



# AZKM

your knowledge mining chaperone



# **:WHAT DOES AZKM DO?**

- 1. manage multiple km environments using terraform**
- 2. automated skillset and k8s application deployment using template engine over terraform state**
- 3. dataset download for km environments**
- 4. leveraging a configurable catalog**

# :INSTALL ON ANY AZURE SHELL

```
luke@Azure:~$ curl https://raw.githubusercontent.com/frogrammer/azure-knowledgemining-cli/main/cloudshell-install.sh | bash
```

1. goto [shell.azure.com](https://shell.azure.com)
2. run this!

```
curl https://raw.githubusercontent.com/frogrammer/azure-knowledgemining-cli/main/cloudshell-install.sh | bash
```

# :INSTALL IN LINUX ENVIRONMENT

```
moss@DESKTOP-VS1EB71:~$ pip install azkm
```

## pip install azkm

pre-requisites:

python > 3.7

kubectl

terraform

nodejs > 0.1.15 or a nodejs virtual environment

az cli

cdktf [OPTIONAL to generate azure provider CDK]

# :CREATE YOUR FIRST KM APP

```
(azkm) luke@Azure:~$ azkm recipe imagenet mojito uksouth
```

`azkm recipe imagenet [instance name] [region]`

deploys: baseline infrastructure

imagenet skillsets to cognitive search

downloads random imagenet dataset to azure storage





provisions faceted search application to aks

provides url for faceted search



# :CREATE YOUR FIRST KM APP

```
(azkm) luke@Azure:~$ azkm recipe imagenet mojito uksouth
```

 pincoladaaks932985	Kubernetes service	West US
 pincoladacogsvcs932985	Cognitive Services	West US
 pincoladasearch932985	Search service	West US
 pincoladastorage932985	Storage account	West US

Home > Resource groups > pincoladarg932985 > pincoladaaks932985

## pincoladaaks932985 | Services and ingresses

Kubernetes service

Search (Ctrl+/) « + Add Delete Refresh Show labels

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Security

Kubernetes resources

Services Ingresses

Filter by ingress name

Enter the full ingress name

Filter by namespace

All namespaces

<input checked="" type="checkbox"/>	Name	Namespace	Class	Hosts	Address	Ports	Age
<input checked="" type="checkbox"/>	imagenet	default	addon-http-application...	imagenet.1b75c7bb258e48	104.45.229.7	80	8 hours

← → ↺ 🏠 ⚠ Not secure | imagenet.1b75c7bb258e48a08244.westus.aksapp.io/Home/Search?q=\*

Microsoft

Search Customize Upload Files

Available Results: 2089

View Entity Map

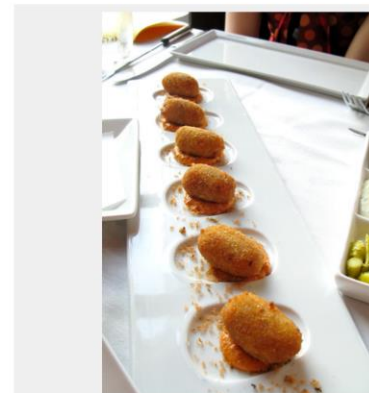
Tag

- ☐ outdoor (1114)
- ☐ food (917)
- ☐ mountain (900)
- ☐ nature (858)
- ☐ fast food (838)
- ☐ sky (687)
- ☐ dish (660)
- ☐ baked goods (602)
- ☐ plate (577)
- ☐ bread (530)

Brand

Gender

Landmark



2585072669\_a71d811544



28151237\_e3bc6cf01b



# :DOWNLOAD MORE DATA

```
(azkm) luke@Azure:~$ azkm dataset imagenet mojito --num_images 1234326
```

`azkm dataset [dataset_name] [instance] [variables]`

downloads data into a container relevant to the data

the container is configured as a datasource for an indexer

```
fetching 617 images from synset n02901377  
3/1234326      http://farm3.static.flickr.com/2055/2386228957_33d
```

# :INSTALL A NEW AKS APP

```
(azkm) luke@Azure:~$ azkm deploy app pyspark mojito --login_token pina_colada
```

`azkm deploy app [app_name] [instance] [variables]`

see intermediate guide for more details



# :INIT BASELINE ENVIRONMENT

```
(azkm) luke@Azure:~$ azkm init mojito westeurope
```

azkm init [instance] [region]

    deploys:    resource group

                azure storage

                file share for aks km applications

                aks cluster

                azure search service

                azure cognitive services account

# :DEPLOY RECIPE

```
(azkm) luke@Azure:~$ azkm recipe imagenet mojito uksouth
```

**azkm recipe [recipe name] [instance] [region]**

**deploys:**        **baseline infrastructure from init**  
                 **skillsets for the recipe**  
                 **downloads recipe relevant data**  
                 **deploys AKS apps relevant to the recipe**

# :MANAGE KM ENVIRONMENTS

```
(azkm) luke@Azure:~$ azkm environment list
```

azkm environment list

lists environments

```
(azkm) luke@Azure:~$ azkm environment list
-----
pinacolada
martini
realale
-----
```

# :MANAGE KM ENVIRONMENTS

```
(azkm) luke@Azure:~$ azkm environment show pinacolada
```

azkm environment show [instance]

prints terraform azurerm resource state for the environment

```
azurerm_storage_account/queue_properties/logging/read False
azurerm_storage_account/queue_properties/logging/retention_policy_days 0
azurerm_storage_account/queue_properties/logging/version 1.0
azurerm_storage_account/queue_properties/logging/write False
azurerm_storage_account/queue_properties/minute_metrics/enabled False
azurerm_storage_account/queue_properties/minute_metrics/include_apis False
azurerm_storage_account/queue_properties/minute_metrics/retention_policy_days 0
azurerm_storage_account/queue_properties/minute_metrics/version 1.0
azurerm_storage_account/resource_group_name pinacolada
azurerm_storage_account/secondary_access_key ofz6W
=
azurerm_storage_account/secondary_blob_connection_string
azurerm_storage_account/secondary_blob_endpoint
azurerm_storage_account/secondary_blob_host
azurerm_storage_account/secondary_connection_string Default
Ysw50RMfgXhRFjIVMSf1yH39kln/JJz5h/b5bAVtJImoQ0d3R6Un0APxYq3m8WPJw2Qh1fOPmiA==;EndpointSuffix=core.windows
azurerm_storage_account/secondary_dfs_endpoint
azurerm_storage_account/secondary_dfs_host
azurerm_storage_account/secondary_file_endpoint
azurerm_storage_account/secondary_file_host
azurerm_storage_account/secondary_location eastus
azurerm_storage_account/secondary_queue_endpoint
azurerm_storage_account/secondary_table_endpoint
azurerm_storage_account/secondary_table_host
azurerm_storage_account/secondary_web_endpoint
azurerm_storage_account/secondary_web_host
azurerm_storage_account/tags/azkmid pinacolada
azurerm_storage_account/timeouts
azurerm_storage_container/container_access_type private
azurerm_storage_container/has_immutability_policy False
azurerm_storage_container/has_legal_hold False
azurerm_storage_container/id https://
azurerm_storage_container/name image
azurerm_storage_container/resource_manager_id /subscriptions/
roviders/Microsoft.Storage/storageAccounts/pinacoladastorage932985/blobServices/default/containers/image
azurerm_storage_container/storage_account_name pinacolada
azurerm_storage_container/timeouts
azurerm_storage_share/id https
```

# :TEARDOWN ENVIRONMENT

```
(azkm) luke@Azure:~$ azkm destroy mojito
```

`azkm destroy [instance]`

when you have successfully mined the knowledge

```
Plan: 0 to add, 0 to change, 7 to destroy.
```

**Changes to Outputs:**

```
- pinacolada_aks_17EAB6DB           = "/subscriptions/5e86fc19-6874-4273-b1b8-c8877c
oladaaks932985" -> null
- pinacolada_cogsvcs_CDC87187       = "/subscriptions/5e86fc19-6874-4273-b1b8-c8877c
ogsvcs932985" -> null
- pinacolada_containerimagenet_ABF6565A = "https://pinacoladastorage932985.blob.core.wir
- pinacolada_rg_212FE80C           = "/subscriptions/5e86fc19-6874-4273-b1b8-c8877c
- pinacolada_search_850BBC61       = "/subscriptions/5e86fc19-6874-4273-b1b8-c8877c
932985" -> null
- pinacolada_sharekmapp_1C0D1B4E     = "https://pinacoladastorage932985.file.core.wir
- pinacolada_storage_FFA46004       = "/subscriptions/5e86fc19-6874-4273-b1b8-c8877c
age932985" -> null
```

**Do you really want to destroy all resources?**

Terraform will destroy all your managed infrastructure, as shown above.  
There is no undo. Only 'yes' will be accepted to confirm.

Enter a value:

# :GITHUB

cli:

[frogrammer/azure-knowledgemining-cli](#)

catalog:

[frogrammer/azkm-catalog](#)



# :ADD RESOURCES TO CATALOG

[TODO]

```
{
  "imagenet": {
    "datasource": "./imagenet/datasource.json",
    "index": "./imagenet/index.json",
    "indexer": "./imagenet/indexer.json",
    "skillset": "./imagenet/skills.json",
    "app_bin": "./imagenet/app.zip",
    "app_template": "./imagenet/app.yaml"
  },
  "pyspark": {
    "app_template": "./imagenet/app.yaml"
  }
}
```

```
{
  "Logging": {
    "IncludeScopes": false,
    "LogLevel": {
      "Default": "Warning"
    }
  },
  "SearchServiceName": "{{azurerms_search_service/name}}",
  "SearchApiKey": "{{azurerms_search_service/primary_key}}",
  "SearchIndexName": "imagenet",
  "SearchIndexerName": "imagenet",
  "StorageAccountName": "{{azurerms_storage_account/name}}",
  "StorageAccountKey": "{{azurerms_storage_account/primary_blob_connection_string}}",
  "StorageContainerAddress": "https://{{azurerms_storage_account/name}}.blob.core.windows.net/imagenet",
  "KeyField": "metadata_storage_path",
  "IsPathBase64Encoded": true,
  "InstrumentationKey": "",
  "StorageContainerAddress2": "",
  "StorageContainerAddress3": "",
  "AzureMapsSubscriptionKey": "",
  "GraphFacet": "tagname, gender, brands",
  "Customizable": "true",
  "OrganizationName": "Microsoft",
  "OrganizationLogo": "~/images/logo.png",
  "OrganizationWebSiteUrl": "https://www.microsoft.com"
}
```

# **:DEPLOY NEW AKS APPS**

**[TODO]**

# **:DEPLOY NEW COGNITIVE SKILLS**

**[TODO]**

# **:TERRAFORM CDK ENGINE**

**[TODO]**

# **:TF RESOURCE TEMPLATES**

**[TODO]**