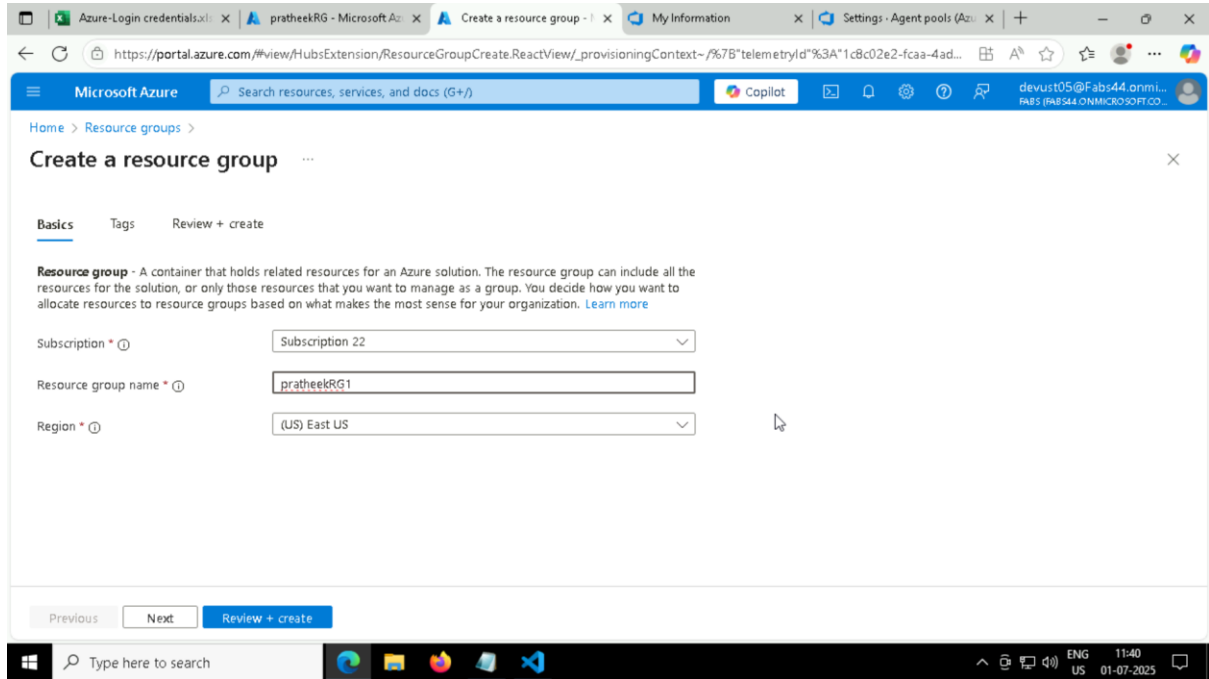


AZURE

PROVISIONING AZURE RESOURCES

Resource Group:



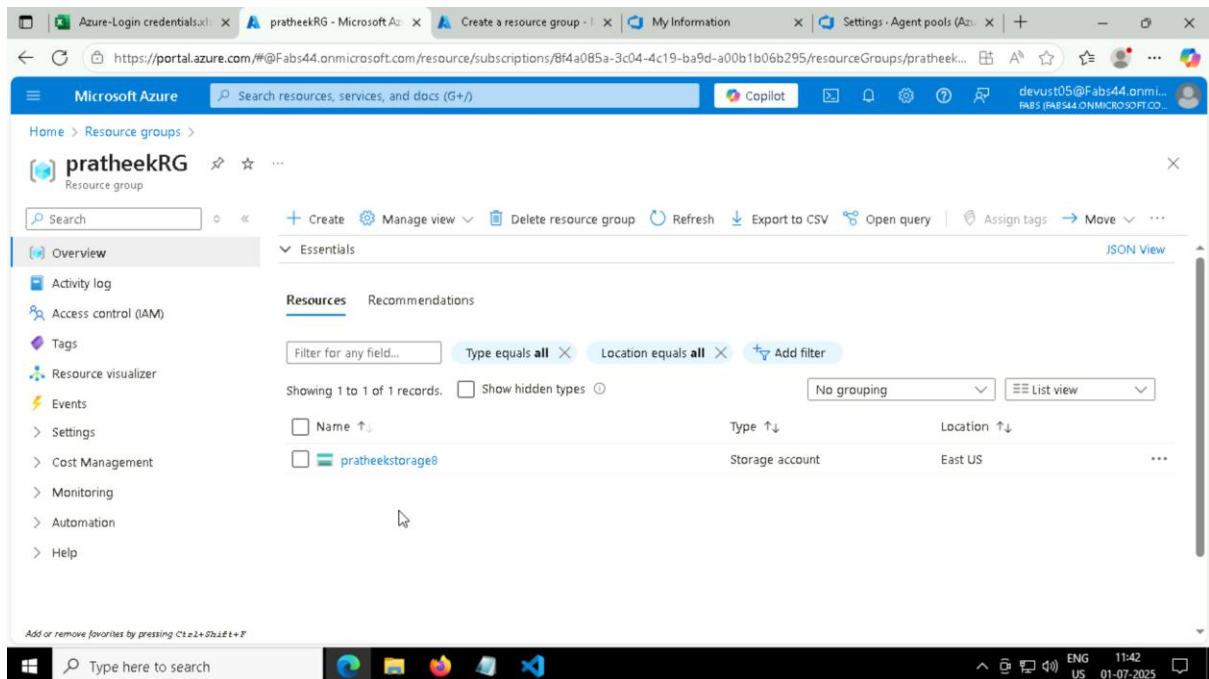
The screenshot shows the 'Create a resource group' form in the Azure portal. The form is titled 'Create a resource group' and has three tabs: 'Basics', 'Tags', and 'Review + create'. The 'Basics' tab is selected. Below the tabs, there is a description of a Resource group: 'A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)'. The form contains three input fields: 'Subscription' (set to 'Subscription 22'), 'Resource group name' (set to 'pratheekRG1'), and 'Region' (set to '(US) East US'). At the bottom of the form, there are three buttons: 'Previous', 'Next', and 'Review + create'.

Subscription * ⓘ

Resource group name * ⓘ

Region * ⓘ

[Previous](#) [Next](#) [Review + create](#)



The screenshot shows the 'pratheekRG' resource group overview page in the Azure portal. The page has a left sidebar with a search bar and a list of navigation links: 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Resource visualizer', 'Events', 'Settings', 'Cost Management', 'Monitoring', 'Automation', and 'Help'. The main content area is titled 'pratheekRG' and has a 'JSON View' button. Below the title, there is a 'Resources' tab and a 'Recommendations' tab. The 'Resources' tab is selected. Below the tabs, there is a filter bar with a search bar and two filters: 'Type equals all' and 'Location equals all'. Below the filter bar, there is a table with one record. The table has columns for 'Name', 'Type', and 'Location'. The record is 'pratheekstorage8', which is a 'Storage account' located in 'East US'.


Search

[Create](#) [Manage view](#) [Delete resource group](#) [Refresh](#) [Export to CSV](#) [Open query](#) [Assign tags](#) [Move](#) [JSON View](#)

Resources Recommendations

Filter for any field... [Type equals all](#) [Location equals all](#) [Add filter](#)

Showing 1 to 1 of 1 records. ☐ Show hidden types ⓘ [No grouping](#) [List view](#)

Name ↑↓	Type ↑↓	Location ↑↓	
 pratheekstorage8	Storage account	East US	...

Add or remove favorites by pressing Ctrl+Shift+F

CREATING AKS CLUSTER:

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the 'Kubernetes services' page. The left sidebar has a dropdown menu open for 'Kubernetes cluster', showing options like 'Automatic Kubernetes cluster (preview)' and 'Add a Kubernetes cluster with Azure Arc'. The main area shows a table with one cluster entry: 'testrg' in 'East US'.

Resource Group	Kubernetes ver...	Location	Subscription	SKU	Fleet Manager
testrg	1.31.9	East US	Subscription 22	Base	

The screenshot shows the 'Create Kubernetes cluster' page in the Microsoft Azure portal. The 'Basics' tab is selected, showing fields for 'Subscription' (Subscription 22) and 'Resource group' (pratheekRG). The 'Review + create' button is visible at the bottom.

Subscription * ⓘ

Resource group * ⓘ [Create new](#)

[Previous](#) [Next](#) [Review + create](#)

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information. The main content area is titled "microsoft.aks-1751354265530 | Overview". The left sidebar contains a navigation menu with "Overview", "Inputs", "Outputs", and "Template". The main content area displays a "Deployment is in progress" status. It includes a table with deployment details:

Resource	Type	Status	Operation Details
ClusterOnboardingPut-c	Microsoft.Resources/...	Created	Operation details
CreatePromDCRA-2025C	Microsoft.Resources/...	OK	Operation details
CreatePromDCR-202507	Microsoft.Resources/...	OK	Operation details
ConnectAKStoACR-d440	Microsoft.Resources/...	OK	Operation details
pratheekAKS/aksManag	Microsoft.ContainerSe...	OK	Operation details
pratheekAKS/aksManag	Microsoft.ContainerSe...	OK	Operation details
CreatePromRecordingRi	Microsoft.Resources/...	OK	Operation details

On the right side, there are several informational cards: "Microsoft Defender for Cloud", "Free Microsoft tutorials", and "Work with an expert". The bottom of the screen shows the Windows taskbar with the search bar and various application icons.

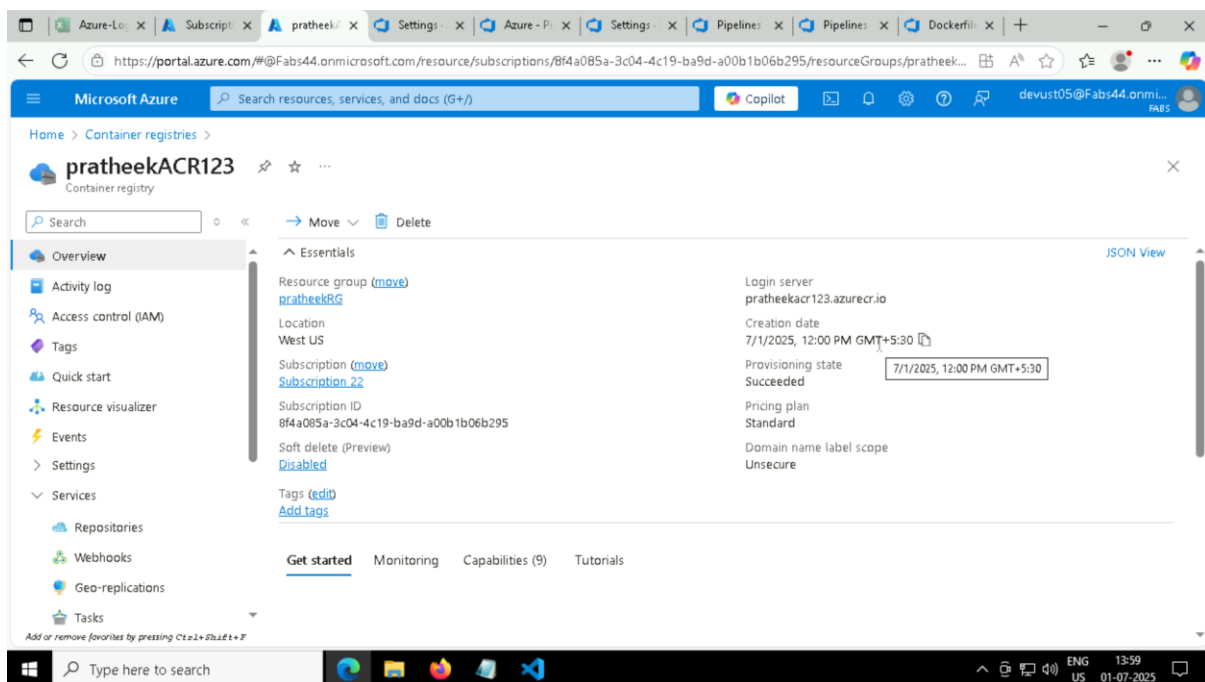
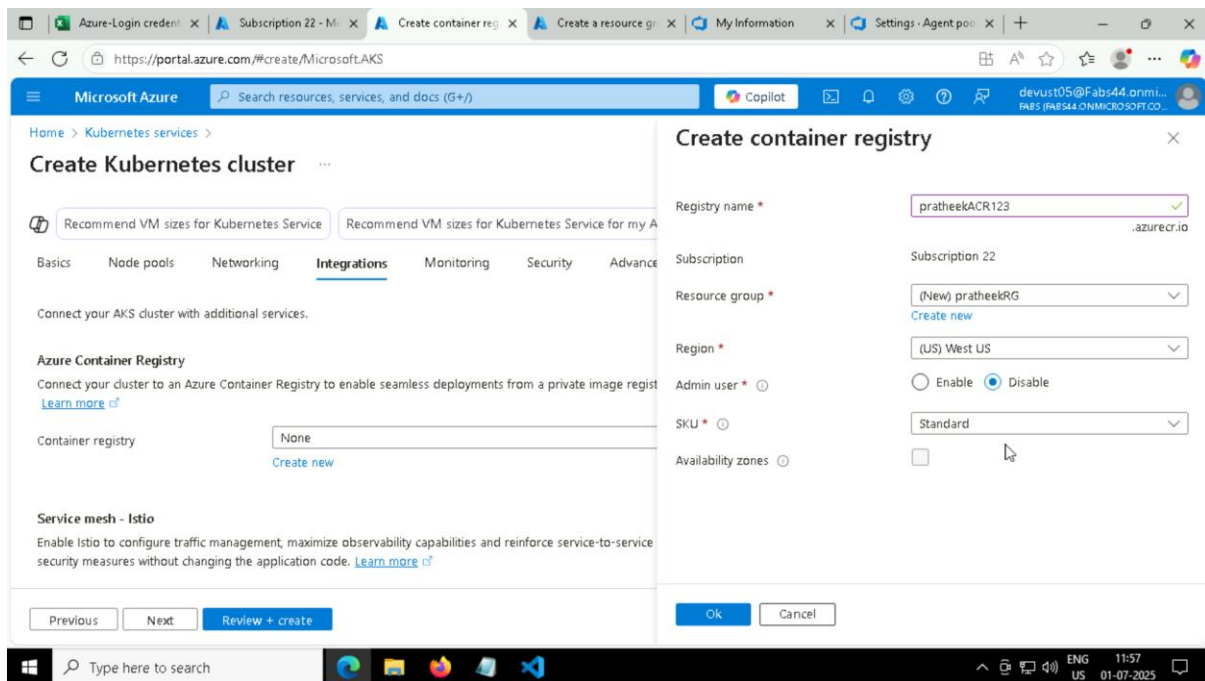
The screenshot shows the Microsoft Azure portal interface, similar to the previous one, but the deployment status is now "Your deployment is complete". The main content area displays a green checkmark and the text "Your deployment is complete". It includes a table with deployment details:

Resource	Type	Status	Operation Details
ClusterOnboardingPut-c	Microsoft.Resources/...	Created	Operation details
CreatePromDCRA-2025C	Microsoft.Resources/...	OK	Operation details
CreatePromDCR-202507	Microsoft.Resources/...	OK	Operation details
ConnectAKStoACR-d440	Microsoft.Resources/...	OK	Operation details
pratheekAKS/aksManag	Microsoft.ContainerSe...	OK	Operation details
pratheekAKS/aksManag	Microsoft.ContainerSe...	OK	Operation details
CreatePromRecordingRi	Microsoft.Resources/...	OK	Operation details

Below the table, there is a "Next steps" section with a "Go to resource" button. On the right side, there are several informational cards: "Cost Management", "Microsoft Defender for Cloud", "Free Microsoft tutorials", and "Work with an expert". The bottom of the screen shows the Windows taskbar with the search bar and various application icons.

The deployment of pratheekAKS cluster is complete.

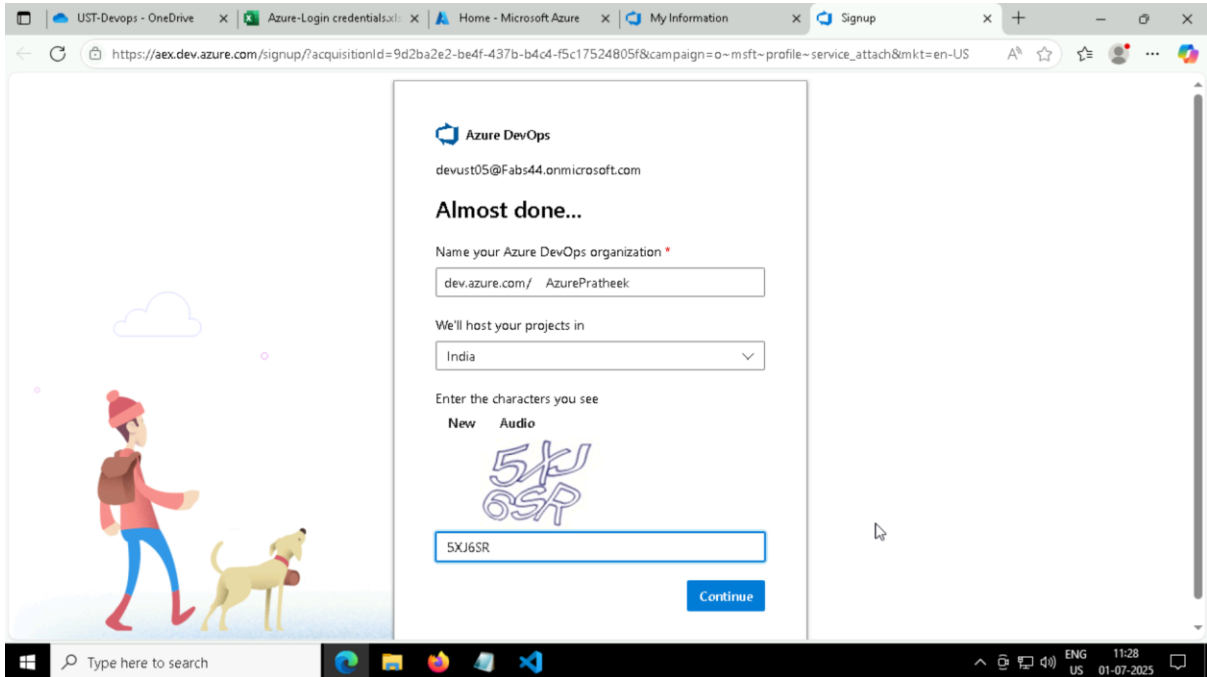
Creating ACR and integrating with AKS:



From the above, we can see pratheekACR is created and is integrated to PratheekAKS cluster

SETTING UP AZURE DEVOPS

Creating organization:



UST-Devops - OneDrive x Azure-Login credentials.xl x Home - Microsoft Azure x My Information x Signup x

https://aex.dev.azure.com/signup/?acquisitionId=9d2ba2e2-be4f-437b-b4c4-f5c17524805f&campaign=o~msft~profile~service_attach&mk=en-US

Azure DevOps
devust05@Fabs44.onmicrosoft.com

Almost done...

Name your Azure DevOps organization *

dev.azure.com/ AzurePratheek

We'll host your projects in

India

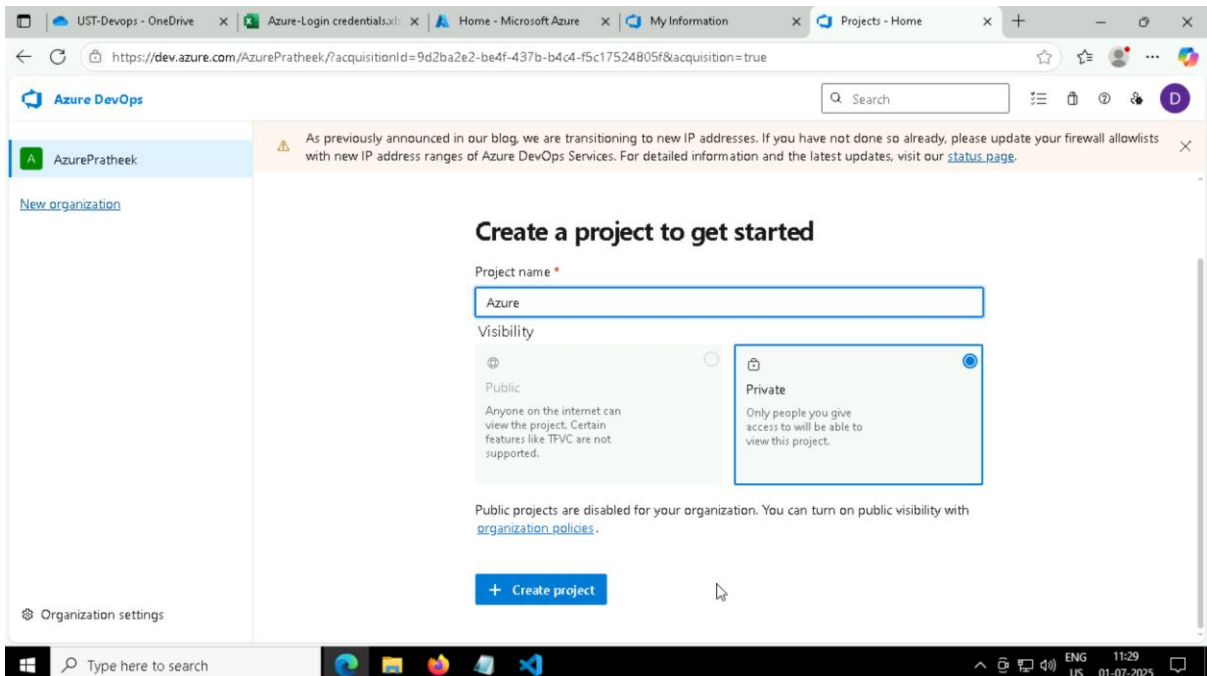
Enter the characters you see

New Audio

5XJ6SR

Continue

Creating new project:



UST-Devops - OneDrive x Azure-Login credentials.xl x Home - Microsoft Azure x My Information x Projects - Home x

https://dev.azure.com/AzurePratheek/?acquisitionId=9d2ba2e2-be4f-437b-b4c4-f5c17524805f&acquisition=true

Azure DevOps

Search

As previously announced in our blog, we are transitioning to new IP addresses. If you have not done so already, please update your firewall allowlists with new IP address ranges of Azure DevOps Services. For detailed information and the latest updates, visit our [status page](#).

Create a project to get started

Project name *

Azure

Visibility

Public
Anyone on the internet can view the project. Certain features like TFVC are not supported.

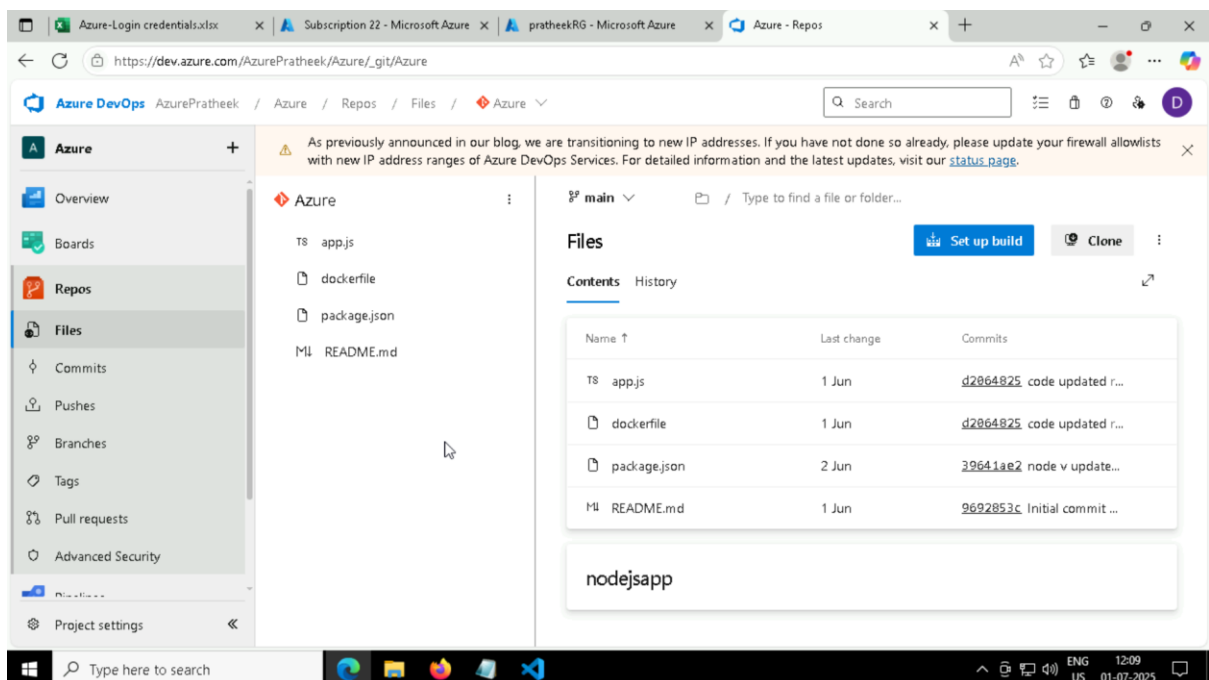
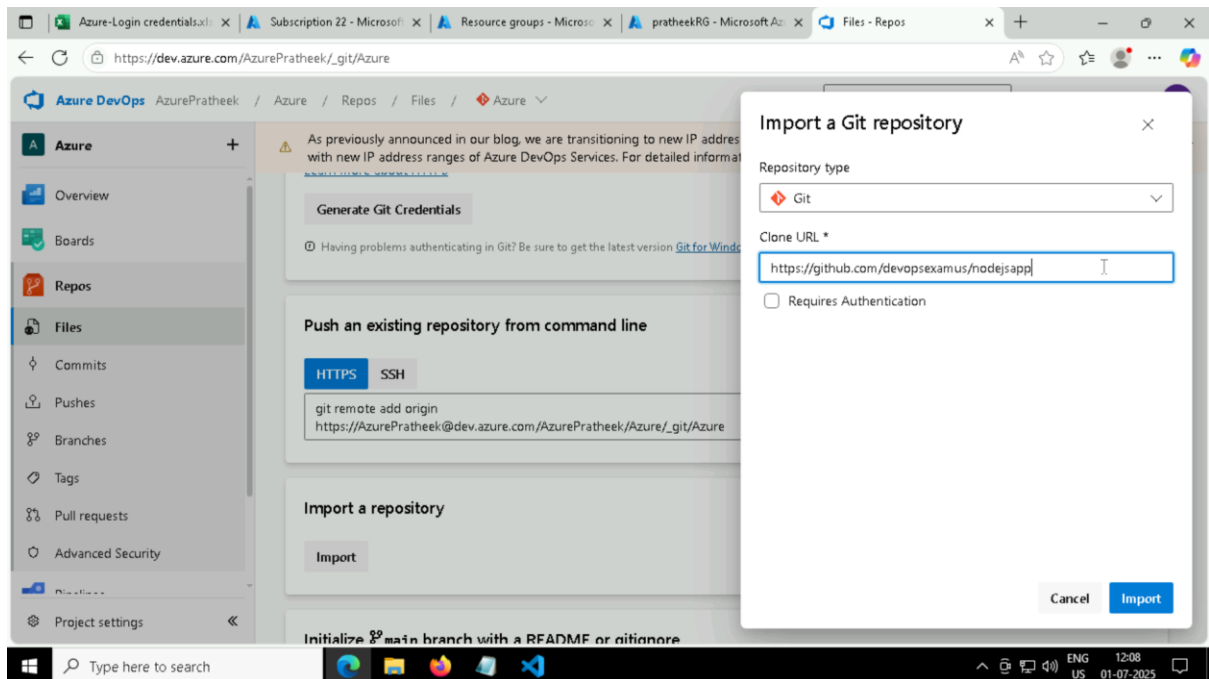
Private
Only people you give access to will be able to view this project.

Public projects are disabled for your organization. You can turn on public visibility with [organization policies](#).

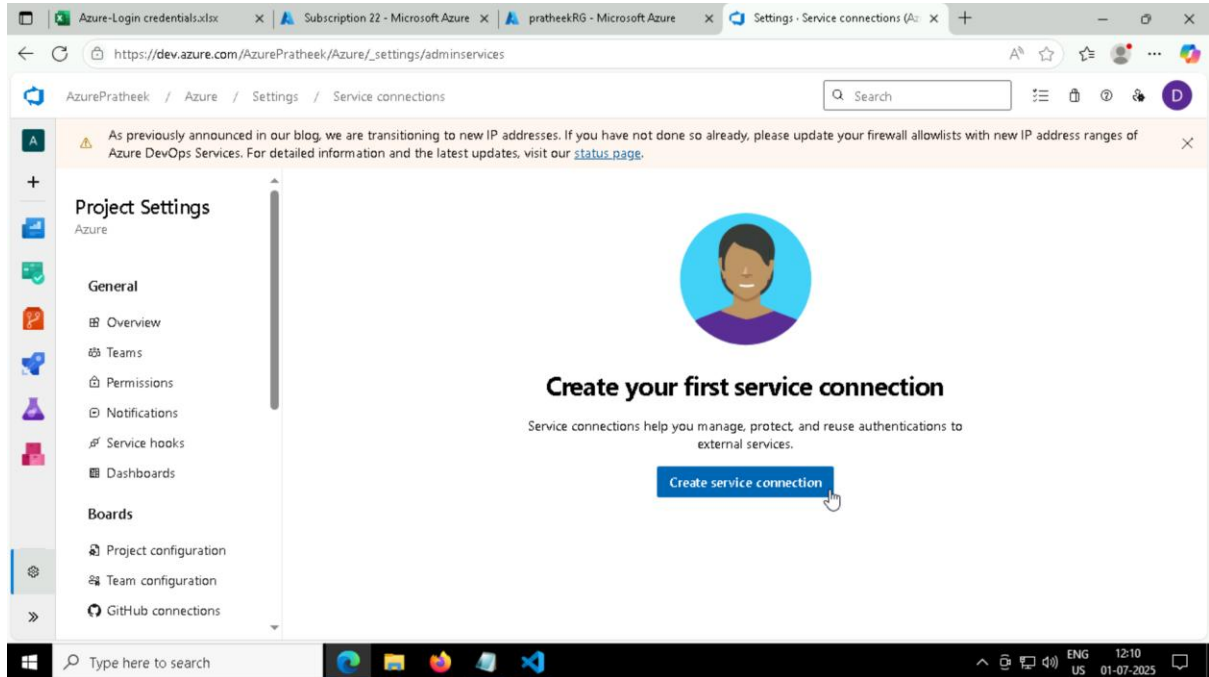
+ Create project

Organization settings

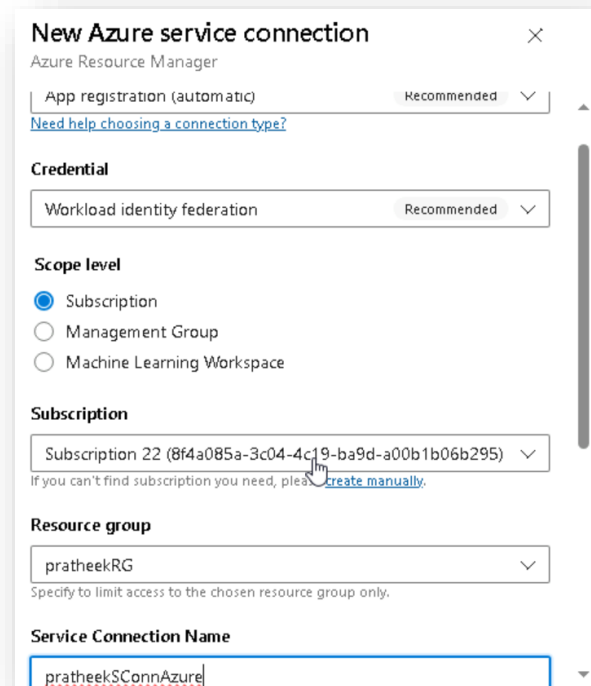
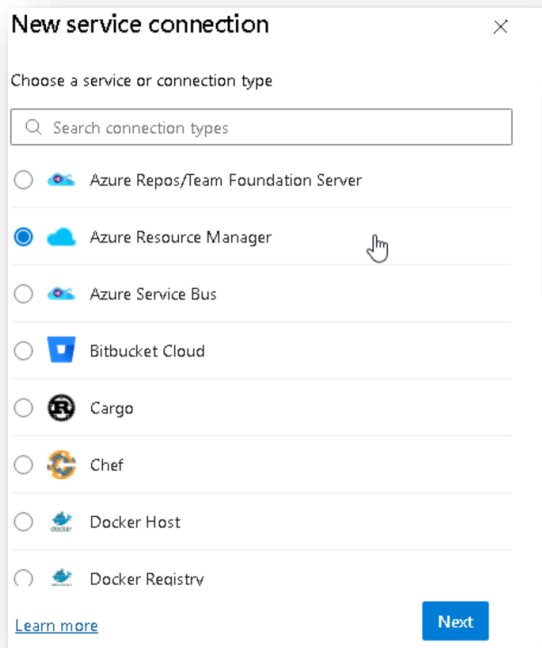
Cloning repository:

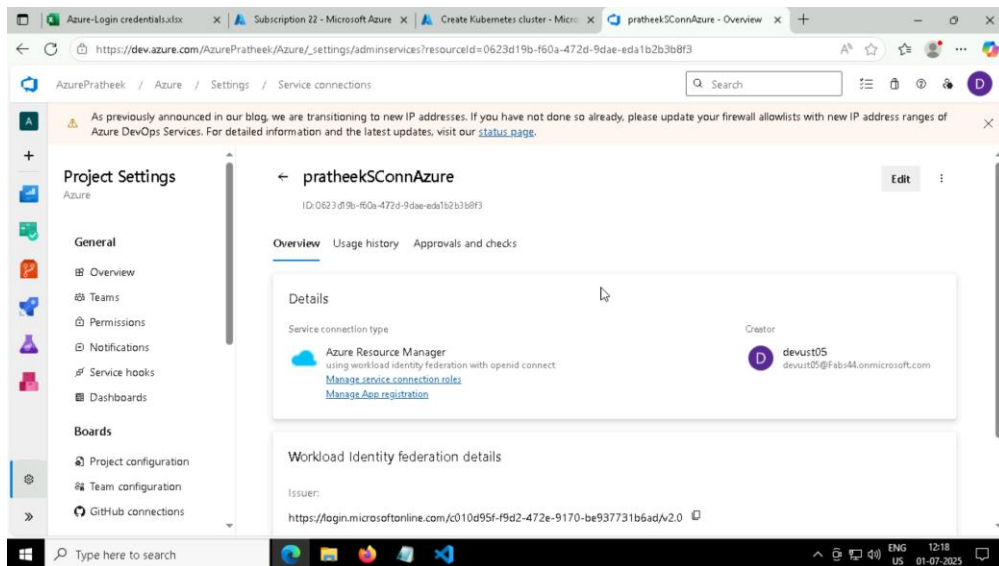


Service connections:

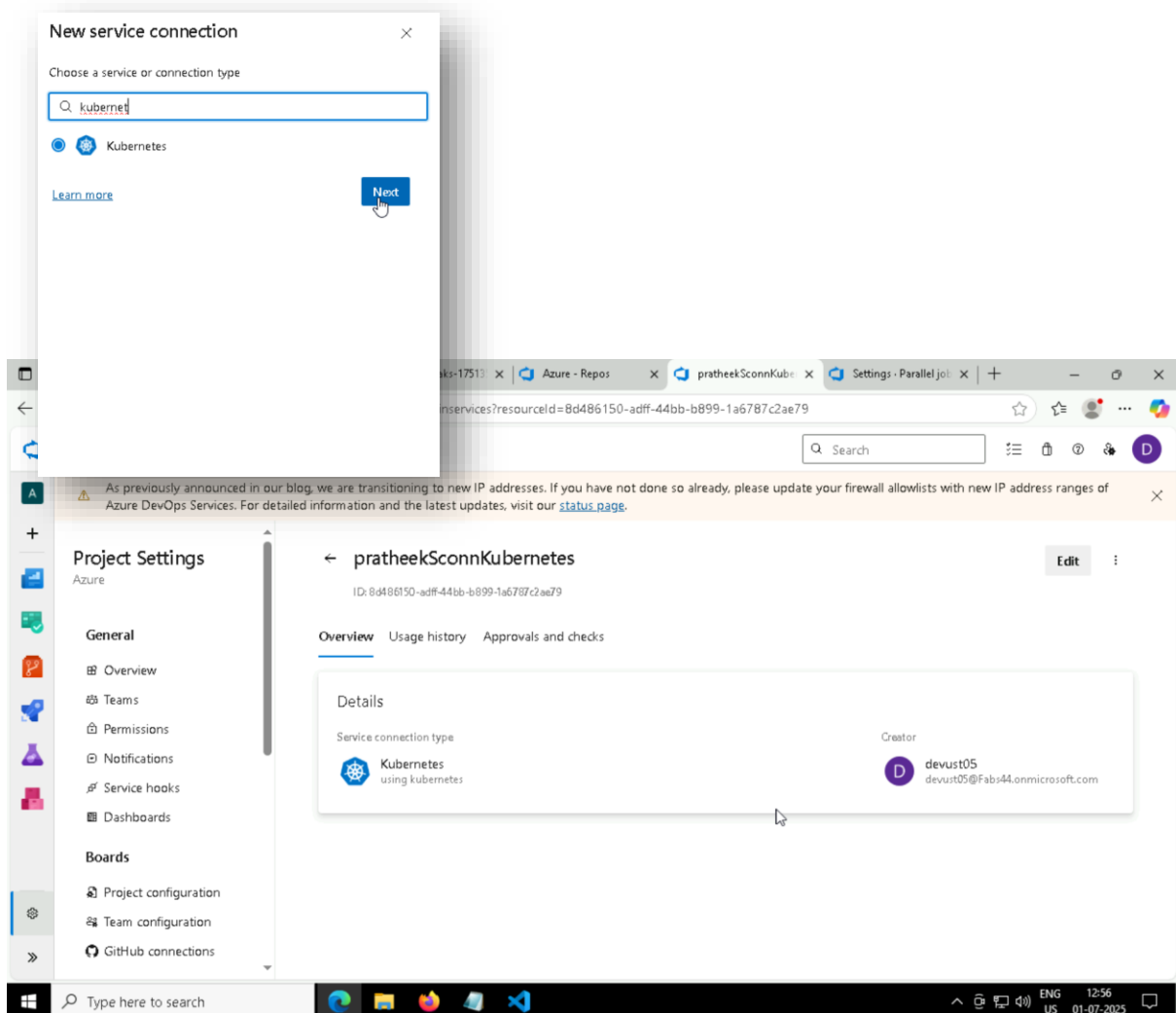


a. Azure service connection:

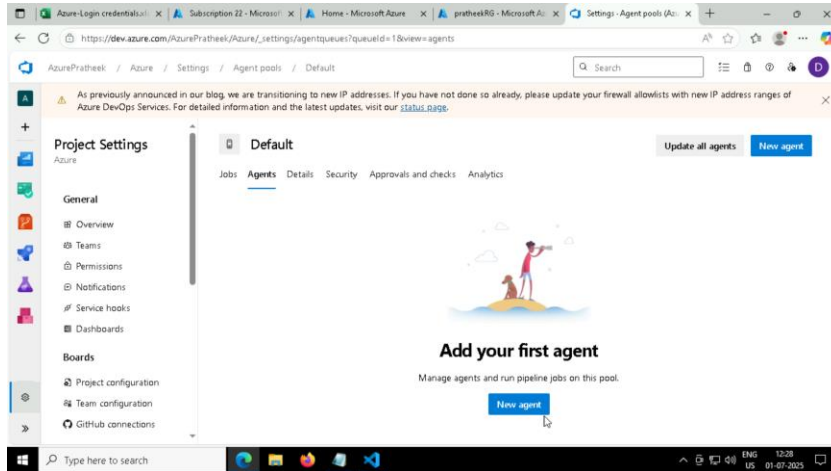




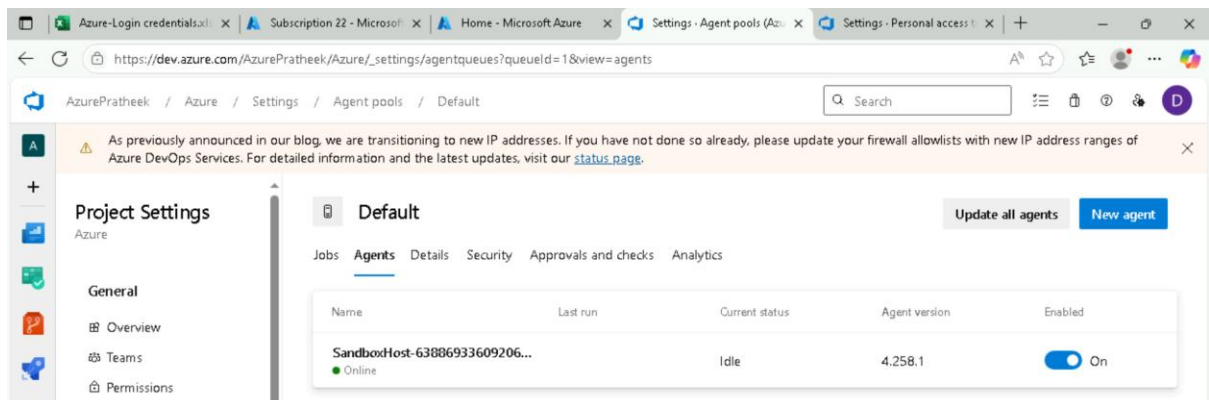
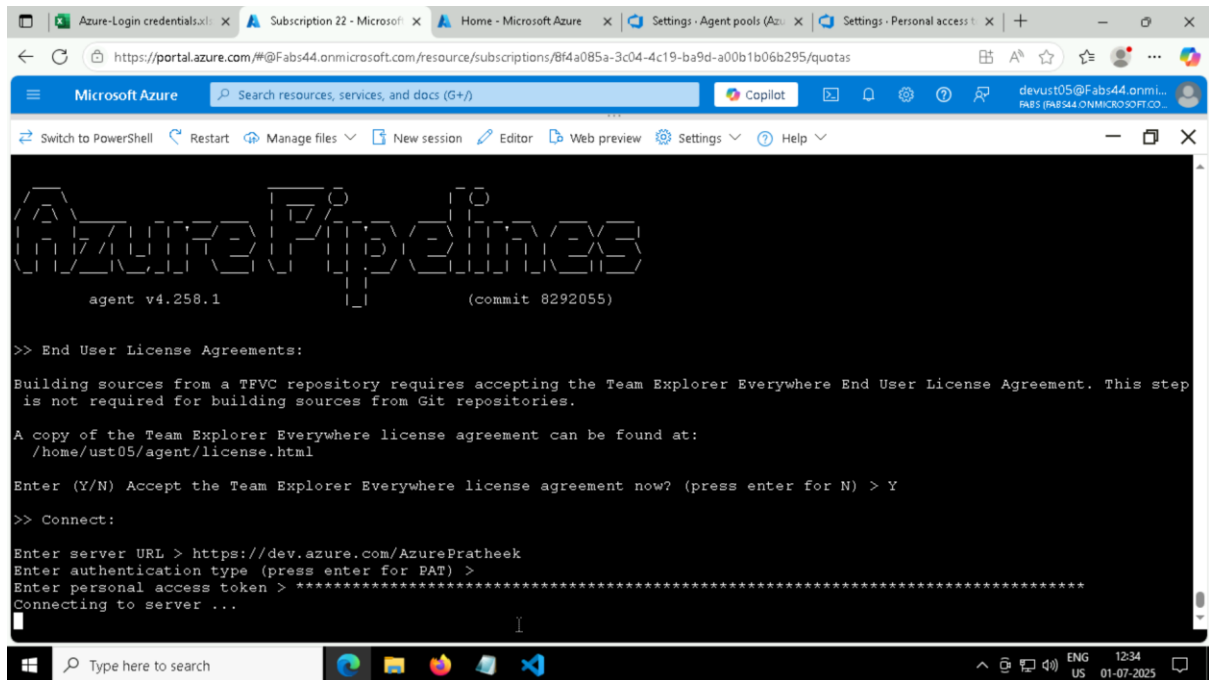
b. AKS service connection



Creating agent:

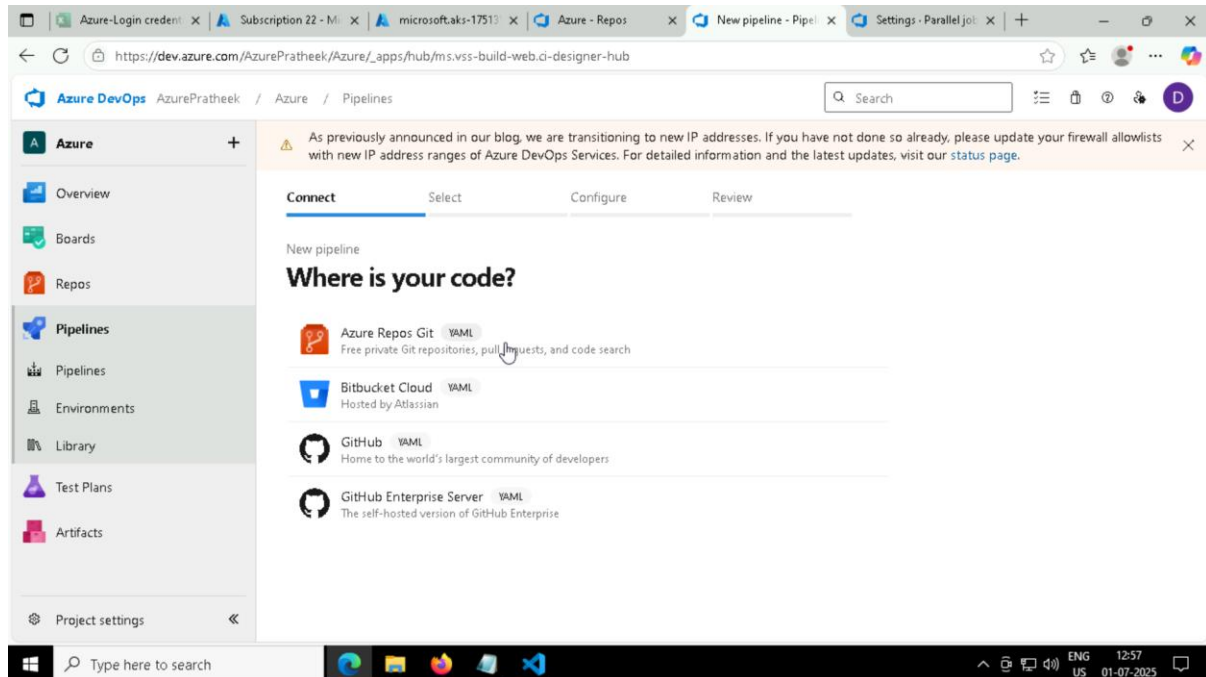


Adding agent:



CONFIGURING CI/CD PIPELINE

Building pipeline:



Deploy to Azure Kubernetes Service

Build and push image to Azure Container Registry; Deploy to Azure Kubernetes Service

Cluster

pratheekAKS

Namespace

☐ New ☒ Existing

default

Container registry

pratheekACR123

Image Name

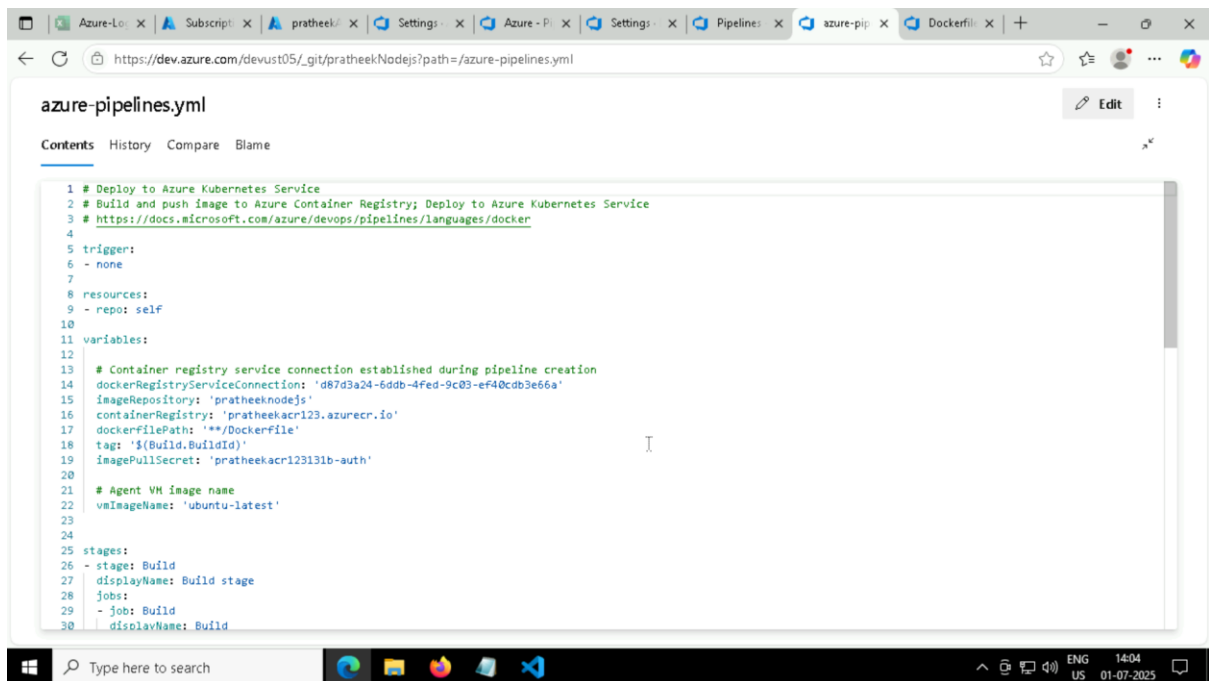
aNodejs

Service Port

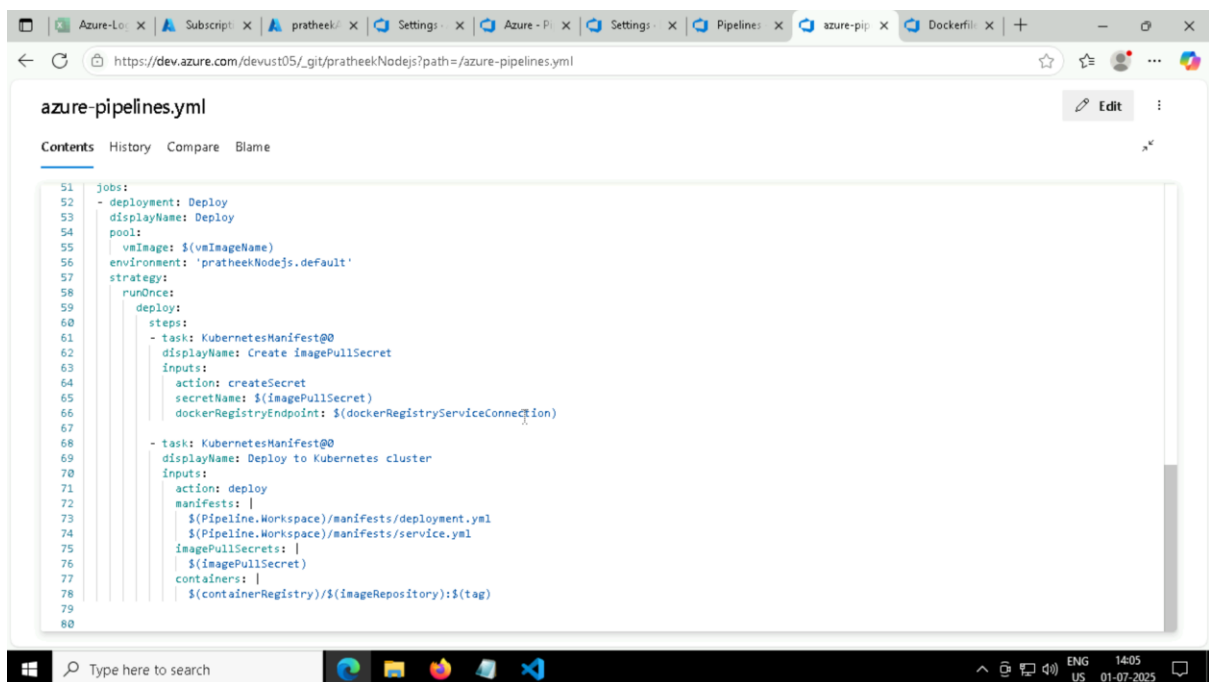
3000

Back Validate and configure

Pipeline yml:

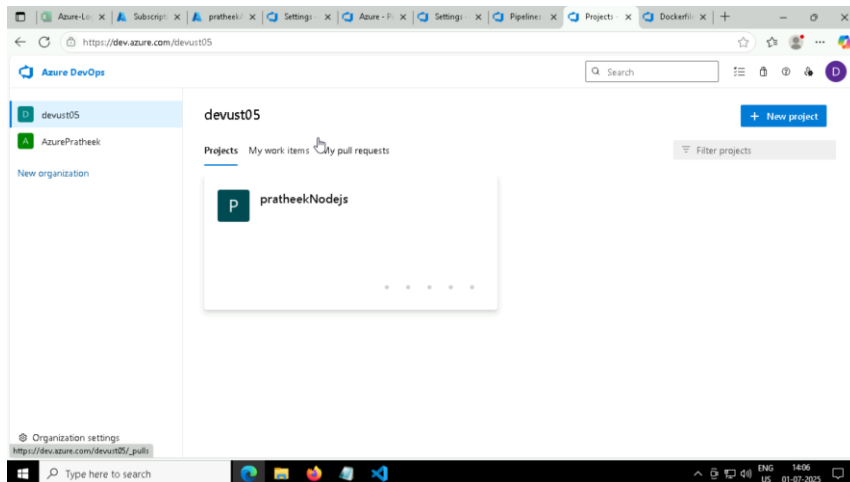


```
1 # Deploy to Azure Kubernetes Service
2 # Build and push image to Azure Container Registry; Deploy to Azure Kubernetes Service
3 # https://docs.microsoft.com/azure/devops/pipelines/languages/docker
4
5 trigger:
6 - none
7
8 resources:
9 - repo: self
10
11 variables:
12
13 # Container registry service connection established during pipeline creation
14 dockerRegistryServiceConnection: 'd87d3a24-6ddb-4fed-9c03-ef40cdb3e66a'
15 imageRepository: 'pratheetknodejs'
16 containerRegistry: 'pratheetkacr123.azurecr.io'
17 dockerfilePath: '**/Dockerfile'
18 tag: '$(Build.BuildId)'
19 imagePullSecret: 'pratheetkacr123131b-auth'
20
21 # Agent VM image name
22 vmImageName: 'ubuntu-latest'
23
24
25 stages:
26 - stage: Build
27   displayName: Build stage
28   jobs:
29   - job: Build
30     displayName: Build
```

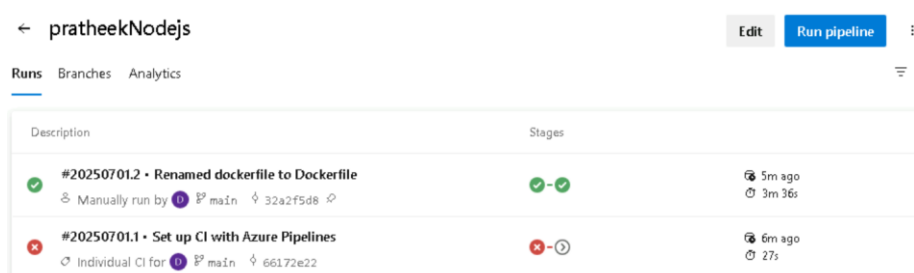
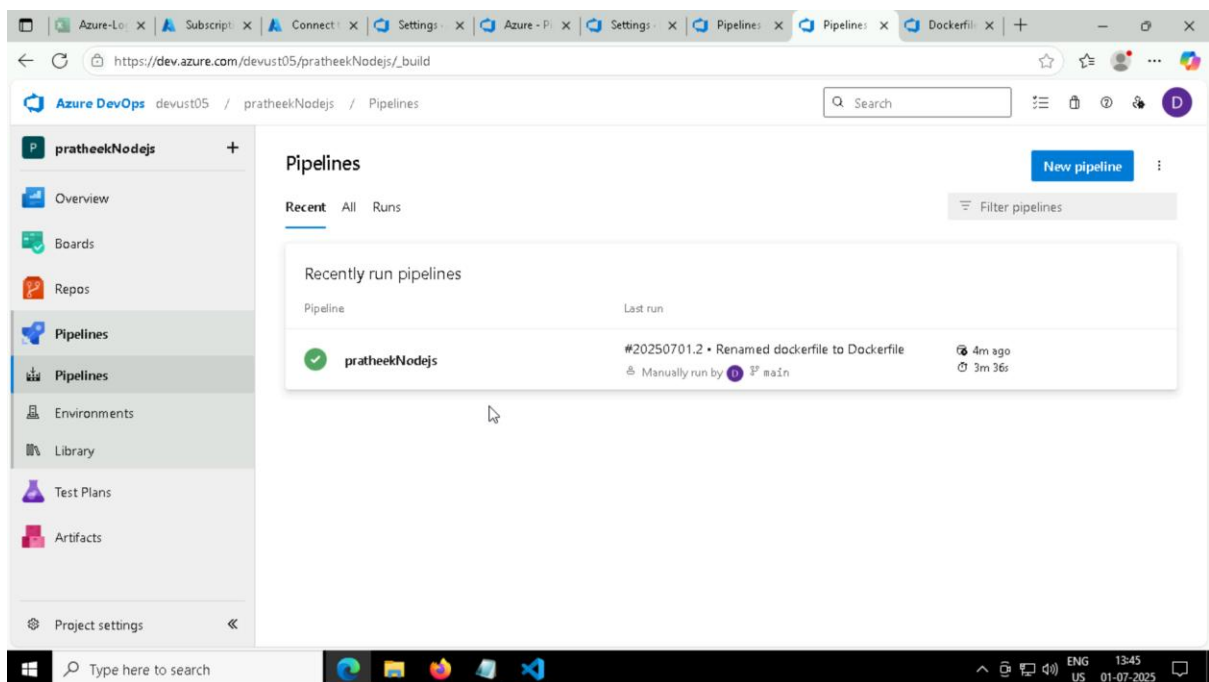


```
51 jobs:
52 - deployment: Deploy
53   displayName: Deploy
54   pool:
55     vmImage: $(vmImageName)
56   environment: 'pratheetknodejs.default'
57   strategy:
58     runOnce:
59       deploy:
60         steps:
61         - task: KubernetesManifest@0
62           displayName: Create imagePullSecret
63           inputs:
64             action: createSecret
65             secretName: $(imagePullSecret)
66             dockerRegistryEndpoint: $(dockerRegistryServiceConnection)
67
68         - task: KubernetesManifest@0
69           displayName: Deploy to Kubernetes cluster
70           inputs:
71             action: deploy
72             manifests: |
73               $(Pipeline.Workspace)/manifests/deployment.yml
74               $(Pipeline.Workspace)/manifests/service.yml
75             imagePullSecrets: |
76               $(imagePullSecret)
77             containers: |
78               $(containerRegistry)/$(imageRepository):$(tag)
79
80
```

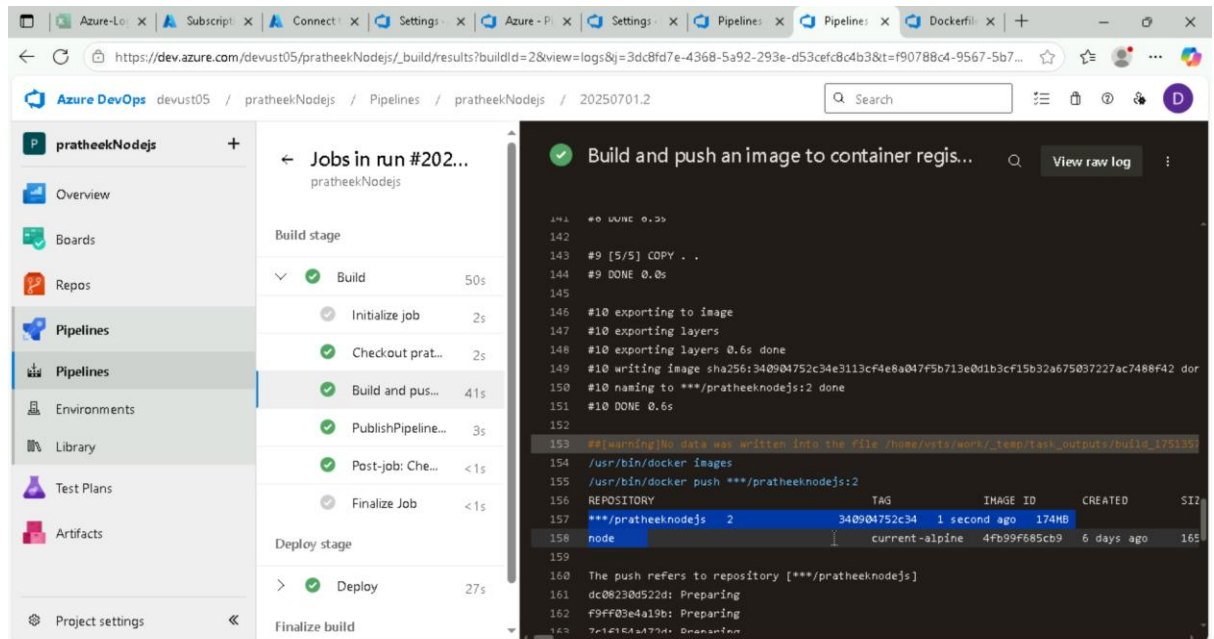
I had problem with hosting agents. So I created new organization and increased the ms-host -> 4. Thereafter rectifying that issue.



MY PIPELINE

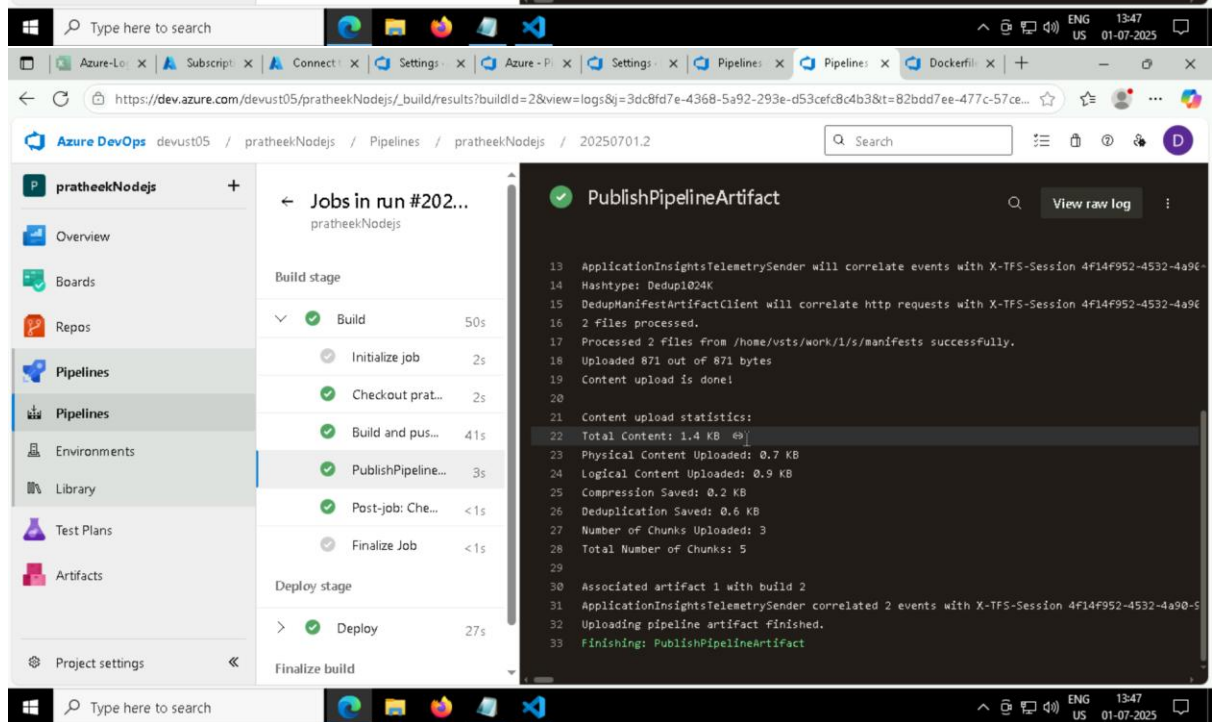


A. BUILD STAGE



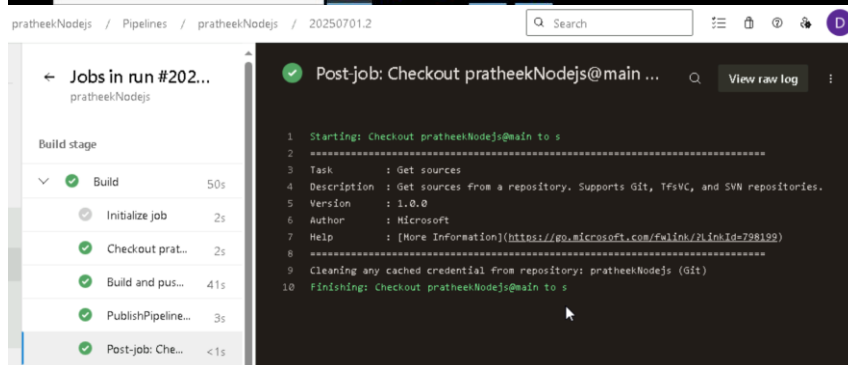
The screenshot shows the Azure DevOps interface for a build pipeline. The left sidebar contains navigation links: Overview, Boards, Repos, Pipelines (selected), Environments, Library, Test Plans, and Artifacts. The main area displays the 'Jobs in run #202...' for the 'pratheekNodejs' pipeline. The 'Build stage' is expanded, showing a list of jobs: Initialize job (2s), Checkout prat... (2s), Build and pus... (41s), PublishPipeline... (3s), Post-job: Che... (<1s), and Finalize Job (<1s). The 'Build and pus...' job is selected, and its logs are displayed on the right. The logs show the build process for a Docker image, including the export of layers, writing the image, and pushing it to the container registry. The image ID is 340904752c34, and the image size is 174MB. The push refers to repository [***pratheeknodejs].

```
141 #0 DONE 0.3s
142
143 #9 [5/5] COPY . .
144 #9 DONE 0.0s
145
146 #10 exporting to image
147 #10 exporting layers
148 #10 exporting layers 0.6s done
149 #10 writing image sha256:340904752c34e3113cf4e8a047f5b713e0d1b3cf15b32a675037227ac7488f42 dor
150 #10 naming to ***pratheeknodejs:2 done
151 #10 DONE 0.6s
152
153 ##[warning]No data was written into the file /home/vsts/work/_temp/task_outputs/build_175135
154 /usr/bin/docker images
155 /usr/bin/docker push ***pratheeknodejs:2
156 REPOSITORY TAG IMAGE ID CREATED SIZE
157 ***pratheeknodejs 2 340904752c34 1 second ago 174MB
158 node current-alpine 4fb99f685cb9 6 days ago 165
159
160 The push refers to repository [***pratheeknodejs]
161 dc08230d522d: Preparing
162 f9ff03e4a19b: Preparing
163 7e1616a173d: Preparing
```



The screenshot shows the Azure DevOps interface for a build pipeline. The left sidebar contains navigation links: Overview, Boards, Repos, Pipelines (selected), Environments, Library, Test Plans, and Artifacts. The main area displays the 'Jobs in run #202...' for the 'pratheekNodejs' pipeline. The 'Build stage' is expanded, showing a list of jobs: Initialize job (2s), Checkout prat... (2s), Build and pus... (41s), PublishPipeline... (3s), Post-job: Che... (<1s), and Finalize Job (<1s). The 'PublishPipeline...' job is selected, and its logs are displayed on the right. The logs show the upload of pipeline artifacts to the container registry. The total content uploaded is 1.4 KB, and the physical content uploaded is 0.7 KB. The logical content uploaded is 0.9 KB, and the compression saved is 0.2 KB. The deduplication saved is 0.6 KB. The number of chunks uploaded is 3, and the total number of chunks is 5. The associated artifact 1 with build 2 is shown. The application insights telemetry sender will correlate events with X-TFS-Session 4f14f952-4532-4a96-5. The hashtype is Dedup1024K. The dedupmanifestartifactclient will correlate http requests with X-TFS-Session 4f14f952-4532-4a96. The 2 files processed. The processed 2 files from /home/vsts/work/_l/s/manifests successfully. The uploaded 871 out of 871 bytes. The content upload is done. The content upload statistics are shown. The total content is 1.4 KB. The physical content uploaded is 0.7 KB. The logical content uploaded is 0.9 KB. The compression saved is 0.2 KB. The deduplication saved is 0.6 KB. The number of chunks uploaded is 3. The total number of chunks is 5. The associated artifact 1 with build 2 is shown. The application insights telemetry sender will correlate events with X-TFS-Session 4f14f952-4532-4a96-5. The uploading pipeline artifact finished. The finishing: PublishPipelineArtifact.

```
13 ApplicationInsightsTelemetrySender will correlate events with X-TFS-Session 4f14f952-4532-4a96-
14 Hashtype: Dedup1024K
15 DedupManifestArtifactClient will correlate http requests with X-TFS-Session 4f14f952-4532-4a96
16 2 files processed.
17 Processed 2 files from /home/vsts/work/_l/s/manifests successfully.
18 Uploaded 871 out of 871 bytes
19 Content upload is done!
20
21 Content upload statistics:
22 Total Content: 1.4 KB @
23 Physical Content Uploaded: 0.7 KB
24 Logical Content Uploaded: 0.9 KB
25 Compression Saved: 0.2 KB
26 Deduplication Saved: 0.6 KB
27 Number of Chunks Uploaded: 3
28 Total Number of Chunks: 5
29
30 Associated artifact 1 with build 2
31 ApplicationInsightsTelemetrySender correlated 2 events with X-TFS-Session 4f14f952-4532-4a96-5
32 Uploading pipeline artifact finished.
33 Finishing: PublishPipelineArtifact
```



The screenshot shows the Azure DevOps interface for a build pipeline. The left sidebar contains navigation links: Overview, Boards, Repos, Pipelines (selected), Environments, Library, Test Plans, and Artifacts. The main area displays the 'Jobs in run #202...' for the 'pratheekNodejs' pipeline. The 'Build stage' is expanded, showing a list of jobs: Initialize job (2s), Checkout prat... (2s), Build and pus... (41s), PublishPipeline... (3s), Post-job: Che... (<1s), and Finalize Job (<1s). The 'Post-job: Checkout pratheekNodejs@main ...' job is selected, and its logs are displayed on the right. The logs show the checkout process for the main branch of the repository. The task is 'Checkout pratheekNodejs@main to s'. The description is 'Get sources from a repository. Supports Git, TFSVC, and SVN repositories.' The version is 1.0.0. The author is Microsoft. The help is [More Information](https://go.microsoft.com/fwlink/?linkid=788192). The cleaning any cached credential from repository: pratheekNodejs (Git). The finishing: Checkout pratheekNodejs@main to s.

```
1 Starting: Checkout pratheekNodejs@main to s
2 =====
3 Task
4 Description : Get sources from a repository. Supports Git, TFSVC, and SVN repositories.
5 Version : 1.0.0
6 Author : Microsoft
7 Help : [More Information](https://go.microsoft.com/fwlink/?linkid=788192)
8 =====
9 Cleaning any cached credential from repository: pratheekNodejs (Git)
10 Finishing: Checkout pratheekNodejs@main to s
```

B. DEPLOY STAGE

The screenshot shows the Azure DevOps interface for a pipeline run. The left sidebar displays the project structure, including Overview, Boards, Repos, Pipelines, Environments, Library, Test Plans, and Artifacts. The main pane shows the 'Jobs in run #20250701.2' with a list of steps: PublishPipeline... (3s), Post-job: Che... (<1s), Finalize Job (<1s), and the 'Deploy stage' which includes Initialize job (1s), Download Artif... (3s), Create imageP... (1s), Deploy to Ku... (21s), and Finalize Job (<1s). The 'Download Artifact' step is selected, showing its logs. The logs indicate that the artifact was successfully downloaded and the download statistics are displayed.

```
15 ApplicationInsightsTelemetrySender will correlate events with X-TFS-Session 0d03b329-134a-4b7e-4
16 Hashtype: Dedup1024K
17 DedupManifestArtifactClient will correlate http requests with X-TFS-Session 0d03b329-134a-4b7e
18 Start downloading artifact - manifests
19 Minimatch patterns: [**]
20 Filtered 2 files from the Minimatch filters supplied.
21 Downloaded 0.0 MB out of 0.0 MB (0%).
22 Downloaded 0.0 MB out of 0.0 MB (100%).
23
24 Download statistics:
25 Total Content: 0.0 MB
26 Physical Content Downloaded: 0.0 MB
27 Compression Saved: 0.0 MB
28 Local Caching Saved: 0.0 MB
29 Chunks Downloaded: 2
30 Nodes Downloaded: 0
31
32 Download completed.
33 ApplicationInsightsTelemetrySender correlated 2 events with X-TFS-Session 0d03b329-134a-4b7e-4
34 Downloading artifact finished.
35 Finishing: Download Artifact
```

The screenshot shows the Azure DevOps interface for a pipeline run. The left sidebar displays the project structure, including Overview, Boards, Repos, Pipelines, Environments, Library, Test Plans, and Artifacts. The main pane shows the 'Jobs in run #20250701.2' with a list of steps: PublishPipeline... (3s), Post-job: Che... (<1s), Finalize Job (<1s), and the 'Deploy stage' which includes Initialize job (1s), Download Artif... (3s), Create imageP... (1s), Deploy to Ku... (21s), and Finalize Job (<1s). The 'Create imagePullSecret' step is selected, showing its logs. The logs indicate that the secret was successfully created and the command output is displayed.

```
1 Starting: Create imagePullSecret
2 =====
3 Task : Deploy to Kubernetes
4 Description : Use Kubernetes manifest files to deploy to clusters or even bake the manifest fi
5 Version : 0.246.3
6 Author : Microsoft Corporation
7 Help : https://aka.ms/azp-ops-k8s-manifest-tsg
8 =====
9
10 Kubectl Client Version: v1.33.2
11 Kubectl Server Version: v1.31.8
12 =====
13 /usr/bin/kubectl delete secret pratheekacr123131b-auth --namespace default
14 Error from server (NotFound): secrets "pratheekacr123131b-auth" not found
15 /usr/bin/kubectl create secret docker-registry pratheekacr123131b-auth --docker-username *** --
16 secret/pratheekacr123131b-auth created
17 Finishing: Create imagePullSecret
```

The screenshot shows the Azure DevOps interface for a pipeline named 'pratheekNodejs'. The 'Jobs in run #20250701.2' section lists the following steps: PublishPipeline... (3s), Post-job: Che... (<1s), Finalize Job (<1s), Deploy stage (27s), Initialize job (1s), Download Artif... (3s), Create imageP... (1s), Deploy to Ku... (21s), Finalize Job (<1s), and Report build sta... (<1s). The 'Deploy to Kubernetes cluster' stage is currently active, displaying a YAML configuration for a Kubernetes deployment. The configuration includes a 'sessionAffinity' of 'None', a 'type' of 'LoadBalancer', and an 'ingress' with an 'ip' of '135.13.21.141' and 'ipMode' of 'VIP'. The deployment is named 'pratheeknodejs' and is being deployed to a Kubernetes cluster. The raw log for this stage is visible on the right.

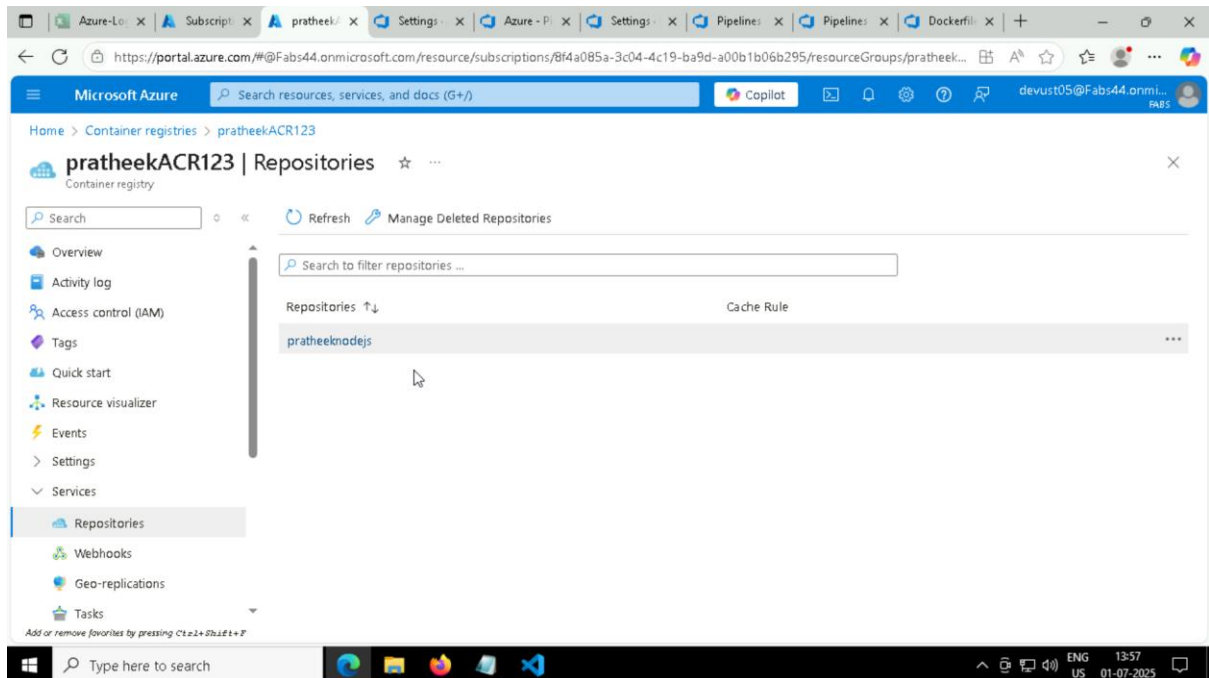
```
59     "sessionAffinity": "None",
60     "type": "LoadBalancer"
61   },
62   "status": {
63     "loadBalancer": {
64       "ingress": [
65         {
66           "ip": "135.13.21.141",
67           "ipMode": "VIP"
68         }
69       ]
70     }
71   }
72 }
73 service pratheeknodejs external IP is 135.13.21.141
74 /usr/bin/kubectl annotate -f /home/vsts/work/_temp/Deployment_pratheeknodejs_1751357678499,/hc
75 deployment.apps/pratheeknodejs annotated
76 service/pratheeknodejs annotated
77 /usr/bin/kubectl annotate pod pratheeknodejs-7b966f48b5-kbnxm azure-pipelines/run=20250701.2
78 pod/pratheeknodejs-7b966f48b5-kbnxm annotated
79 finishing: Deploy to Kubernetes cluster
```

Giving permission for deploy stage:

The screenshot shows the Azure DevOps interface for a pipeline named 'pratheekNodejs'. The 'Summary' tab is selected, showing the pipeline run details. A 'Waiting for review' dialog box is open, displaying the 'Deploy stage' and the 'Permission' needed. The dialog box has a 'Permit' button. The background shows the pipeline run details, including the repository and version, and a warning message: 'No data was written into the file /home/vsts/work/_temp/task_outputs/... Build stage: Build • Build and push an image to container registry'. Another warning message at the bottom states: 'This pipeline needs permission to access a resource before this run can...'

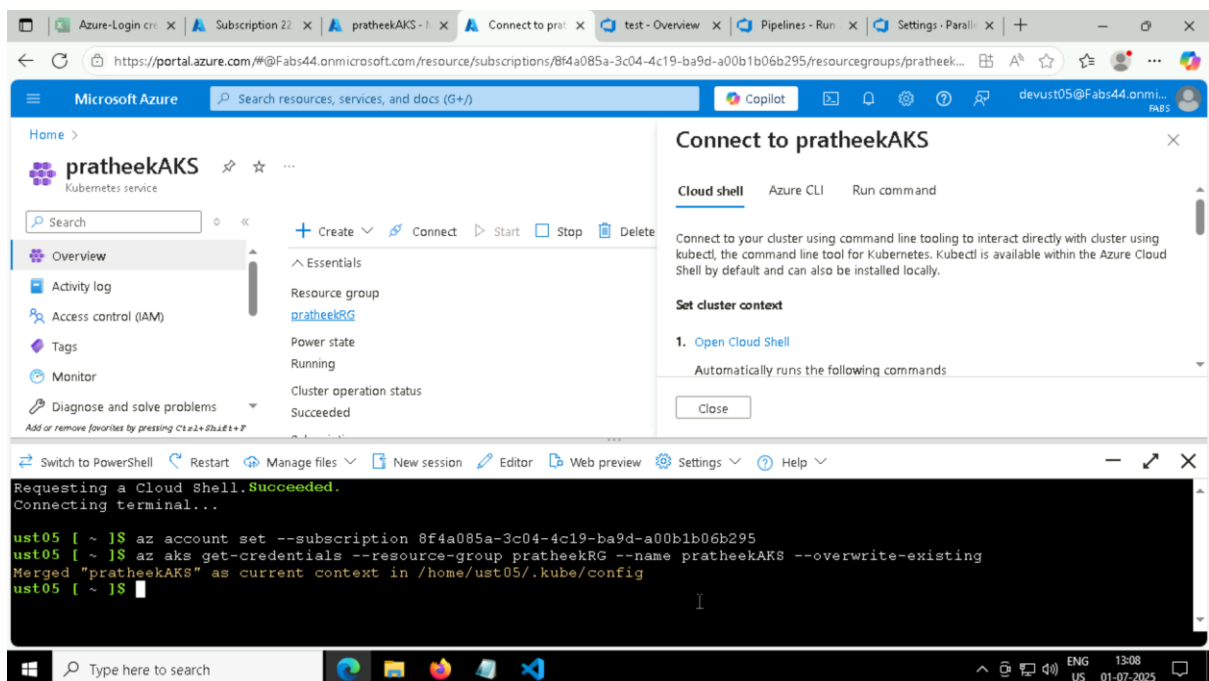
OUTPUT CHECK

Checking ACR for image being pushed:

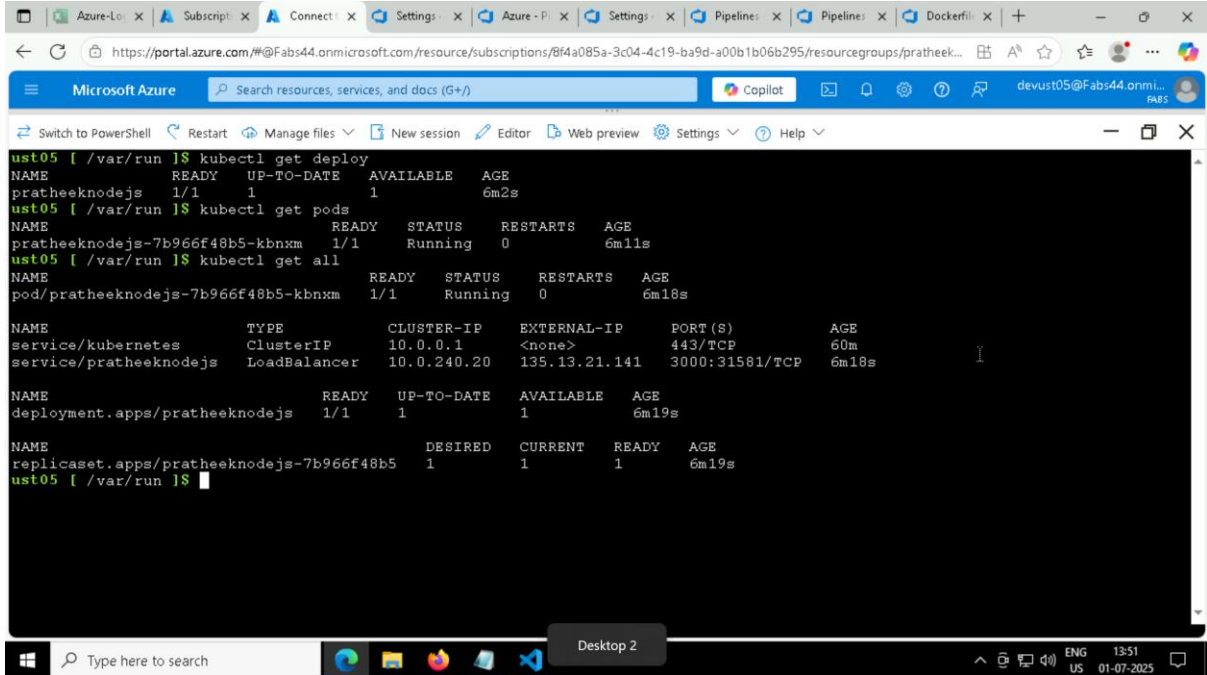


As we can see, my image “pratheeknodejs” is pushed to pratheekACR

Getting into pratheekAKS:



OUTPUT CHECK



The screenshot shows a terminal window with the following output:

```
ust05 [ /var/run ]$ kubectl get deploy
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
pratheenodejs 1/1     1             1           6m2s
ust05 [ /var/run ]$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
pratheenodejs-7b966f48b5-kbnxm 1/1     Running    0           6m11s
ust05 [ /var/run ]$ kubectl get all
NAME          READY   STATUS    RESTARTS   AGE
pod/pratheenodejs-7b966f48b5-kbnxm 1/1     Running    0           6m18s
NAME          TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
service/kubernetes  ClusterIP   10.0.0.1     <none>         443/TCP          60m
service/pratheenodejs  LoadBalancer 10.0.240.20  135.13.21.141 3000:31581/TCP   6m18s
ust05 [ /var/run ]$ kubectl get deployment.apps/pratheenodejs
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/pratheenodejs 1/1     1             1           6m19s
ust05 [ /var/run ]$ kubectl get replicaset.apps/pratheenodejs-7b966f48b5
NAME          DESIRED   CURRENT   READY   AGE
replicaset.apps/pratheenodejs-7b966f48b5 1         1         1       6m19s
ust05 [ /var/run ]$
```

The terminal window is titled "Microsoft Azure" and shows the user "devust05@Fabs44.onmi...". The output indicates that the deployment "pratheenodejs" is successfully running with 1/1 replicas available. The service "pratheenodejs" is also running and exposed on port 3000. The replicaset "replicaset.apps/pratheenodejs-7b966f48b5" is also running with 1/1 replicas available.

And it is successfully deployed into pratheekAKS and pods are running!