

ProjectB

DevOps Using Azure tools

Author: Sourav Mazumdar

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Azure Storage account and Blob Storage Created using Terraform	Azure Storage and Terraform	Done	
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Azure Services

1. Azure Storage account and Blob Storage Created using Terraform

① README.md Vars.tf U main.tf U stac.tf X appservice.tf U

```

stac.tf
1   resource "azurerm_storage_account" "st1" {
2     name          = var.storageName
3     resource_group_name = azurerm_resource_group.rg1.name
4     location       = var.location
5     account_tier    = "Standard"
6     account_replication_type = "LRS"
7     allow_blob_public_access = true
8     account_kind     = "BlobStorage"
9   }
10
11  resource "azurerm_storage_container" "container1" {
12    name          = var.containerName
13    storage_account_name = azurerm_storage_account.st1.name
14    container_access_type = "blob"
15  }

```

[INNO1ZLP00010:devOpsProjectB souravmazumdar\$ terraform init

Initializing the backend...

Initializing provider plugins...

- Finding hashicorp/azurerm versions matching "2.83.0"...
- Installing hashicorp/azurerm v2.83.0...
- Installed hashicorp/azurerm v2.83.0 (signed by HashiCorp)

Terraform has created a lock file `.terraform.lock.hcl` to record the provider selections it made above. Include this file in your version control repository so that Terraform can guarantee to make the same selections by default when you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see any changes that are required for your infrastructure. All Terraform commands should now work.

If you ever set or change modules or backend configuration for Terraform, rerun this command to reinitialize your working directory. If you forget, other commands will detect it and remind you to do so if necessary.

INNO1ZLP00010:devOpsProjectB souravmazumdar\$]

[INNO1ZLP00010:devOpsProjectB souravmazumdar\$ terraform plan

```

+ allowed_origins    = (known after apply)
+ exposed_headers    = (known after apply)
+ max_age_in_seconds = (known after apply)
}

+ retention_policy {
  + days = (known after apply)
}

+ smb {
  + authentication_types      = (known after apply)
  + channel_encryption_type   = (known after apply)
  + kerberos_ticket_encryption_type = (known after apply)
  + versions                  = (known after apply)
}
}

# azurerm_storage_container.container1 will be created
+ resource "azurerm_storage_container" "container1" {
  + container_access_type    = "blob"
  + has_immutability_policy = (known after apply)
  + has_legal_hold           = (known after apply)
  + id                        = (known after apply)
  + metadata                  = (known after apply)
  + name                      = "cont1"
  + resource_manager_id       = (known after apply)
  + storage_account_name      = "staccount1"
}

Plan: 3 to add, 0 to change, 0 to destroy.

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions if you run "terraform apply" now.
INNO1ZLP00010:devOpsProjectB souravmazumdar$ ]

```

```

devOpsProjectB -- bash -- 116x37

# azurerm_storage_container.container1 will be created
+ resource "azurerm_storage_container" "container1" {
    + container_access_type  = "blob"
    + has_immutability_policy = (known after apply)
    + has_legal_hold          = (known after apply)
    + id                      = (known after apply)
    + metadata                = (known after apply)
    + name                    = "cont1"
    + resource_manager_id     = (known after apply)
    + storage_account_name    = "staccount1304"
}

Plan: 2 to add, 0 to change, 1 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

azurerm_storage_account.st1: Destroying... [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-rg/providers/Microsoft.Storage/storageAccounts/staccount1304]
azurerm_storage_account.st1: Still destroying... [id=/subscriptions/c5f029c7-a268-4433-95d4-....Storage/storageAccounts/staccount1304, 10s elapsed]
azurerm_storage_account.st1: Destruction complete after 11s
azurerm_storage_account.st1: Creating...
azurerm_storage_account.st1: Still creating... [10s elapsed]
azurerm_storage_account.st1: Still creating... [20s elapsed]
azurerm_storage_account.st1: Creation complete after 27s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-rg/providers/Microsoft.Storage/storageAccounts/staccount1304]
azurerm_storage_container.container1: Creating...
azurerm_storage_container.container1: Creation complete after 3s [id=https://staccount1304.blob.core.windows.net/container1]

Apply complete! Resources: 2 added, 0 changed, 1 destroyed.
INNO1ZLP00010:devOpsProjectB souravmazumdar$ 

```

The screenshot shows the Azure Storage Accounts blade. On the left, a sidebar lists storage accounts: dockerengine7342, newwininguestdiag, and staccount1304. The staccount1304 account is selected. The main pane displays the 'Containers' section for the staccount1304 storage account. It shows one container named 'cont1'. The container details are as follows:

Name	Last modified	Public access level	Lease state
cont1	11/17/2021, 3:32:56 PM	Blob	Available

Below the container list, there are sections for 'Data storage' (Containers), 'Security + networking' (Networking, Azure CDN, Access keys, Shared access signature), and navigation controls (Page 1 of 1).

2. Azure Appservice created using Terraform

```
❶ README.md      ❷ Vars.tf  U      ❸ main.tf  U      ❹ stac.tf  U      ❺ appservice.tf  U  ✘
❻ appservice.tf
1   resource "azurerm_app_service_plan" "asp1" {
2     name          = "serviceplan1"
3     location      = var.location
4     resource_group_name = azurerm_resource_group.rg1.name
5
6     sku {
7       tier = "Free"
8       size = "F1"
9     }
10    }
11
12   resource "azurerm_app_service" "app1" {
13     name          = var.appName
14     location      = var.location
15     resource_group_name = azurerm_resource_group.rg1.name
16     app_service_plan_id = azurerm_app_service_plan.asp1.id
17
18     site_config {
19       dotnet_framework_version = "v5.0"
20       scm_type                 = "LocalGit"
21     }
22   }
```

```
❶ devOpsProjectB -- bash -- 116x37
~ resource "azurerm_app_service_plan" "asp1" {
  id           = "/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-
rg/providers/Microsoft.Web/serverfarms/serviceplan1"
  name         = "serviceplan1"
  tags         = {}
# (9 unchanged attributes hidden)

~ sku {
  ~ size      = "F1" -> "S1"
  ~ tier      = "Free" -> "Standard"
  # (1 unchanged attribute hidden)
}
}

Plan: 1 to add, 1 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

azurerm_app_service_plan.asp1: Modifying... [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/p-
jectb-rg/providers/Microsoft.Web/serverfarms/serviceplan1]
azurerm_app_service_plan.asp1: Still modifying... [id=/subscriptions/c5f029c7-a268-4433-95d4-...Microsoft.Web/server-
farms/serviceplan1, 10s elapsed]
azurerm_app_service_plan.asp1: Modifications complete after 10s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4-
cd0/resourceGroups/projectb-rg/providers/Microsoft.Web/serverfarms/serviceplan1]
azurerm_app_service.asp1: Creating...
azurerm_app_service.asp1: Still creating... [10s elapsed]
azurerm_app_service.asp1: Still creating... [20s elapsed]
azurerm_app_service.asp1: Still creating... [30s elapsed]
azurerm_app_service.asp1: Creation complete after 39s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resour-
ceGroups/projectb-rg/providers/Microsoft.Web/sites/smprojB]

Apply complete! Resources: 1 added, 1 changed, 0 destroyed.
INNO1ZLP00010:devOpsProjectB souravmazumdar$
```

smprojB App Service

Resource group (change)
projectb-rg

Status
Running

Location
East US

Subscription (change)
myPAGSubscription1

Subscription ID
c5f029c7-a268-4433-95d4-12eb70cd4cd0

URL
<https://smprojb.azurewebsites.net>

App Service Plan
serviceplan1 (S1: 1)

FTP/deployment username
No FTP/deployment user set

FTP hostname
[ftp://waws-prod-blu-281.ftp.azurewebsites.windows.net/site/...](ftp://waws-prod-blu-281.ftp.azurewebsites.windows.net/site/)

FTPS hostname
[ftps://waws-prod-blu-281.ftp.azurewebsites.windows.net/site/...](ftps://waws-prod-blu-281.ftp.azurewebsites.windows.net/site/)

Tags (change)
Click here to add tags

Diagnose and solve problems
Our self-service diagnostic and troubleshooting experience helps you identify and resolve issues with your web app.

Application Insights
Application Insights helps you detect and diagnose quality issues in your apps, and helps you understand what your users actually do with it.

App Service Advisor
App Service Advisor provides insights for improving app experience on the App Service platform. Recommendations

3. Azure Container registry created using terraform

```

resource "azurerm_container_registry" "acr" {
  name          = var.acrName
  resource_group_name = var.rgroupName
  location      = var.location
  sku           = "Standard"
}

```

```

devOpsProjectB --bash -- 116x37

+ georeplication_locations      = (known after apply)
+ georeplications                = (known after apply)
+ id                             = (known after apply)
+ location                      = "eastus"
+ login_server                  = (known after apply)
+ name                           = "myconreg1304"
+ network_rule_set               = (known after apply)
+ public_network_access_enabled = true
+ resource_group_name            = "projectb-rg"
+ retention_policy                = (known after apply)
+ sku                            = "Standard"
+ trust_policy                   = (known after apply)
+ zone_redundancy_enabled        = false

+ identity {
    + identity_ids = (known after apply)
    + principal_id = (known after apply)
    + tenant_id   = (known after apply)
    + type         = (known after apply)
  }
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

azurerm_container_registry.acr: Creating...
azurerm_container_registry.acr: Still creating... [10s elapsed]
azurerm_container_registry.acr: Creation complete after 18s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-rg/providers/Microsoft.ContainerRegistry/registries/myconreg1304]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
INNOIZLP00010:devOpsProjectB souravmazumdar$ 

```

4. Azure SQL created using Terraform

File navigation bar: README.md, Vars.tf, main.tf, stac.tf, appservice.tf, acr.tf, mssql.tf (highlighted).

```

mssql.tf
1 resource "azurerm_mssql_server" "mssql1" {
2   name          = var.sqlserverName
3   resource_group_name = var.rgroupName
4   location       = var.location
5   version        = "12.0"
6   administrator_login    = var.sqlAdminUser
7   administrator_login_password = var.sqlAdminPass
8 }
9
10 resource "azurerm_mssql_database" "db1" {
11   name      = var.dbName
12   server_id = azurerm_mssql_server.mssql1.id
13 }

```

Terminal window output:

```

devOpsProjectB -- bash -- 116x37
/databases/smsqldb13, 10s elapsed]
azurerm_mssql_database.example: Destruction complete after 19s
azurerm_mssql_server.mssql1: Destroying... [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-rg/providers/Microsoft.Sql/servers/exampmle-sqlserver]
azurerm_mssql_server.mssql1: Still destroying... [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-rg/providers/Microsoft.Sql/servers/exampmle-sqlserver, 10s elapsed]
azurerm_mssql_server.mssql1: Destruction complete after 16s
azurerm_mssql_server.mssql1: Creating...
azurerm_mssql_server.mssql1: Still creating... [10s elapsed]
azurerm_mssql_server.mssql1: Still creating... [20s elapsed]
azurerm_mssql_server.mssql1: Still creating... [30s elapsed]
azurerm_mssql_server.mssql1: Still creating... [40s elapsed]
azurerm_mssql_server.mssql1: Still creating... [50s elapsed]
azurerm_mssql_server.mssql1: Still creating... [1m0s elapsed]
azurerm_mssql_server.mssql1: Still creating... [1m10s elapsed]
azurerm_mssql_server.mssql1: Still creating... [1m20s elapsed]
azurerm_mssql_server.mssql1: Still creating... [1m30s elapsed]
azurerm_mssql_server.mssql1: Still creating... [1m40s elapsed]
azurerm_mssql_server.mssql1: Still creating... [1m50s elapsed]
azurerm_mssql_server.mssql1: Still creating... [2m0s elapsed]
azurerm_mssql_server.mssql1: Still creating... [2m10s elapsed]
azurerm_mssql_server.mssql1: Creation complete after 2m18s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-rg/providers/Microsoft.Sql/servers/smsqsqlserv13]
azurerm_mssql_database.db1: Creating...

azurerm_mssql_database.db1: Still creating... [10s elapsed]
azurerm_mssql_database.db1: Still creating... [20s elapsed]
azurerm_mssql_database.db1: Still creating... [30s elapsed]
azurerm_mssql_database.db1: Still creating... [40s elapsed]
azurerm_mssql_database.db1: Still creating... [50s elapsed]
azurerm_mssql_database.db1: Still creating... [1m0s elapsed]
azurerm_mssql_database.db1: Creation complete after 1m1s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4cd0/resourceGroups/projectb-rg/providers/Microsoft.Sql/servers/smsqsqlserv13/databases/smsqldb13]

Apply complete! Resources: 2 added, 0 changed, 2 destroyed.
INNO1ZLP00010:devOpsProjectB souravmazumdar$
INNO1ZLP00010:devOpsProjectB souravmazumdar$ 

```

Home >

Azure SQL ...

Default Directory

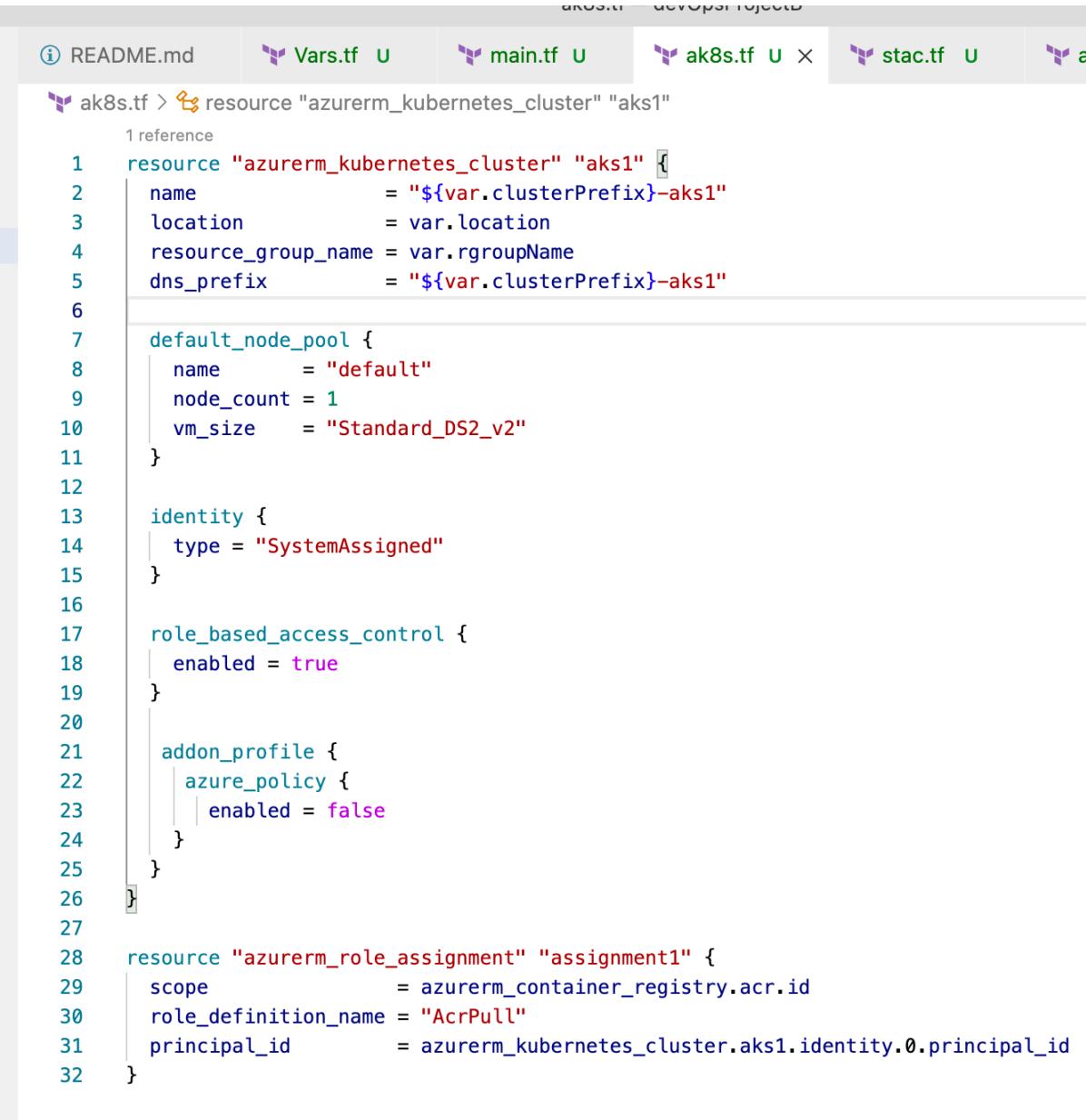
+ Create Reservations Manage view Refresh Export to CSV Open query | Assign tags Delete | Feedback

Filter for any field... Subscription == myPAYGSubscription1 Resource group == all Location == all Add filter

Showing 1 to 2 of 2 records.

Name ↑↓	Resource... ↑↓	Service tier ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/> smsqlDb13 (smsqlserv13/smsqlDb13)	SQL database	General Purpose: Ge...	projectb-rg	East US	myPAYGSubscription1
<input type="checkbox"/> smsqlserv13	SQL server	--	projectb-rg	East US	myPAYGSubscription1

5. Azure Kubernetes Cluster Created using Terraform



```

ak8s.tf  devops\projects\

① README.md      Vars.tf  U      main.tf  U      ak8s.tf  U  X      stac.tf  U      a
` ak8s.tf > 📁 resource "azurerm_kubernetes_cluster" "aks1"
  1 reference
  1   resource "azurerm_kubernetes_cluster" "aks1" {
  2     name          = "${var.clusterPrefix}-aks1"
  3     location      = var.location
  4     resource_group_name = var.rgroupName
  5     dns_prefix    = "${var.clusterPrefix}-aks1"
  6
  7     default_node_pool {
  8       name        = "default"
  9       node_count = 1
 10      vm_size     = "Standard_DS2_v2"
 11    }
 12
 13    identity {
 14      type = "SystemAssigned"
 15    }
 16
 17    role_based_access_control {
 18      enabled = true
 19    }
 20
 21    addon_profile {
 22      azure_policy {
 23        enabled = false
 24      }
 25    }
 26  }
 27
 28  resource "azurerm_role_assignment" "assignment1" {
 29    scope          = azurerm_container_registry.acr.id
 30    role_definition_name = "AcrPull"
 31    principal_id    = azurerm_kubernetes_cluster.aks1.identity.0.principal_id
 32  }

```

```

azurerm_kubernetes_cluster.aks1: Still creating... [11m50s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [12m0s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [12m10s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [12m20s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [12m30s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [12m40s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [12m50s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [13m0s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [13m10s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [13m20s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [13m30s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [13m40s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [13m50s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [14m0s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [14m10s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [14m20s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [14m30s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [14m40s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [14m50s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [15m0s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [15m10s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [15m20s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [15m30s elapsed]
azurerm_kubernetes_cluster.aks1: Still creating... [15m40s elapsed]
azurerm_kubernetes_cluster.aks1: Creation complete after 15m55s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd4
cd0/resourceGroups/projectb-rg/providers/Microsoft.ContainerService/managedClusters/sm-aks1]
azurerm_role_assignment.assignment1: Creating...
azurerm_role_assignment.assignment1: Still creating... [10s elapsed]
azurerm_role_assignment.assignment1: Still creating... [20s elapsed]
azurerm_role_assignment.assignment1: Still creating... [30s elapsed]
azurerm_role_assignment.assignment1: Creation complete after 30s [id=/subscriptions/c5f029c7-a268-4433-95d4-12eb70cd
4cd0/resourceGroups/projectb-rg/providers/Microsoft.ContainerService/managedClusters/sm-aks1/providers/Microsoft.Au
thorization/roleAssignments/1lee9bc0-4522-d26b-1c77-8764cb98d2d5]

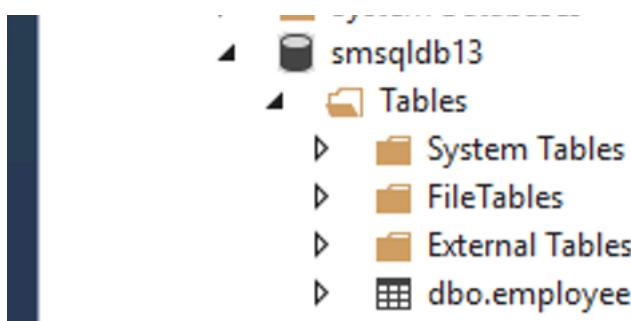
Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
INNO1ZLP00010:devOpsProjectB souravmazumdar$ 

```

The screenshot shows the Azure portal interface for managing a Kubernetes service named 'sm-aks1'. The main view displays the service's properties, including its status (Succeeded), location (East US), and network settings (API server address: sm-aks1-1d0eb9a1.hcp.eastus.azmk8s.io, Network type: Kubenet). The 'Properties' tab is selected. On the left, there is a navigation menu for 'Kubernetes services' and a search bar. The bottom of the screen shows standard Azure navigation buttons like back, forward, and search.

Database Services

1. Azure SQL with Data ready



```

CREATE TABLE employee
(
    id BIGINT IDENTITY(1, 1) PRIMARY KEY,
    firstname VARCHAR (20) DEFAULT NULL,
    lastname VARCHAR (25) NOT NULL,
    email VARCHAR (100) NOT NULL,
    phonenumer VARCHAR (20) DEFAULT NULL
);

INSERT INTO employee
VALUES
    ('PAPARAO', 'trainer', 'trainer1@gmail.com', '555-666-7777'),
    ('Prakash', 'HRHead', 'hhead1@gmail.com', '222-666-7777'),
    ('Senthil', 'HRExecutive', 'hrexcutive@gmail.com', '333-555-7777');

SELECT *
FROM employee;

```

Query executed successfully at... | smsqlserv13.database.windows.net | dbadmin (117) | smsqlserv13 | 00:00:00 | 3 rows

Azure Devops Pipeline

1. azure Devops project to maintain Static Website and Code Repository

About this project

This is the case study 2 of CFS learning journey

Project stats

Last 7 days

Repos	Commits
0 Pull requests opened	3 Commits by 2 authors

Members 1

2. To Azure repo push the code downloaded from given code link

The screenshot shows the Azure DevOps interface. On the left, the navigation bar includes 'Overview', 'Boards', 'Repos', 'Files', 'Commits', 'Pushes', 'Branches', 'Tags', 'Pull requests', 'Pipelines', 'Test Plans', and 'Artifacts'. The 'Files' tab is selected. In the center, the 'devOpsProjectB' repository is displayed. The 'README.md' file is open, showing its content. A message at the top right says 'You updated buildPlAppService Just now'. Below the message, there's a 'Create a pull request' button. The 'Contents' tab is selected, showing the file structure: README.md, DOE2, .vs, bin, Controllers, Models, obj, Properties, dockerignore, appsettings.Developm..., appsettings.json, CFS-AzureSQL.csproj, CFS-AzureSQL.csproj..., CFS-AzureSQL.sln, Dockerfile, Program.cs, and Startup.cs.

3. Build the code and check

The screenshot shows Visual Studio. On the left, the 'appsettings.json' file is open, displaying configuration settings. On the right, the 'Solution Explorer' shows the 'CFS-AzureSQL' project with files like Connected Services, Dependencies, Properties, Controllers, Models, appsettings.json, Dockerfile, Program.cs, and Startup.cs. At the bottom, the 'Output' window shows the build log:

```
1>-- Build started: Project: CFS-AzureSQL, Configuration: Debug Any CPU -----
1>CFS-AzureSQL -> C:\Users\vmadmin\source\repos\devOpsProjectB\DOE2\bin\Debug\net5.0\CFS-AzureSQL.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
```

4. Build required K8s YAMLs and test on Kubecluster Test Environment

```
pod/demoadapp-5dcfbbd878-q5jw5 1/1 Running 0 2m
NAME          TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)      AGE
service/demoapp LoadBalancer 10.0.13.189 <pending>    80:30791/TCP 10s
service/kubernetes ClusterIP  10.0.0.1    <none>       443/TCP     100m
deployment.apps/demoadapp 1/1 1 1 2m
replicaset.apps/demoadapp-5dcfbbd878 1 1 1 2m
PS C:\Users\vmadmin> kubectl get all
NAME          READY   STATUS    RESTARTS   AGE
pod/demoadapp-5dcfbbd878-q5jw5 1/1  Running 0 2m16s
service/demoapp LoadBalancer 10.0.13.189 20.120.51.185 80:30791/TCP 26s
service/kubernetes ClusterIP  10.0.0.1    <none>       443/TCP     101m
deployment.apps/demoadapp 1/1 1 1 2m16s
replicaset.apps/demoadapp-5dcfbbd878 1 1 1 2m16s
PS C:\Users\vmadmin> ^C
```

5. Create a build pipeline to create and push the application image to ACR

The screenshot shows the Azure DevOps Pipelines interface for creating a new pipeline named "BuildPipeline". The pipeline tasks include "Get sources" (using devOpsProjectB and buildPIAppService), "Agent job 1" (using mypool1 pool), "Use NuGet 5.11.0", "NuGet restore", "Build solution ***.sln", "dotnet publish", "buildAndPush", "Copy Terraform Fil...", and "Publish Artifact".

Bottom Left: Home > Container registries > myconreg1304 >

Bottom Right: msrepo | Repository

6. In same pipeline Push the Docker images to ACR and Terraformfiles,Webapp Zip to drop folder

The screenshot shows the Azure DevOps Pipelines interface displaying the execution log for a completed pipeline run (BuildPipeline #20211121.3). The log details the steps taken by "Agent job 1", including queuing, starting, and executing various tasks like "Initialize job", "Checkout devOpsProj...", "Use NuGet 5.11.0", "NuGet restore", "Build solution ***.sln", "dotnet publish", "buildAndPush", "Copy Terraform Files...", "Publish Artifact", "Post-job: Checkout d...", "Finalize Job", and "Report build status".

Name	Size
drop	3 MB
DOE2.zip	3 MB
Terraform	2 KB
appservice.tf	503 B
main.tf	394 B
Vars.tf	972 B

7. Create a release pipeline to apply Terraform script for creating Required azure services and deploy Zip to Appservice

releaseAppService

Stage 1

- Agent job
- Azure PowerShell script: To get storage account ...
- Replace tokens in terraform main
- Install Terraform 1.0.10
- Terraform : Init
- Terraform : plan
- Terraform : apply-auto approve
- Azure App Service Deploy

Logs

Deployment process

Agent job

Pool: mypool1 · Agent: win-agent1

Task	Result	Time
Initialize job	succeeded	1s
Download artifact - _BuildPipeline - drop	succeeded	6s
Azure PowerShell script: To get storage account key	succeeded 1 warning	16s
Replace tokens in terraform main	succeeded 1 warning	<1s
Install Terraform 1.0.10	succeeded 1 warning	<1s
Terraform : Init	succeeded 1 warning	6s
Terraform : plan	succeeded 1 warning	18s
Terraform : apply-auto approve	succeeded 1 warning	1m 29s
Azure App Service Deploy	succeeded	59s
Finalize Job	succeeded	<1s

The screenshot shows the Swagger UI interface for the CFS_AzureSQL API. At the top, it says "Select a definition" and "CFS_AzureSQL v1". Below that, it shows the "Employee" endpoint with a GET method and the URL "/api/Employee". The "Parameters" section indicates "No parameters". There are "Execute" and "Clear" buttons. The "Responses" section contains a "Curl" command and a "Request URL".

```
Curl
curl -X GET "https://projbapp1.azurewebsites.net/api/Employee" -H "accept: text/plain"
Request URL
https://projbapp1.azurewebsites.net/api/Employee
```

8. Create a release pipeline to apply Terraform script for creating Required Kubernetes services and deploy image from ACR

The screenshot shows the Azure DevOps Release Pipeline editor. The pipeline has one stage, "Stage 1", which contains two tasks: "Agent job" and "Create Deployments & Services in AKS" and "Update Image". The "Create Deployments & Services in AKS" task is expanded, showing its configuration. It includes fields for "Display name" (Create Deployments & Services in AKS), "Kubernetes Cluster" (selected), "Service connection type" (Azure Resource Manager), "Azure subscription" (myPAYGSubscription1), "Resource group" (projectb-rg), and "Kubernetes cluster".

Azure DevOps

souravautomation1 / devOpsProjectB / Pipelines / Releases / releaseAKS / Release-3

Search

devOpsProjectB

Overview Boards Repos Pipelines Pipelines Environments Releases Library Task groups Deployment groups Test Plans Artifacts

releaseAKS > Release-3 > Stage 1 Succeeded

Pipeline Tasks Variables Logs Tests Deploy Cancel Refresh Download all logs Edit ...

Deployment process Succeeded

Agent job Pool: mypool1 · Agent: win-agent1 Started: 22/11/2021, 01:51:42 ... 20s

Succeeded

Agent job

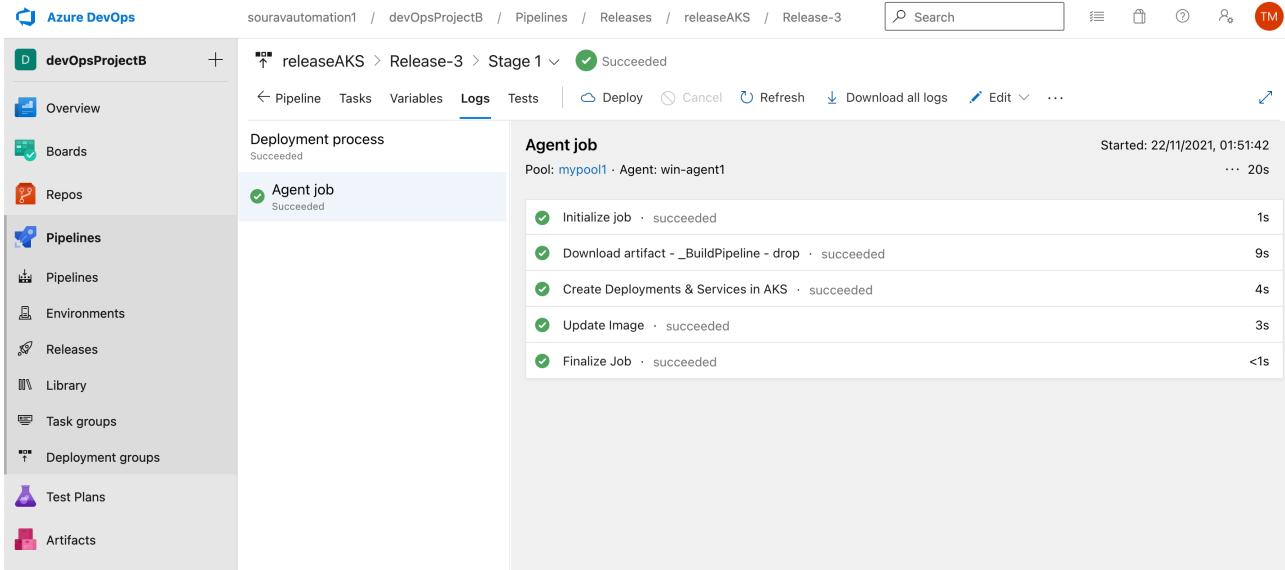
Initialize job · succeeded 1s

Download artifact - _BuildPipeline - drop · succeeded 9s

Create Deployments & Services in AKS · succeeded 4s

Update Image · succeeded 3s

Finalize Job · succeeded <1s



demoapp	default	Ok	LoadBalancer	10.0.111.61	20.88.182.19
---------	---------	----	--------------	-------------	--------------

Not Secure | 20.88.182.19/swagger/index.html

Apps Mail - Sourav Maz... MAE - My Mobile... MBM -IOS Outlook Web App

Responses

Curl

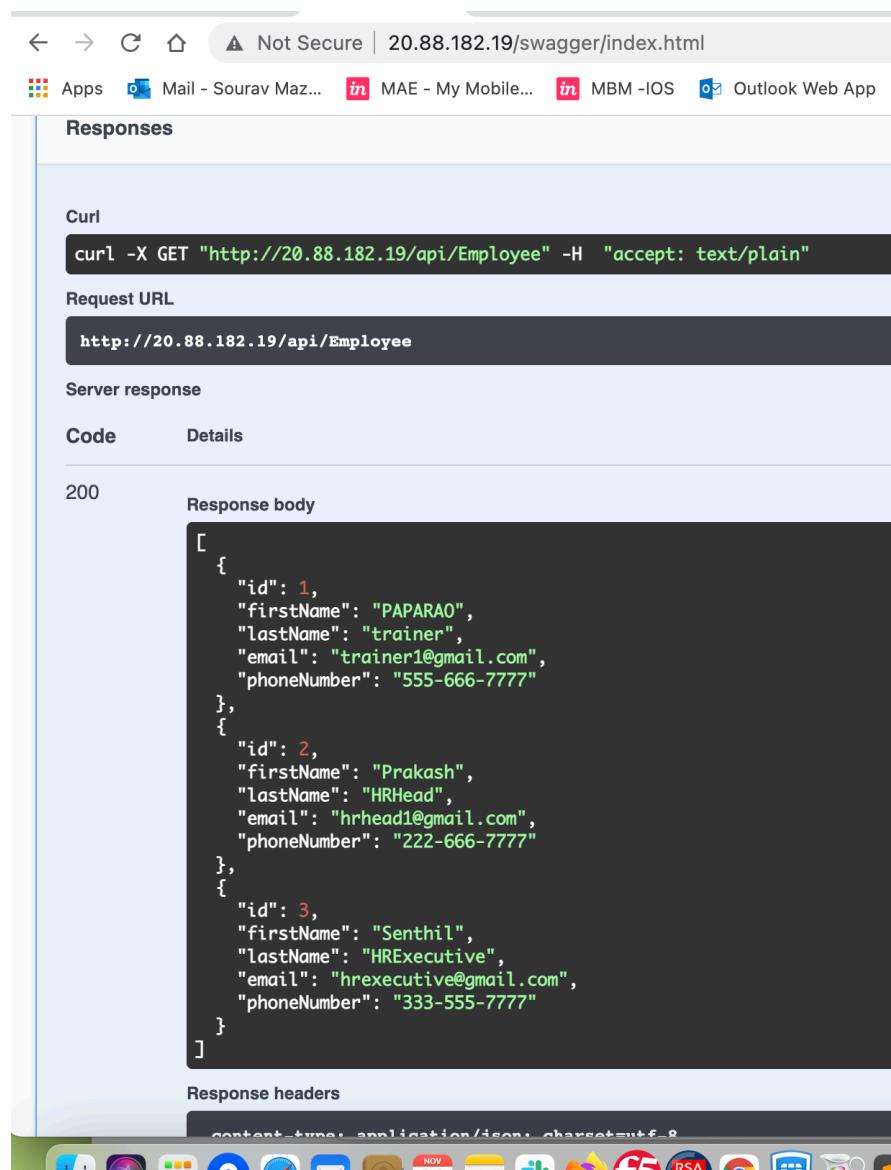
```
curl -X GET "http://20.88.182.19/api/Employee" -H "accept: text/plain"
```

Request URL

```
http://20.88.182.19/api/Employee
```

Server response

Code	Details
200	<p>Response body</p> <pre>[{"id": 1, "firstName": "PAPARAO", "lastName": "trainer", "email": "trainer1@gmail.com", "phoneNumber": "555-666-7777"}, {"id": 2, "firstName": "Prakash", "lastName": "HRHead", "email": "hrhead1@gmail.com", "phoneNumber": "222-666-7777"}, {"id": 3, "firstName": "Senthil", "lastName": "HRExecutive", "email": "hrexecutive@gmail.com", "phoneNumber": "333-555-7777"}]</pre> <p>Response headers</p> <pre>Content-type: application/json; charset=UTF-8</pre>

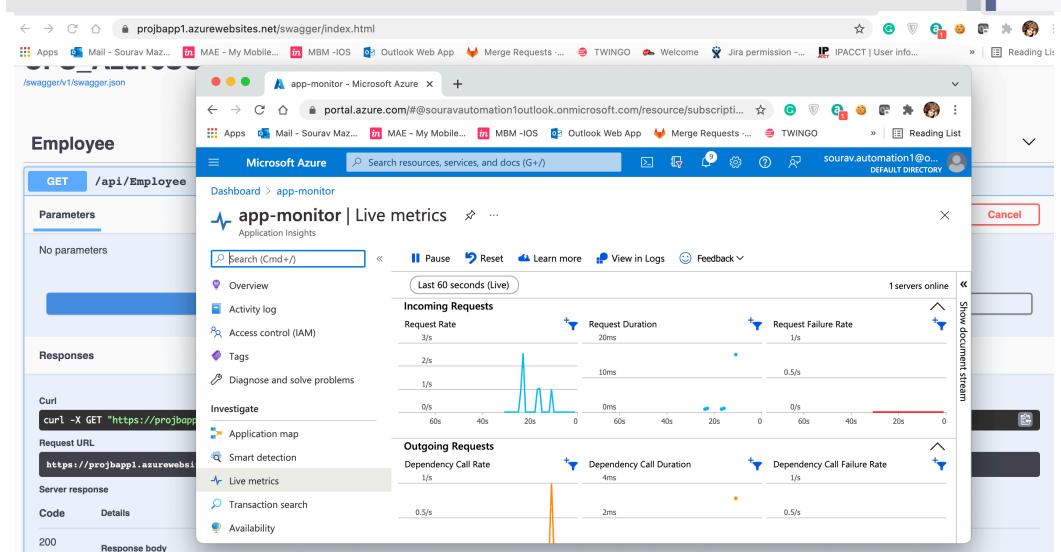
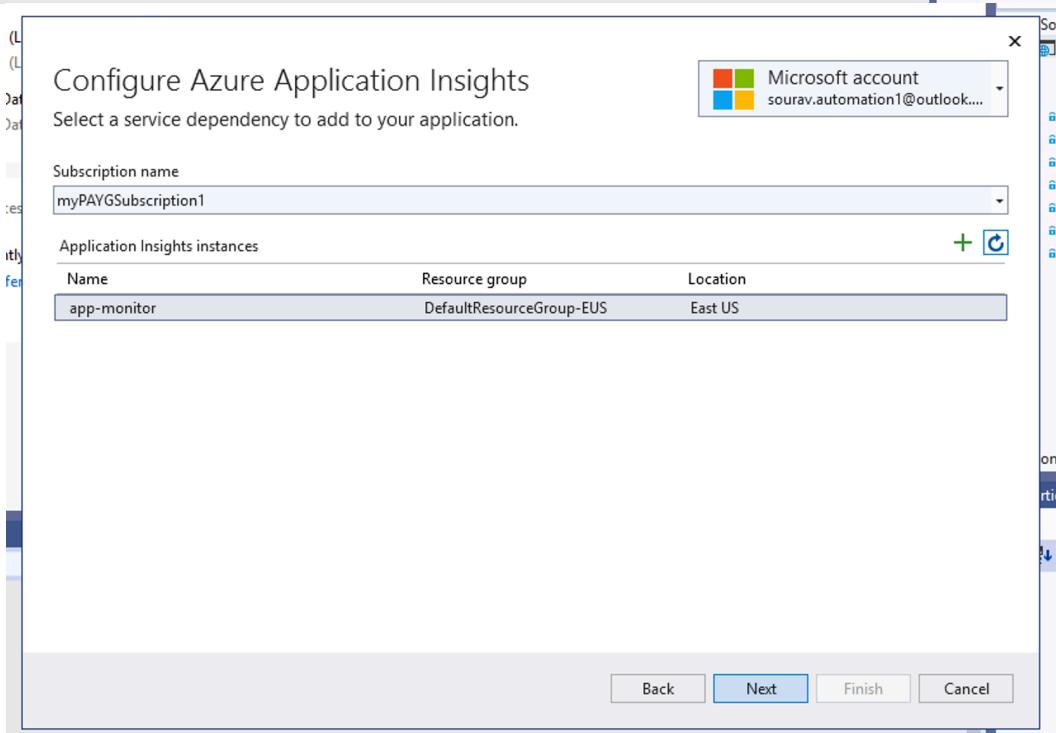
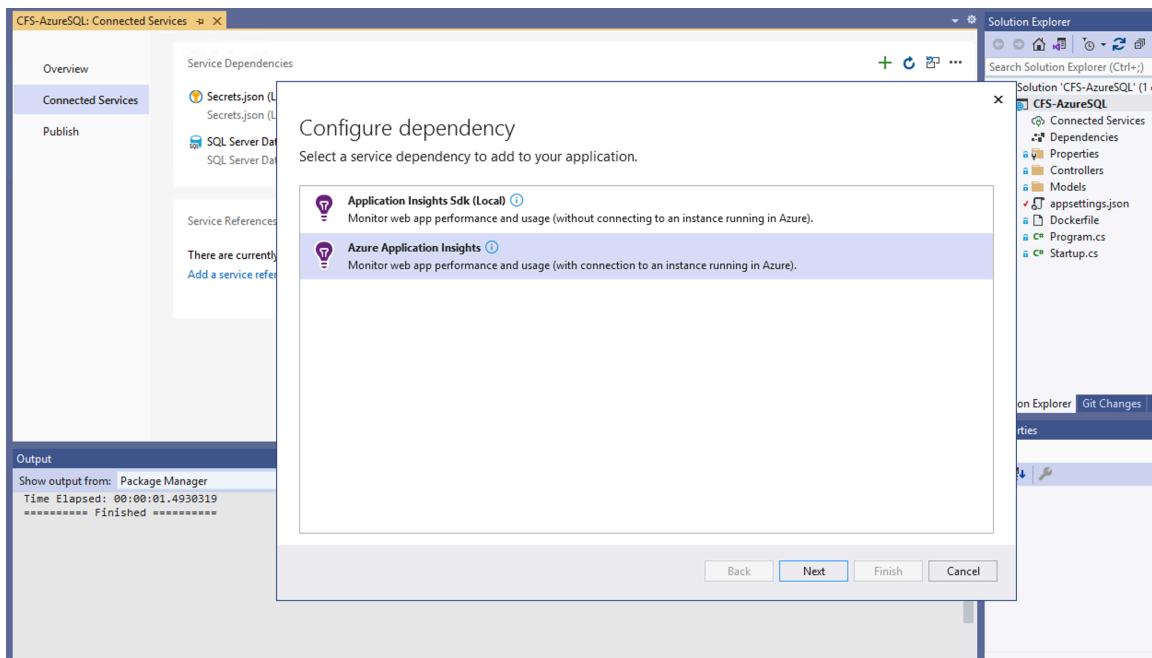


Azure Monitor

1. Dashboard Dashboard showing KPI of the deployment

The screenshot shows the Azure Log Analytics workspace overview page. The left sidebar lists navigation options like 'Create', 'Log Analytics workspaces', and 'Logs'. The main content area displays the workspace details under the heading 'DefaultWorkspace-c5f029c7-a268-4433-95d4-12eb70cd4cd0-EUS'. It includes sections for 'Overview', 'Essentials', and 'Get started with Log Analytics'. The 'Essentials' section provides key information such as Resource group (Move), Status, Location, Subscription, Tags, and Pricing tier. A 'JSON View' link is also present.

The screenshot shows the Microsoft Azure Application Insights creation wizard. The top navigation bar includes 'Microsoft Azure' and a search bar. The main page title is 'Application Insights'. It features a 'PROJECT DETAILS' section where users can select a subscription and resource group. Below this are 'INSTANCE DETAILS' (Name, Region, Resource Mode) and 'WORKSPACE DETAILS' (Subscription and Log Analytics Workspace). At the bottom, there are 'Review + create' and 'Next : Tags >' buttons.



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Monitor | Virtual Machines

Microsoft

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Insights

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Azure Monitor

Insights Onboarding


The VM is not connected to any workspace. Please select the monitoring workspace where you will store your data

Workspace Subscription * ⓘ

myPAYGSubscription1

Choose a Log Analytics Workspace ⓘ

DefaultWorkspace-c5f029c7-a268-4433-95d4-12eb70cd4cd0-EUS [eastus]

 ⓘ The map data set collected with Azure Monitor for VMs is intended to be infrastructure data about the resources being deployed and monitored. For details on data collected please [click here](#).

Enable
Enable

 ⓘ Having difficulties enabling Azure Monitors for VM? [Troubleshoot](#)
Have more questions?
[Learn more about virtual machine scale set monitoring](#) ⓘ

[What is VM Insights?](#) ⓘ

[Learn more about pricing](#) ⓘ

[Support Matrix](#) ⓘ

[FAQ](#) ⓘ

[Home](#) > [Log Analytics workspaces](#) > DefaultWorkspace-c5f029c7-a268-4433-95d4-12eb70cd4cd0-EUS

DefaultWorkspace-c5f029c7-a268-4433-95d4-12eb70cd4cd0-EUS | Logs

Log Analytics workspace

Search (Cmd+/)

Overview

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Settings

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General

[Workspace summary](#)

New Query 1* **New Query 2***
[DefaultWorkspace...](#) Select scope
Run

Time range : Set in query

Feedback
Queries
Query explorer
...

Tables Queries ...

```

1 InsightsMetrics // Response time trend
2 // Chart request duration over the last 12 hours.
3 // To create an alert for this query, click '+ New alert rule'
4 AppRequests
5 | where TimeGenerated > ago(12h)
6 | summarize avgRequestDuration=avg(DurationMs) by bin(TimeGenerated, 10m), _ResourceId // use a time
7 | render timechart

```

 Results Chart | Display time (UTC+00:00) ▾

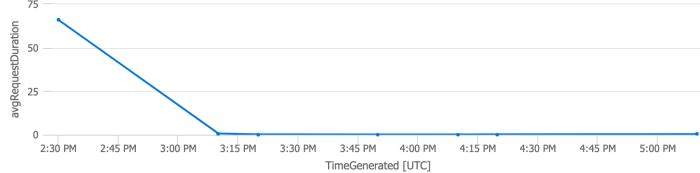
Completed


Chart formatting

[Home](#) > [Log Analytics workspaces](#) > DefaultWorkspace-c5f029c7-a268-4433-95d4-12eb70cd4cd0-EUS

DefaultWorkspace-c5f029c7-a268-4433-95d4-12eb70cd4cd0-EUS | Logs

Log Analytics workspace

Search (Cmd+/)

Overview

[Activity log](#)

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Settings

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General

[Workspace summary](#)

New Query 1* **New Query 2***
[DefaultWorkspace...](#) Select scope
Run

Time range : Set in query

Feedback
Queries
Query explorer
...

 Tables Queries ...

Search

Filter Group by: Category

Run

Time range : Set in query

Save
Share
New alert rule
Export
...

Columns

 Results Chart | Display time (UTC+00:00) ▾

Completed

TimeGenerated [UTC]	Computer	ObjectKind	Namespace	Name
11/22/2021, 12:34:33.000 PM	aks-agentpool-26140776-vmss000...	Pod	kube-system	add...
11/22/2021, 12:34:33.000 PM	aks-agentpool-26140776-vmss000...	Pod	default	dem...
11/22/2021, 12:34:33.000 PM	aks-agentpool-26140776-vmss000...	Service	kube-system	kube...
11/22/2021, 12:34:33.000 PM	aks-agentpool-26140776-vmss000...	Pod	kube-system	core...
11/22/2021, 12:34:33.000 PM	aks-agentpool-26140776-vmss000...	Pod	kube-system	core...

00:01.4 78 records

TimeGenerated [UTC]

Computer

ObjectKind

Namespace

Name

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