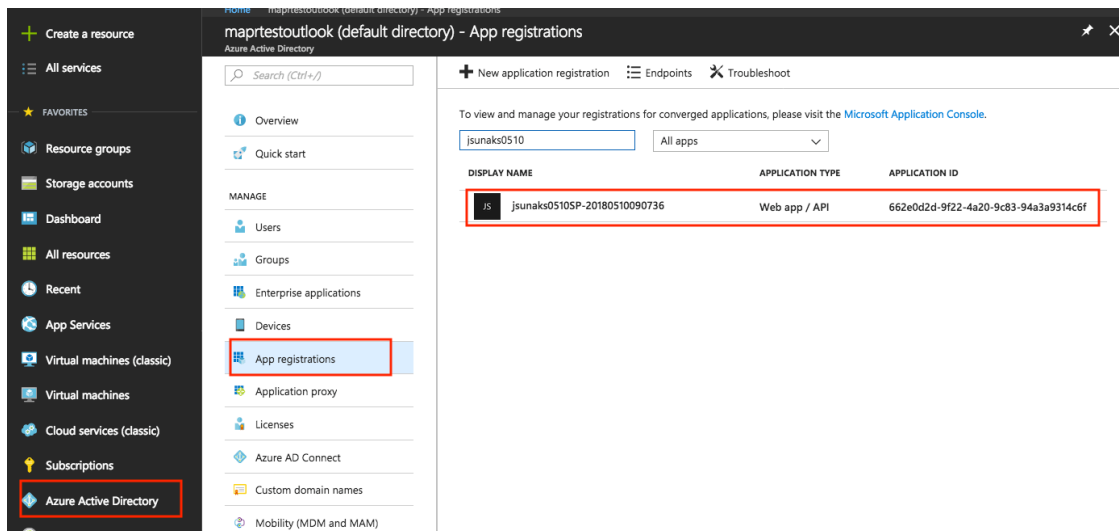
Create

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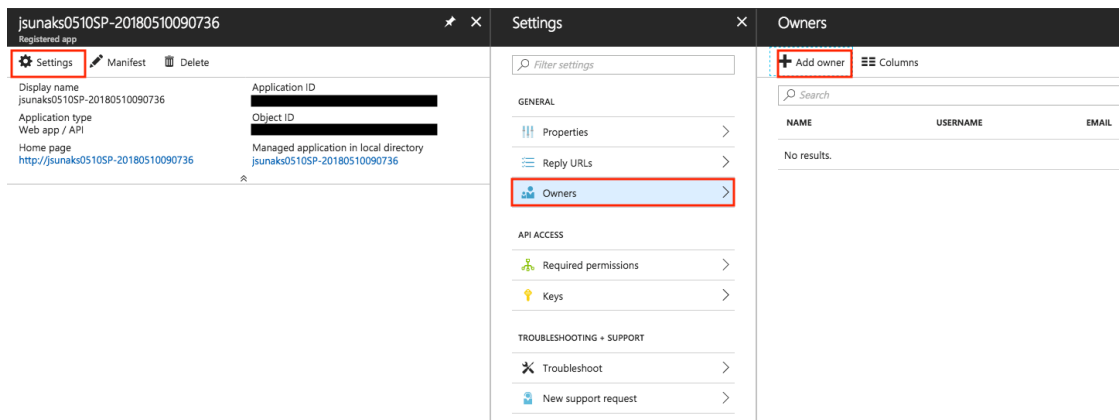
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Step 3: Change AKS service principal role and owner so it can create load balancer in the VNET

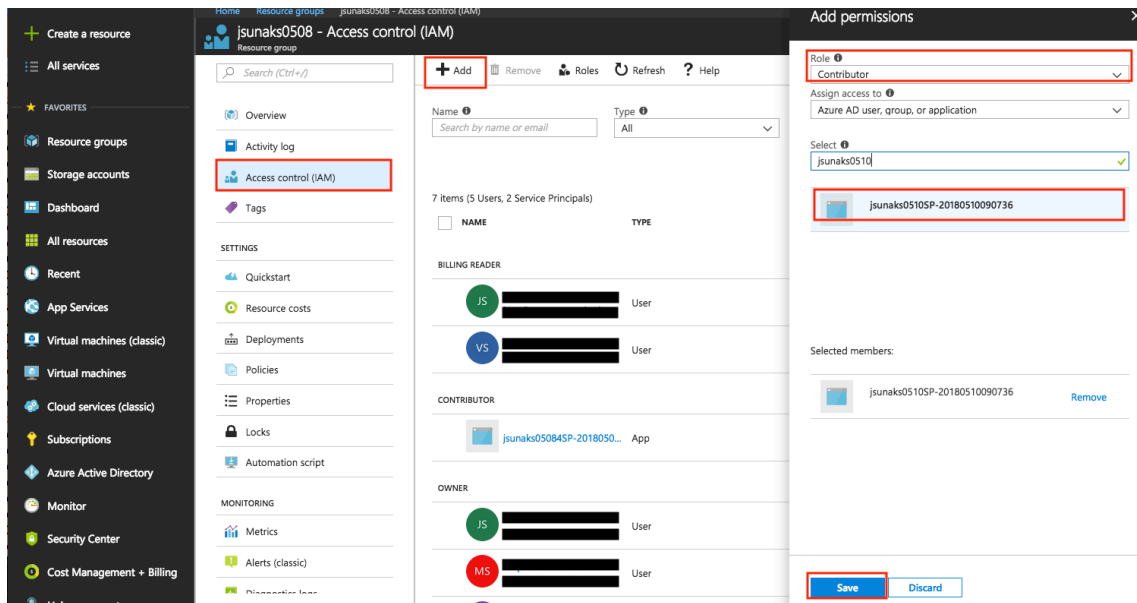
Find the service principal name created by AKS by going to 'Azure Active Directory' -> 'App registrations' and search for the SP name, typically it has a form like this: <resource group name>SP-<number string>, e.g. jsunaks0510SP-20180510090736.



Select the service principal, click on 'Settings' -> 'Owners' -> 'Add owner', then search for your login name and add



Now we need to assign a 'contributor' role to the service principal by going to the resource group created in Step 1, click on 'Access control (IAM)' -> 'Add' -> 'Role' -> 'Contributor' -> add the service principal name -> 'Save'



Step 4: Install Azure Cli Tool

login to Sandbox using the username and password as recorded in Step 1, sudo to become root

```
curl -L https://raw.githubusercontent.com/maprpartners/SJC/master/config-azcli | bash
```

Follow the instructions to login to your Azure account

use "az account set" if you have multiple subscriptions,

use "az aks list" to find out K8s cluster name from Step 2 if you forgot

Step 5: Configure K8s client on MapR Sandbox

In the MapR Sandbox as root:

```
git clone https://github.com/maprpartners/SJC.git
```

```
cd SJC
```

```
configure K8s
```

```
bash config-k8s
```

"kubectl get node -o wide" to verify it is working

Step 6: Install MapR Data Fabric for K8s volume plugin

```
bash inst_mapr_plugin
```

kubectl get pod --all-namespaces to verify, you should see mapr-kdfplugin-xxx
daemon set running on each K8s slave

Step 7: Deploy the SJC flight monitoring demo

bash run

When completed, the script will provide a URL for you to look at the Demo
d an award-winning filesystem all at your disposal.