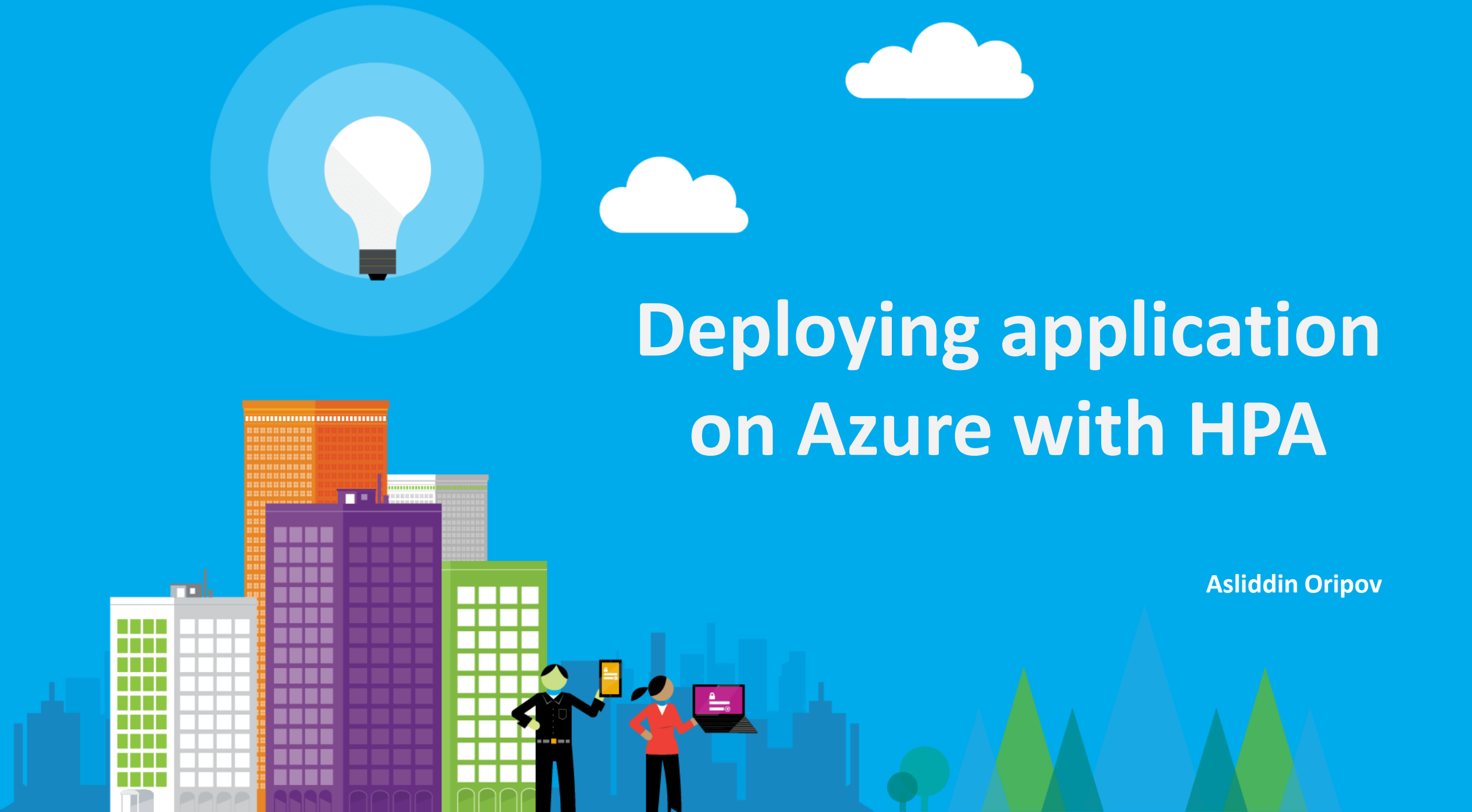
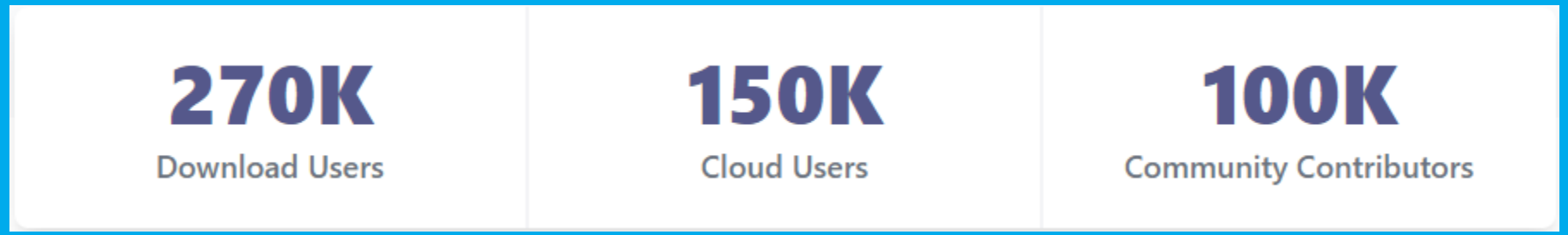


Deploying application on Azure with HPA

Asliddin Oripov

Akaunting

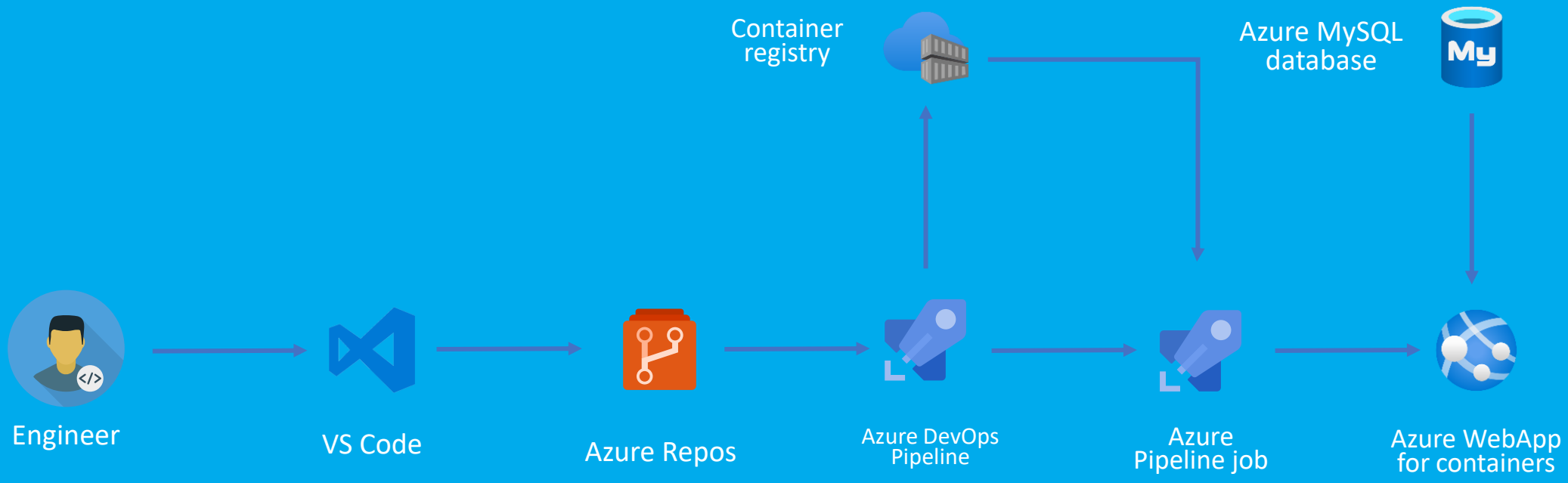
Akaunting is a free, open-source, and online accounting software for small businesses and freelancers



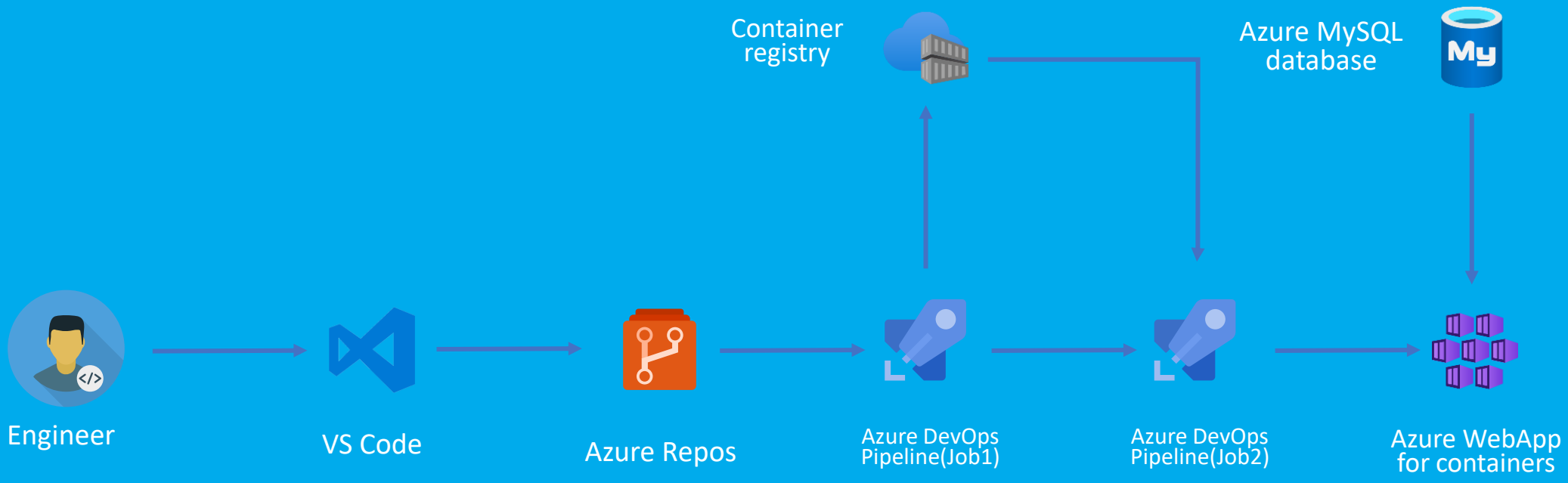
Dockerfile

```
FROM webdevops/php-nginx:7.4-alpine          # alpine image

RUN apk add oniguruma-dev libxml2-dev
RUN docker-php-ext-install \                 # php docker extensions
        bcmath \
        ctype \
        fileinfo \
        json \
        mbstring \
        pdo_mysql \
        tokenizer \
        xml

COPY --from=composer:latest /usr/bin/composer /usr/bin/composer # copy files from compose image

ENV WEB_DOCUMENT_ROOT /app
ENV APP_ENV production
WORKDIR /app
COPY . .

RUN composer install --no-plugins --no-scripts --no-interaction --optimize-autoloader --no-dev
RUN php artisan config:cache
RUN php artisan route:cache
RUN php artisan view:cache
RUN chmod -R 777 storage && chmod -R 777 bootstrap/cache && chmod -R 777 public
```

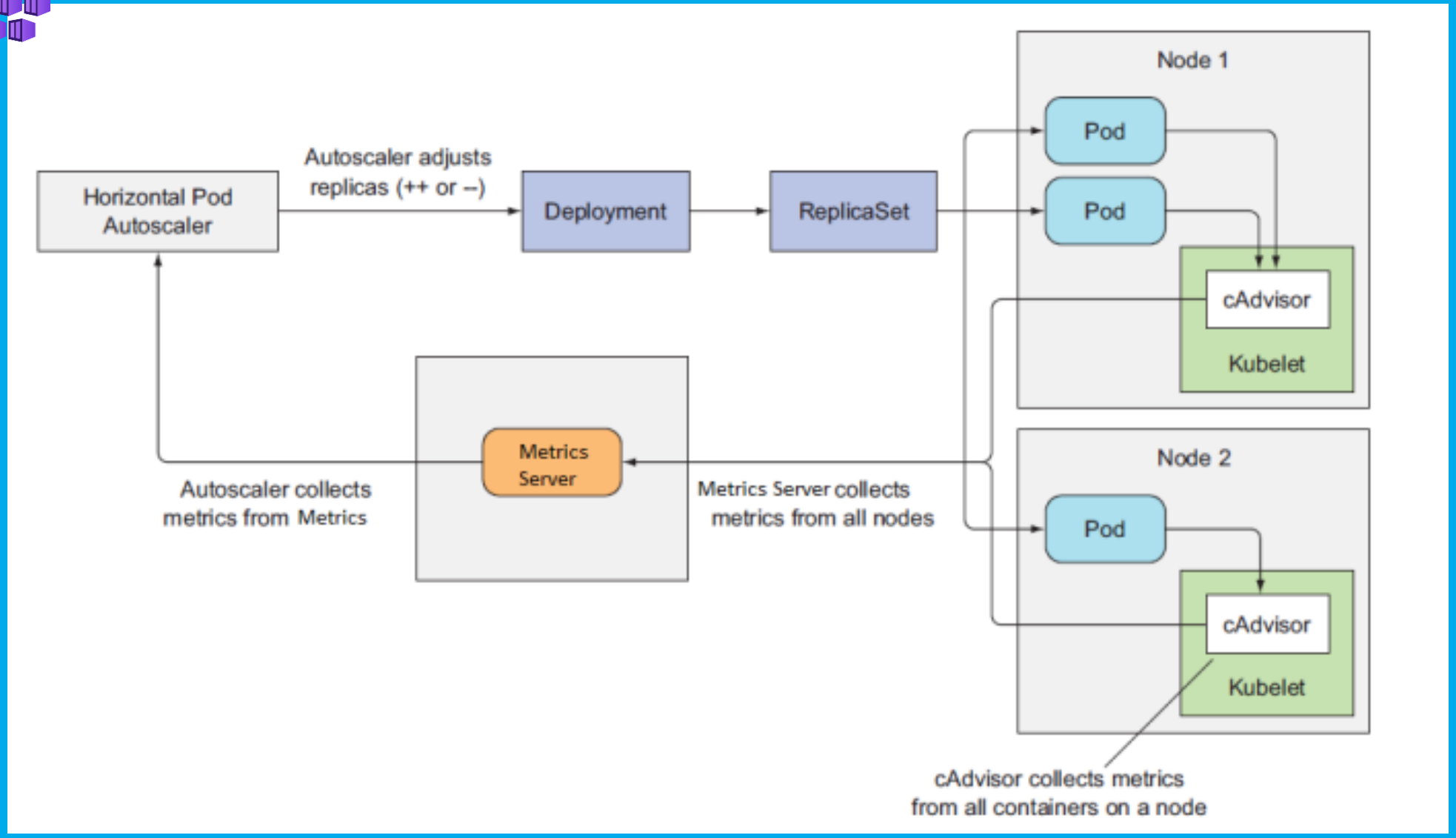
Concept 1 (Azure App service)



Concept 2 (Azure Kubernetes Service with Horizontal Pod Autoscaling)



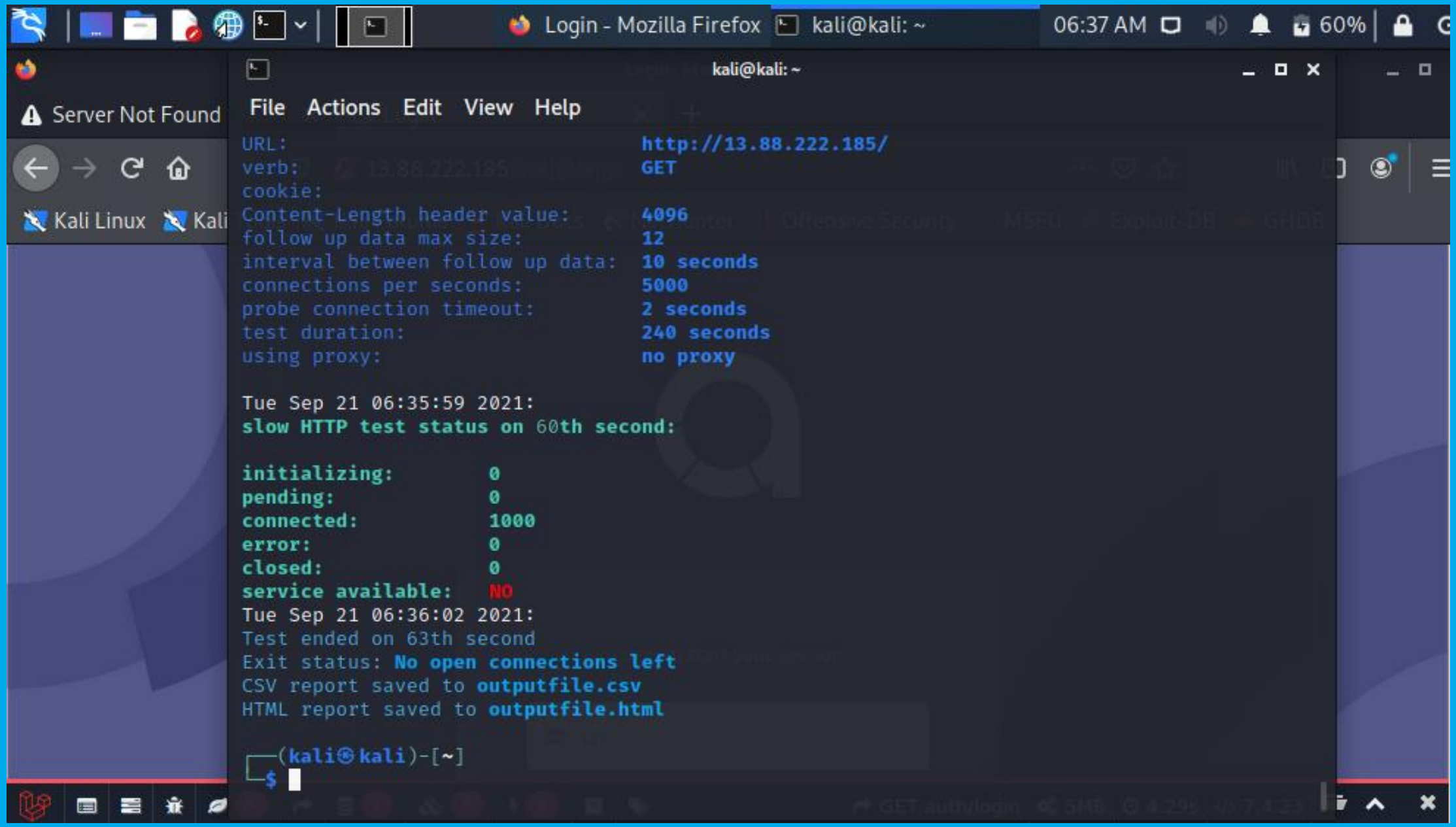
Horizontal Pod Autoscaling

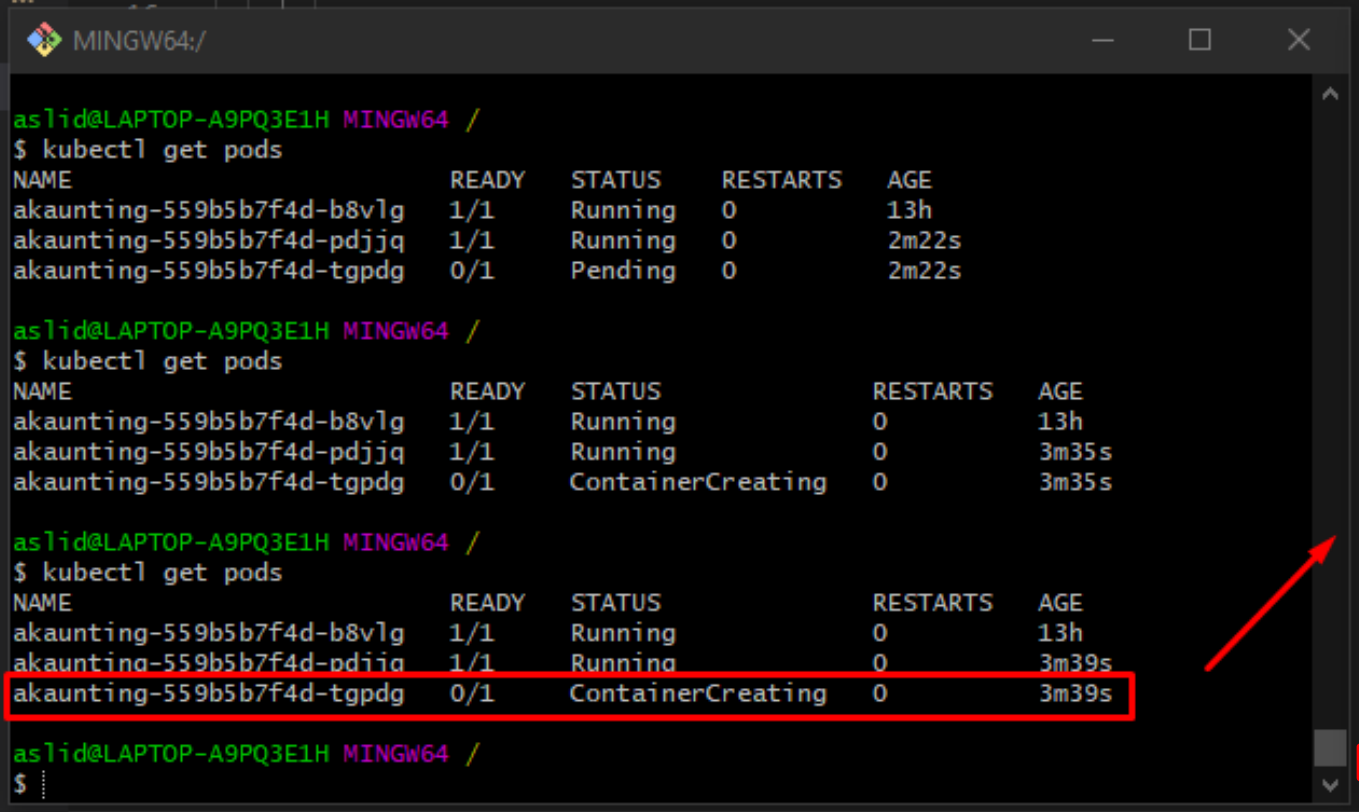


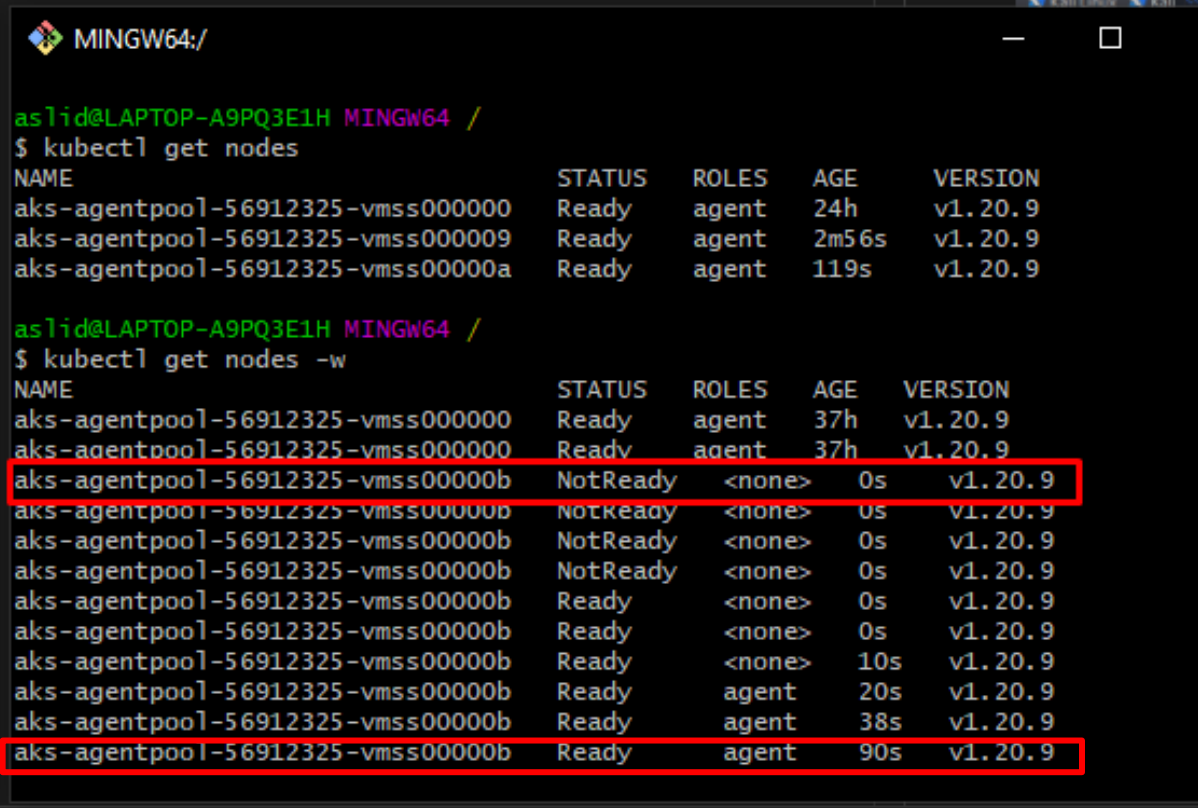
```yaml
#deployment.yml
apiVersion : apps/v1
kind: Deployment
metadata:
  name: akaunting
spec:
  replicas: 1
  selector:
    matchLabels:
      app: akaunting
  template:
    metadata:
      labels:
        app: akaunting
    spec:
      containers:
        - name: akaunting
          image: akaunting.azurecr.io/ak
aunting
          ports:
          - containerPort: 80
          resources:
            # limit is 500 milli core
            requests:
              cpu: 500m
            limits:
              cpu: 500m
```

```yaml
#hpa.yml
apiVersion: autoscaling/v2beta2
kind: HorizontalPodAutoscaler
metadata:
  name: akaunting-hpa
  namespace: default
spec:
  scaleTargetRef:
    apiVersion: apps/v1
    kind: Deployment
    name: akaunting
  maxReplicas: 10
  minReplicas: 1
  metrics:
    # configuration for resource
    - type: Resource
      resource:
        name: cpu
        target:
          type: Utilization
          # utilize after 5% cpu usage
          averageUtilization: 5
```

slowhttptest -c 1000 -H -g -o outputfile -i 10 -r 200 -t GET -u http://13.88.222.185 -p 2







PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
akaunting-hpa   Deployment/akaunting   0%/5%   1   50   2   4h36m
akaunting-hpa   Deployment/akaunting   0%/5%   1   50   2   4h36m
akaunting-hpa   Deployment/akaunting   0%/5%   1   50   1   4h37m
akaunting-hpa   Deployment/akaunting   0%/5%   1   50   1   4h45m
akaunting-hpa   Deployment/akaunting   0%/5%   1   50   1   4h47m
PS C:\Users\aslid\source\ExadelIntern\azure_devops\akaunting\manifests> kubectl get hpa -w
NAME            REFERENCE               TARGETS   MINPODS   MAXPODS   REPLICAS   AGE
akaunting-hpa   Deployment/akaunting   0%/5%     1         50        1          17h
akaunting-hpa   Deployment/akaunting   0%/5%     1         50        1          17h
akaunting-hpa   Deployment/akaunting   13%/5%    1         50        1          17h
akaunting-hpa   Deployment/akaunting   13%/5%    1         50        3          17h
akaunting-hpa   Deployment/akaunting   0%/5%     1         50        3          17h
akaunting-hpa   Deployment/akaunting   0%/5%     1         50        3          17h
akaunting-hpa   Deployment/akaunting   0%/5%     1         50        3          17h
```

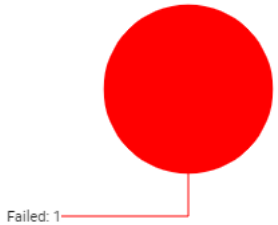
Monnitoring

kubernetes | default | Search

Workloads

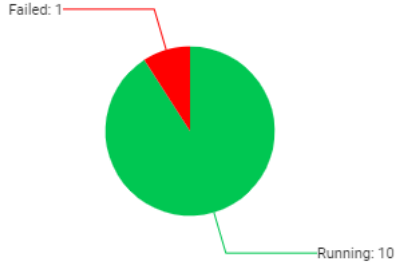
- Workloads
  - Cron Jobs
  - Daemon Sets
  - Deployments
  - Jobs
  - Pods
  - Replica Sets
  - Replication Controllers
  - Stateful Sets
- Service
  - Ingresses
  - Services
- Config and Storage
  - Config Maps
  - Persistent Volume Claims
  - Secrets
  - Storage Classes
- Cluster
  - Cluster Role Bindings
  - Cluster Roles
  - Namespaces
  - Network Policies

Workload Status



Deployments

Pods



Replica Sets

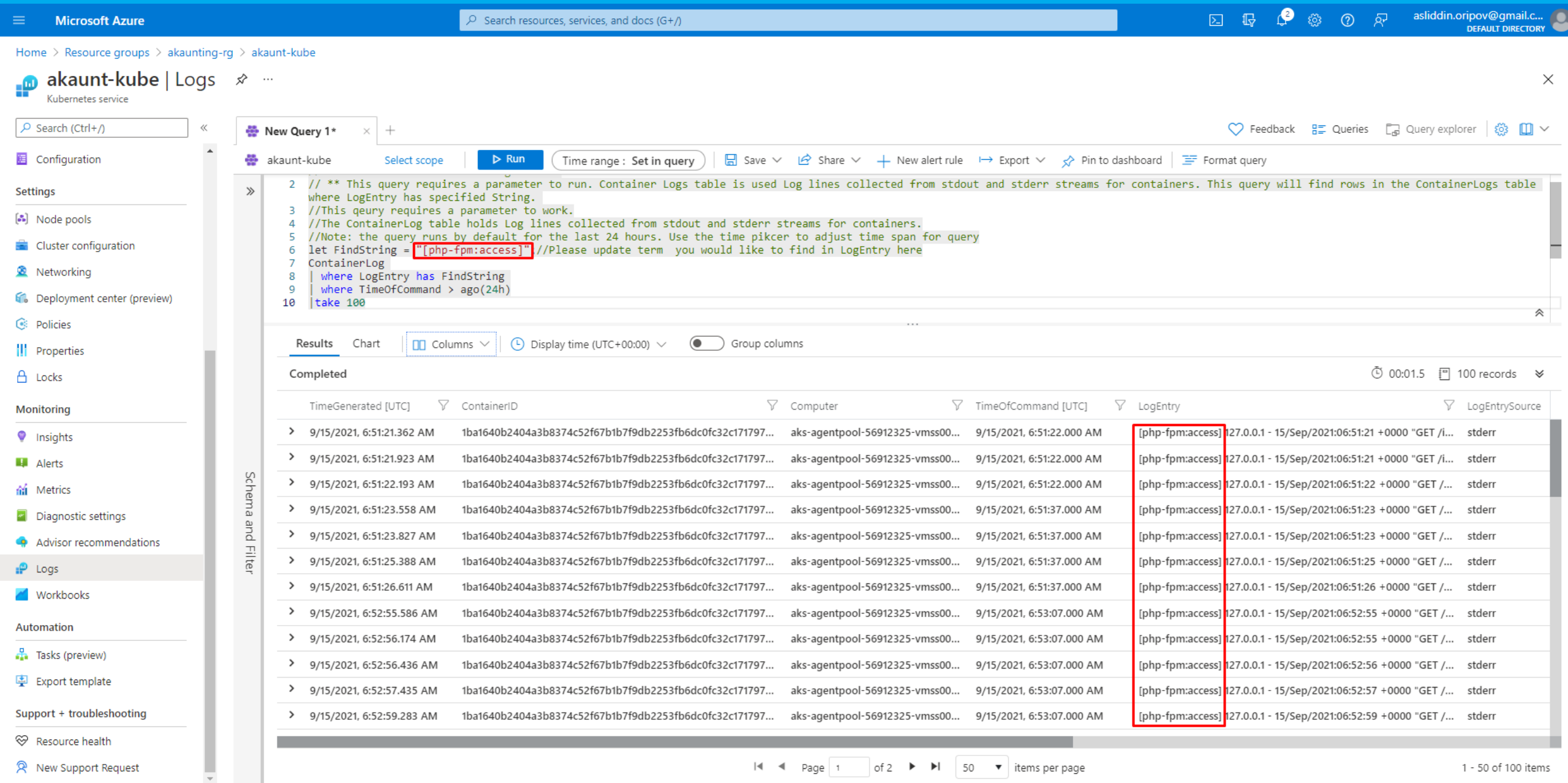
Deployments

Name	Namespace	Images	Labels	Pods	Created
akaunting	default	akaunting.azurecr.io/akaunting:165	-	4 / 10	a day ago

Pods

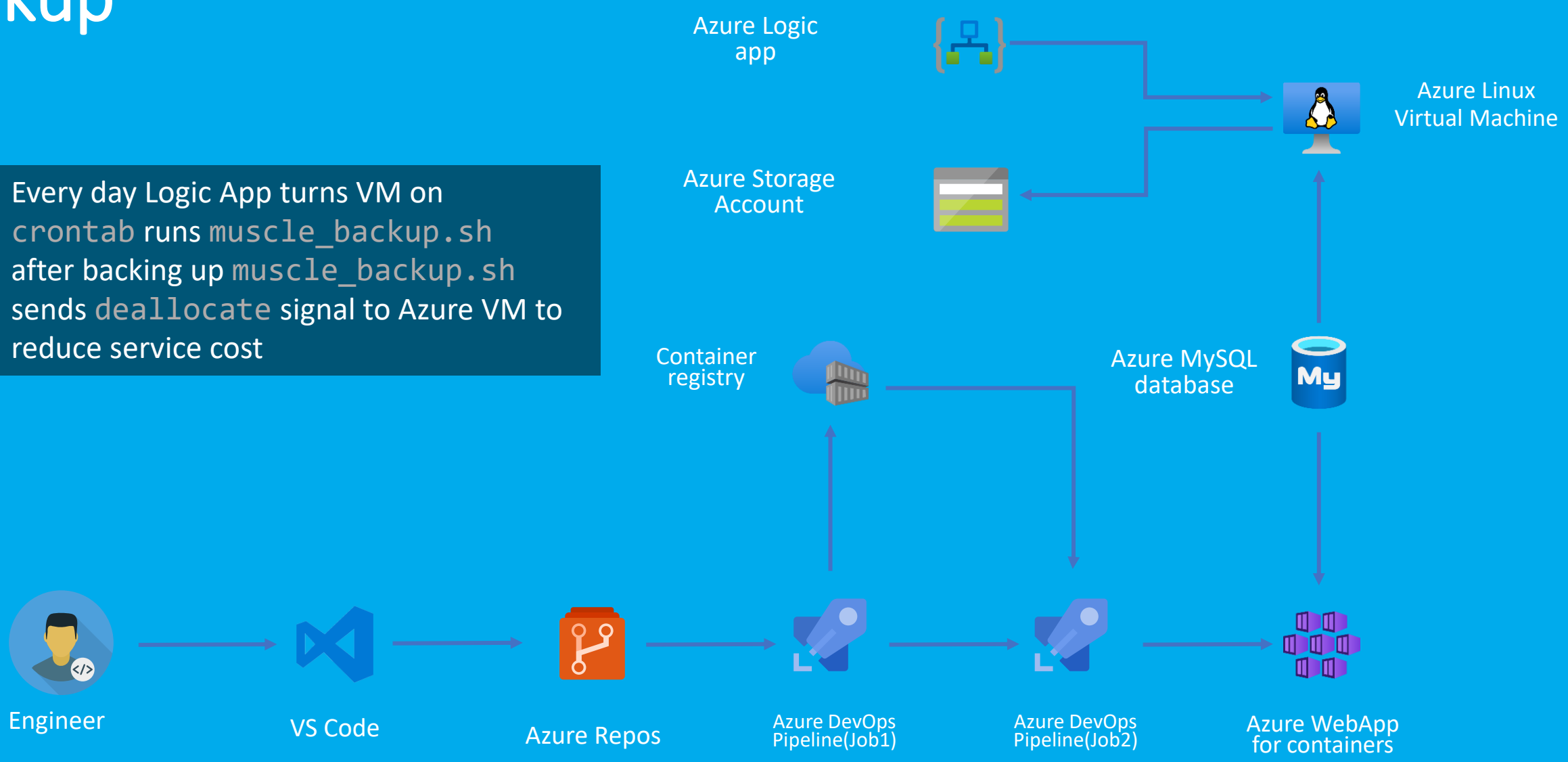
Name	Namespace	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
akaunting-f9867d8f9-8v9vs	default	akaunting.azurecr.io/akaunting:165	app: akaunting pod-template-hash: f9867d8f9		Pending	0	-	-	10 seconds ago
akaunting-f9867d8f9-xxmjl	default	akaunting.azurecr.io/akaunting:165	app: akaunting		Pending	0	-	-	10 seconds ago

Logging

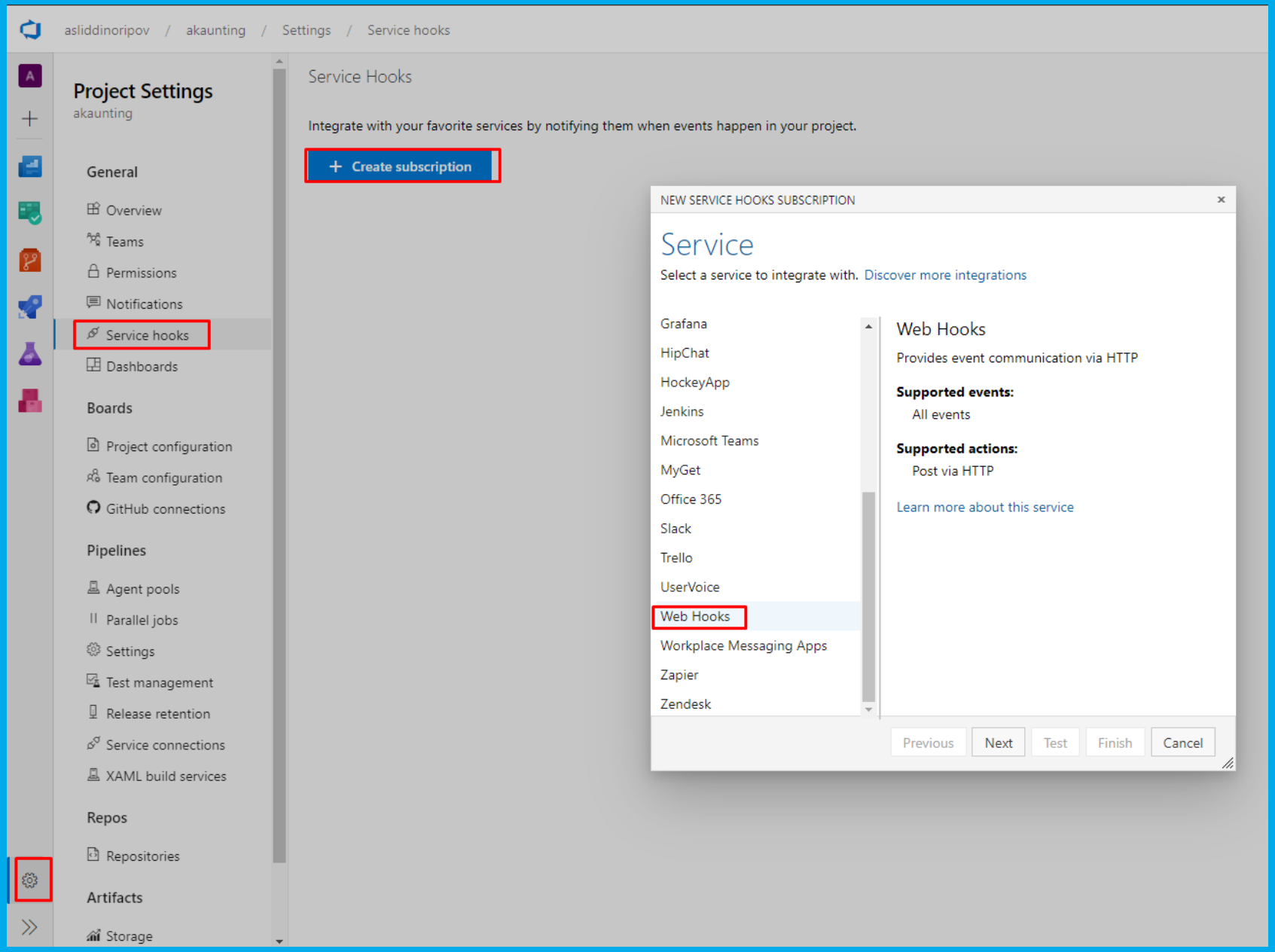

Microsoft Azure
Search resources, services, and docs (G+/)
asliddin.oripov@gmail.c...
DEFAULT DIRECTORY
Home > Resource groups > akaunting-rg > akaunt-kube
akaunt-kube | Logs
Kubernetes service
Search (Ctrl+/)
Configuration
Settings
Node pools
Cluster configuration
Networking
Deployment center (preview)
Policies
Properties
Locks
Monitoring
Insights
Alerts
Metrics
Diagnostic settings
Advisor recommendations
Logs
Workbooks
Automation
Tasks (preview)
Export template
Support + troubleshooting
Resource health
New Support Request
New Query 1*
Feedback
Queries
Query explorer
akaunt-kube
Select scope
Run
Time range : Set in query
Save
Share
New alert rule
Export
Pin to dashboard
Format query
2 // ** This query requires a parameter to run. Container Logs table is used Log lines collected from stdout and stderr streams for containers. This query will find rows in the ContainerLogs table where LogEntry has specified String.
3 //This qeury requires a parameter to work.
4 //The ContainerLog table holds Log lines collected from stdout and stderr streams for containers.
5 //Note: the query runs by default for the last 24 hours. Use the time pikcer to adjust time span for query
6 let FindString = "[php-fpm:access]" //Please update term you would like to find in LogEntry here
7 ContainerLog
8 | where LogEntry has FindString
9 | where TimeOfCommand > ago(24h)
10 |take 100
Schema and Filter
Results
Chart
Columns
Display time (UTC+00:00)
Group columns
Completed
00:01.5
100 records
TimeGenerated [UTC] | ContainerID | Computer | TimeOfCommand [UTC] | LogEntry | LogEntrySource
9/15/2021, 6:51:21.362 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:51:22.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:51:21 +0000 "GET /i... | stderr
9/15/2021, 6:51:21.923 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:51:22.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:51:21 +0000 "GET /i... | stderr
9/15/2021, 6:51:22.193 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:51:22.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:51:22 +0000 "GET /... | stderr
9/15/2021, 6:51:23.558 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:51:37.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:51:23 +0000 "GET /... | stderr
9/15/2021, 6:51:23.827 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:51:37.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:51:23 +0000 "GET /... | stderr
9/15/2021, 6:51:25.388 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:51:37.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:51:25 +0000 "GET /... | stderr
9/15/2021, 6:51:26.611 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:51:37.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:51:26 +0000 "GET /... | stderr
9/15/2021, 6:52:55.586 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:53:07.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:52:55 +0000 "GET /... | stderr
9/15/2021, 6:52:56.174 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:53:07.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:52:55 +0000 "GET /... | stderr
9/15/2021, 6:52:56.436 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:53:07.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:52:56 +0000 "GET /... | stderr
9/15/2021, 6:52:57.435 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:53:07.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:52:57 +0000 "GET /... | stderr
9/15/2021, 6:52:59.283 AM | 1ba1640b2404a3b8374c52f67b1b7f9db2253fb6dc0fc32c171797... | aks-agentpool-56912325-vmss00... | 9/15/2021, 6:53:07.000 AM | [php-fpm:access] 127.0.0.1 - 15/Sep/2021:06:52:59 +0000 "GET /... | stderr
Page 1 of 2
50 items per page
1 - 50 of 100 items

Bakup

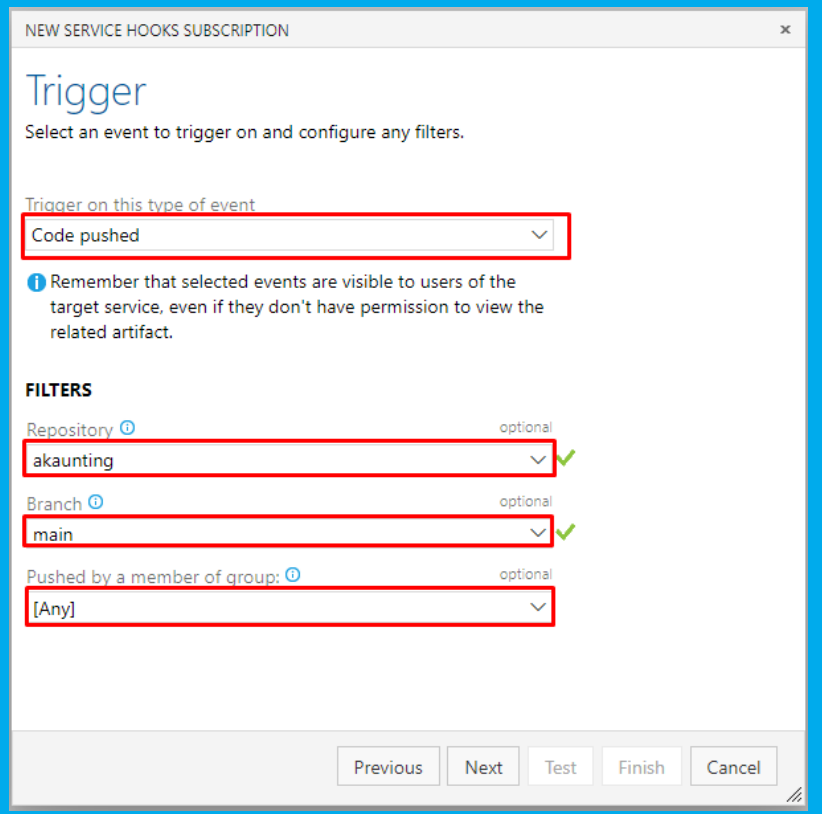
1. Every day Logic App turns VM on
2. `crontab` runs `muscle_backup.sh`
3. after backing up `muscle_backup.sh` sends `deallocate` signal to Azure VM to reduce service cost



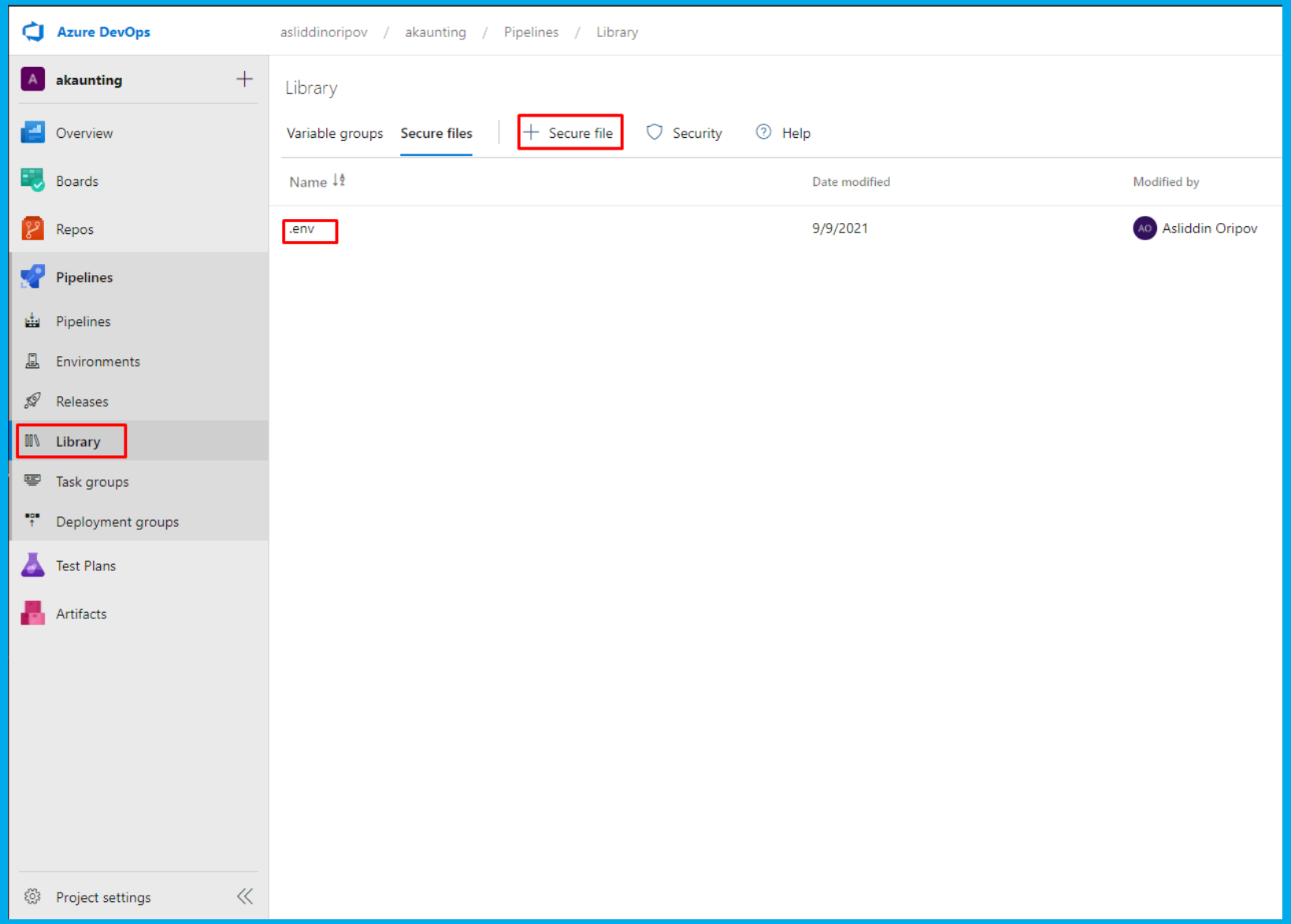
Webhook


asliddinoripov / akaunting / Settings / Service hooks
Project Settings
akaunting
General
Overview
Teams
Permissions
Notifications
Service hooks
Dashboards
Boards
Project configuration
Team configuration
GitHub connections
Pipelines
Agent pools
Parallel jobs
Settings
Test management
Release retention
Service connections
XAML build services
Repos
Repositories
Artifacts
Storage
Service Hooks
Integrate with your favorite services by notifying them when events happen in your project.
+ Create subscription

NEW SERVICE HOOKS SUBSCRIPTION
Service
Select a service to integrate with. Discover more integrations
Grafana
HipChat
HockeyApp
Jenkins
Microsoft Teams
MyGet
Office 365
Slack
Trello
UserVoice
Web Hooks
Workplace Messaging Apps
Zapier
Zendesk
Web Hooks
Provides event communication via HTTP
Supported events:
All events
Supported actions:
Post via HTTP
Learn more about this service
Previous
Next
Test
Finish
Cancel


NEW SERVICE HOOKS SUBSCRIPTION
Trigger
Select an event to trigger on and configure any filters.
Trigger on this type of event
Code pushed
Remember that selected events are visible to users of the target service, even if they don't have permission to view the related artifact.
FILTERS
Repository
optional
akaunting
Branch
optional
main
Pushed by a member of group:
optional
[Any]
Previous
Next
Test
Finish
Cancel

Security




```yaml
#download secure file
- task: DownloadSecureFile@1
  name: env_files
  inputs:
    secureFile: '.env'

#copy secure file into deployment
- script: |
    cp $(env_files.secureFilePath) .
    ls -l -a
```

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https://github.com/gitlantis