

DOTNET CORE-AZURE

MINI PROJECT

Create a **Web API Project** to store Product Information. Use Entity Framework to store the product information in the database. The user should be able to perform all the CRUD Operations. Configure **GET, POST, PUT and DELETE**.

The Product Entity should have the following properties:

- ProductID
- ProductName
- Price
- Brand
- ManufactureDate
- ExpirationDate

Use Data Annotations to

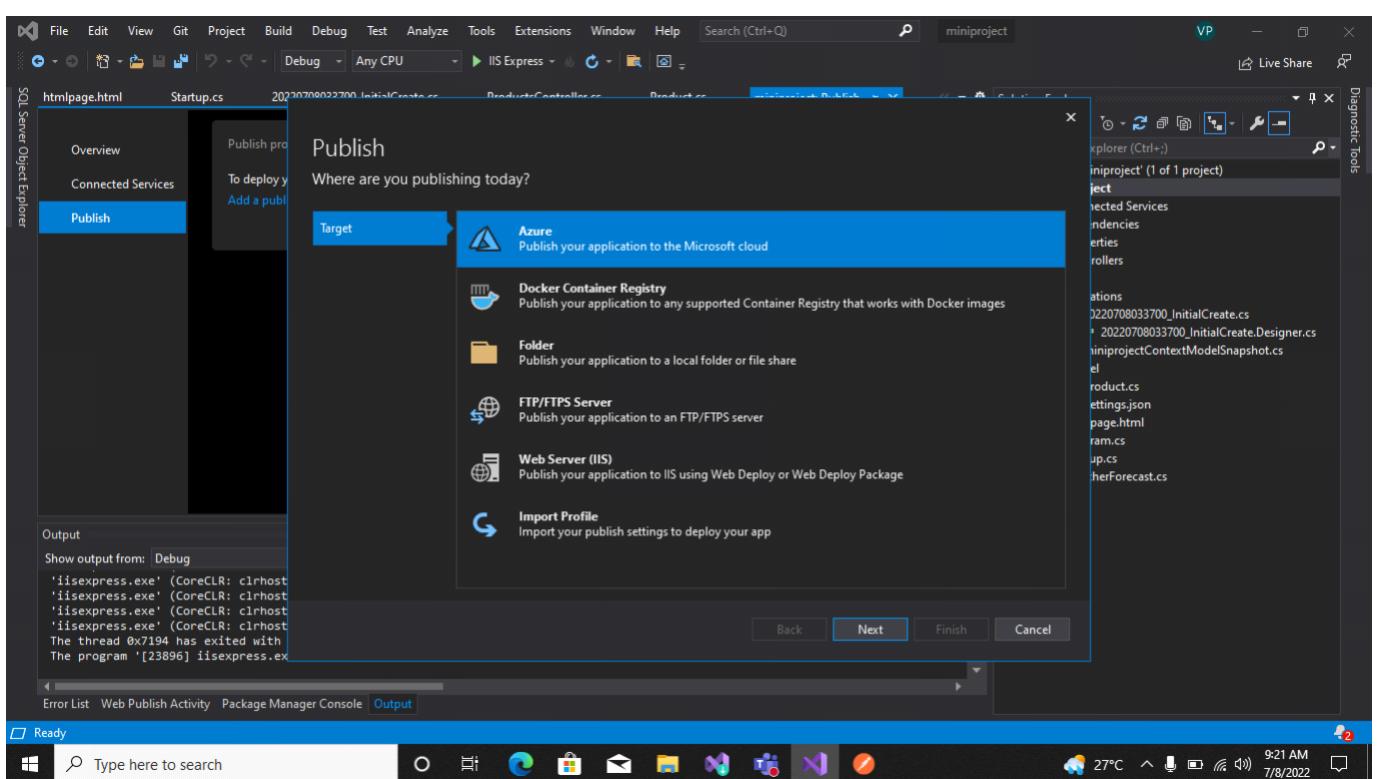
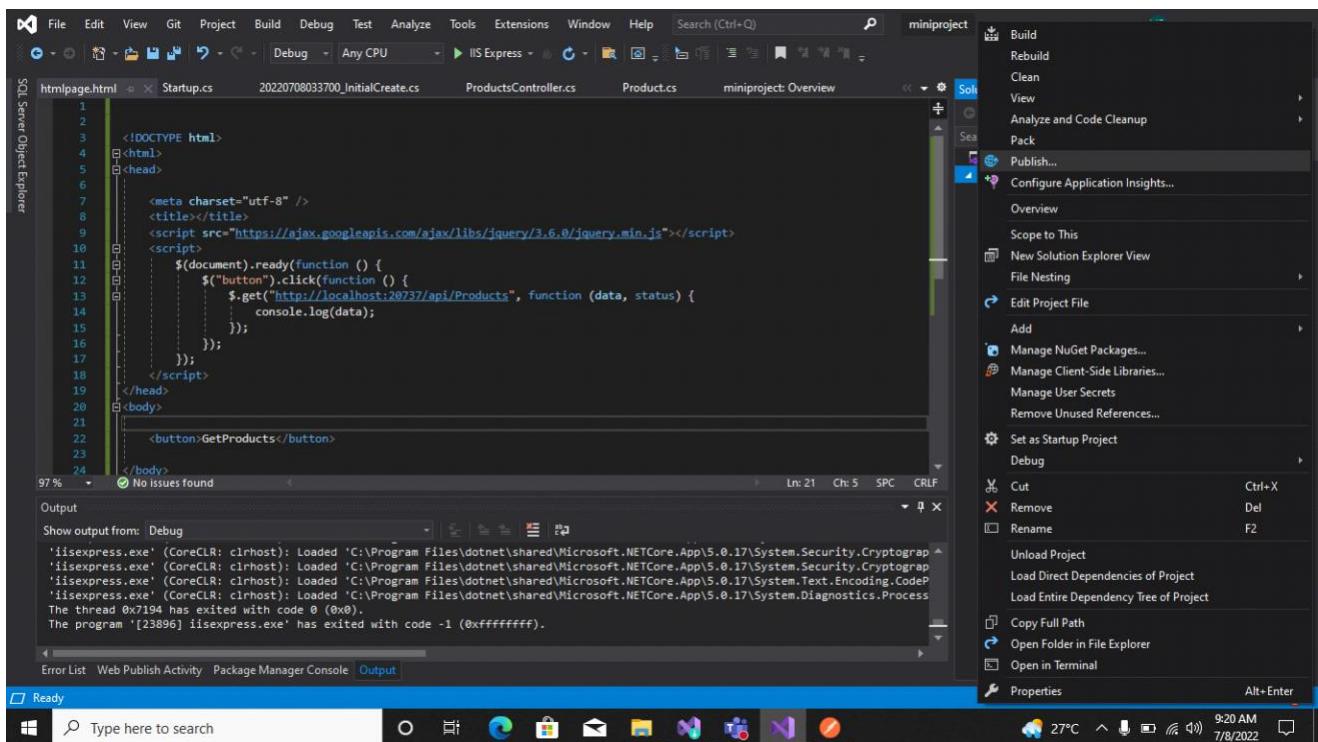
- Mark the Primary Key
- Make ProductName Mandatory
- Make Price a Number

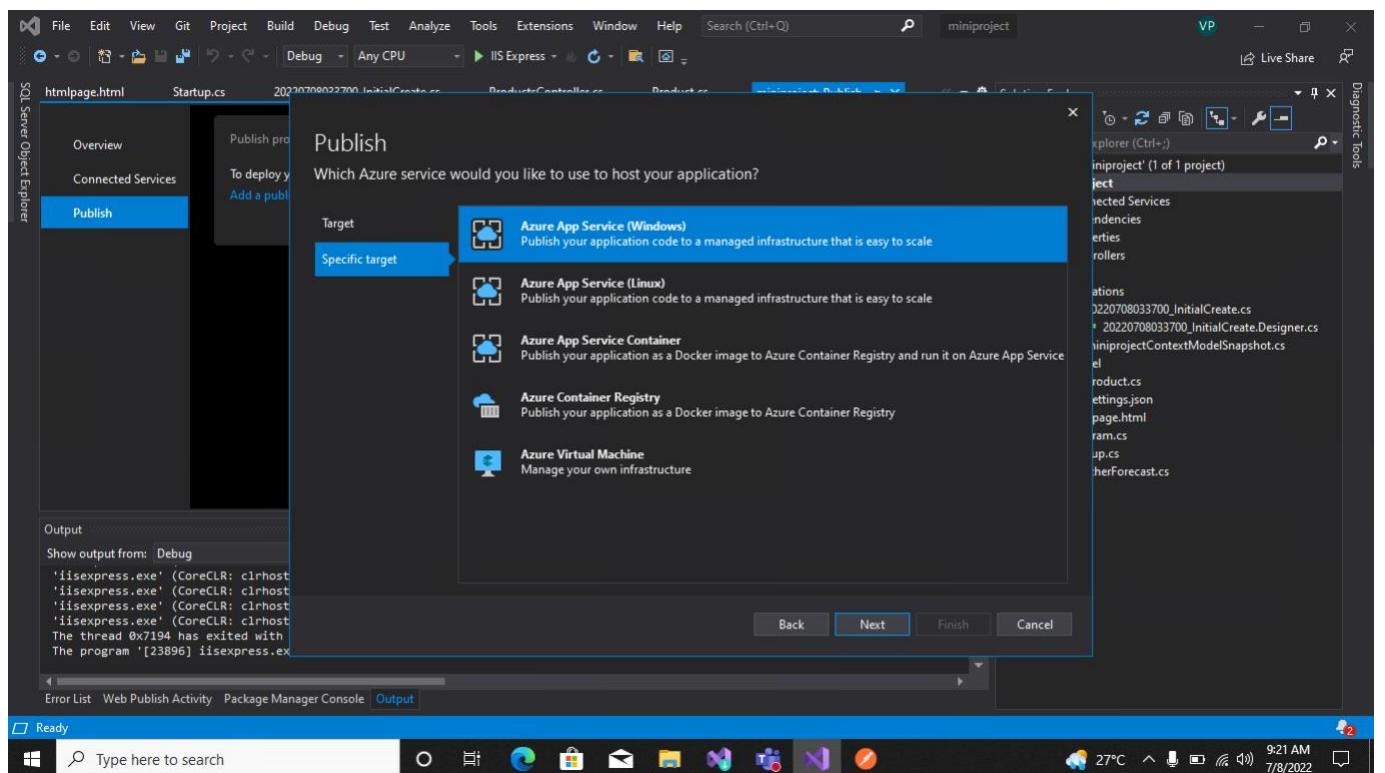
Create a JQuery and AJAX Client to consume the Web API and show the result.

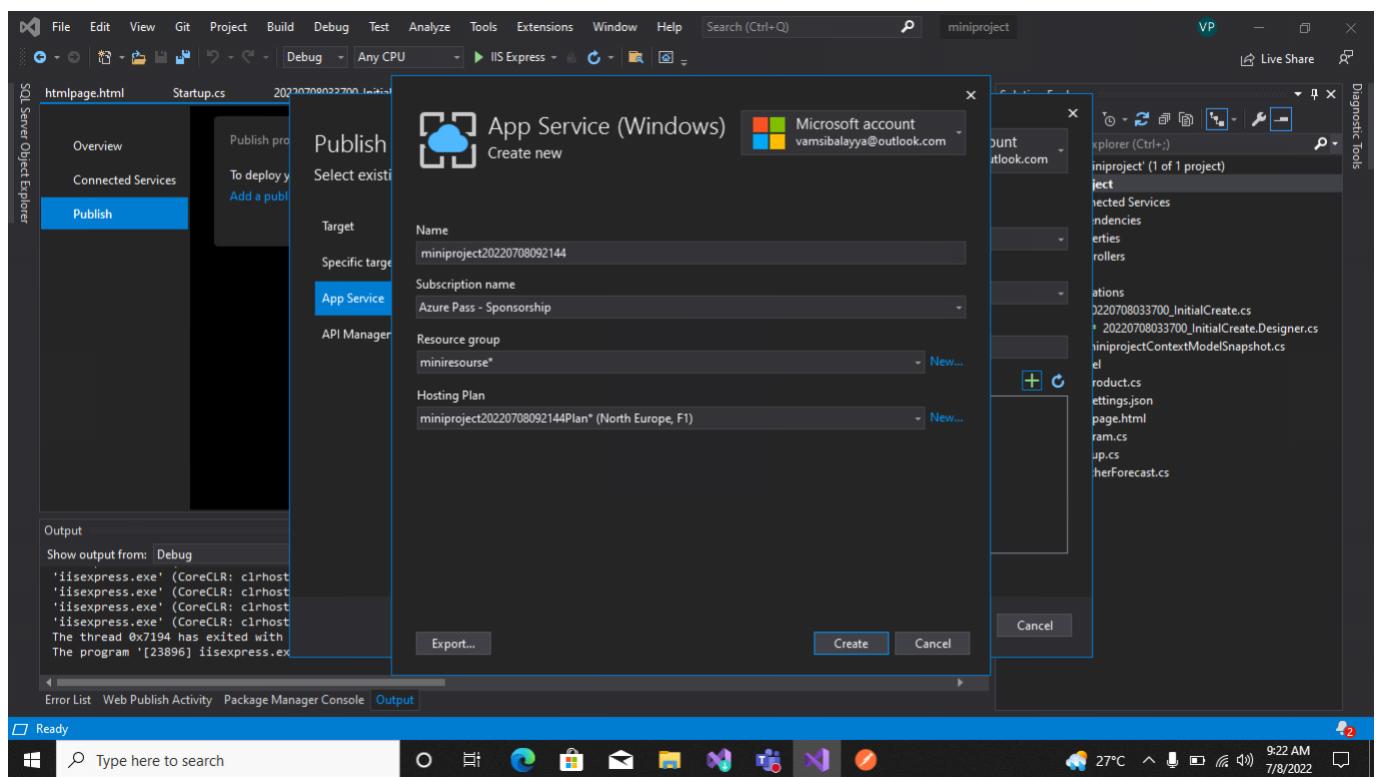
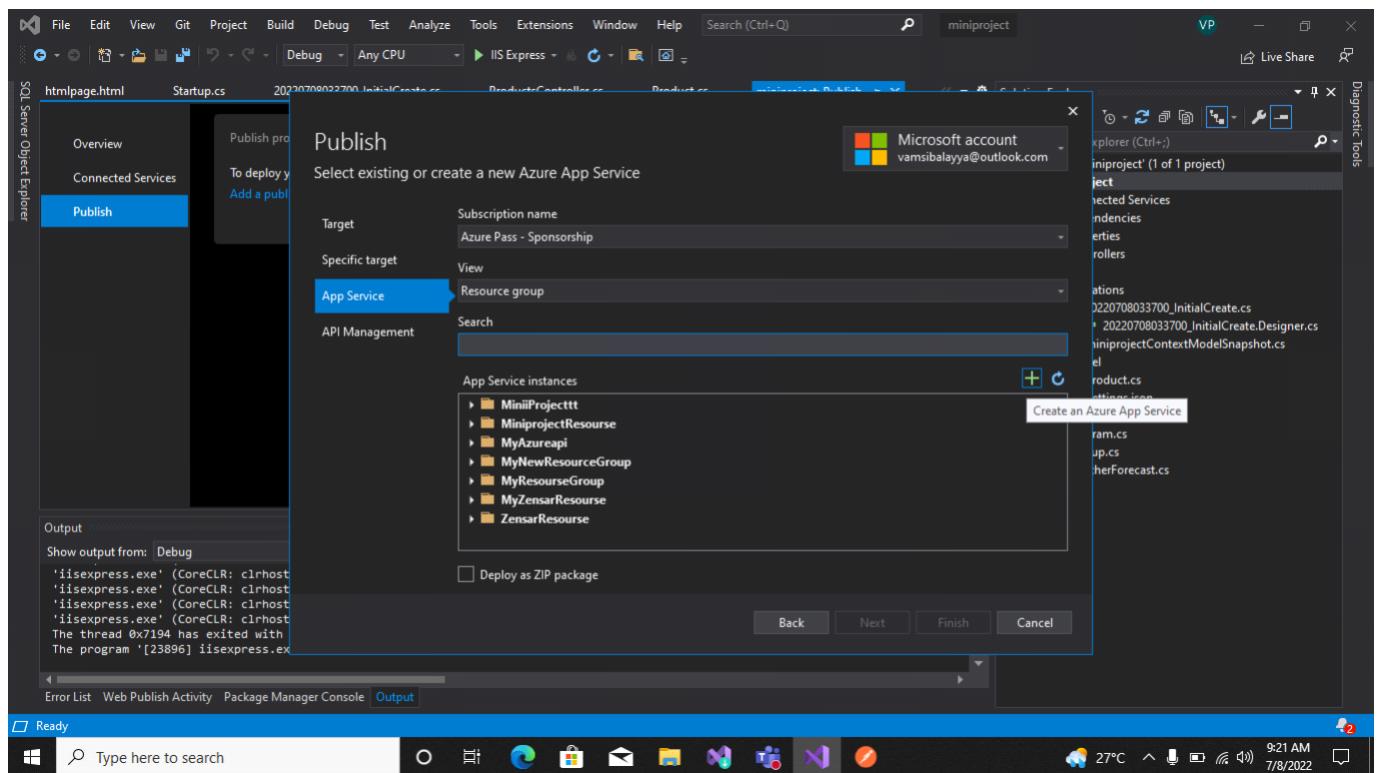
Azure Hosting:

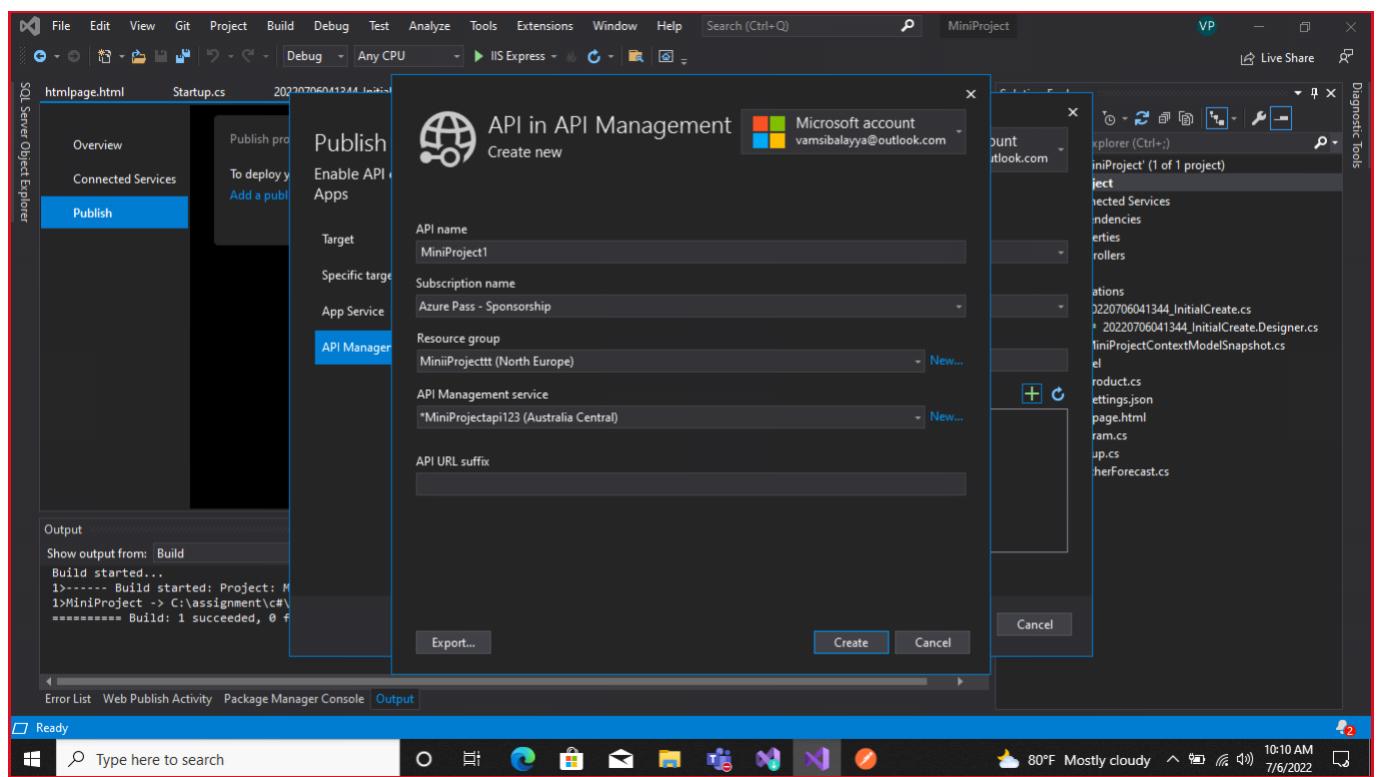
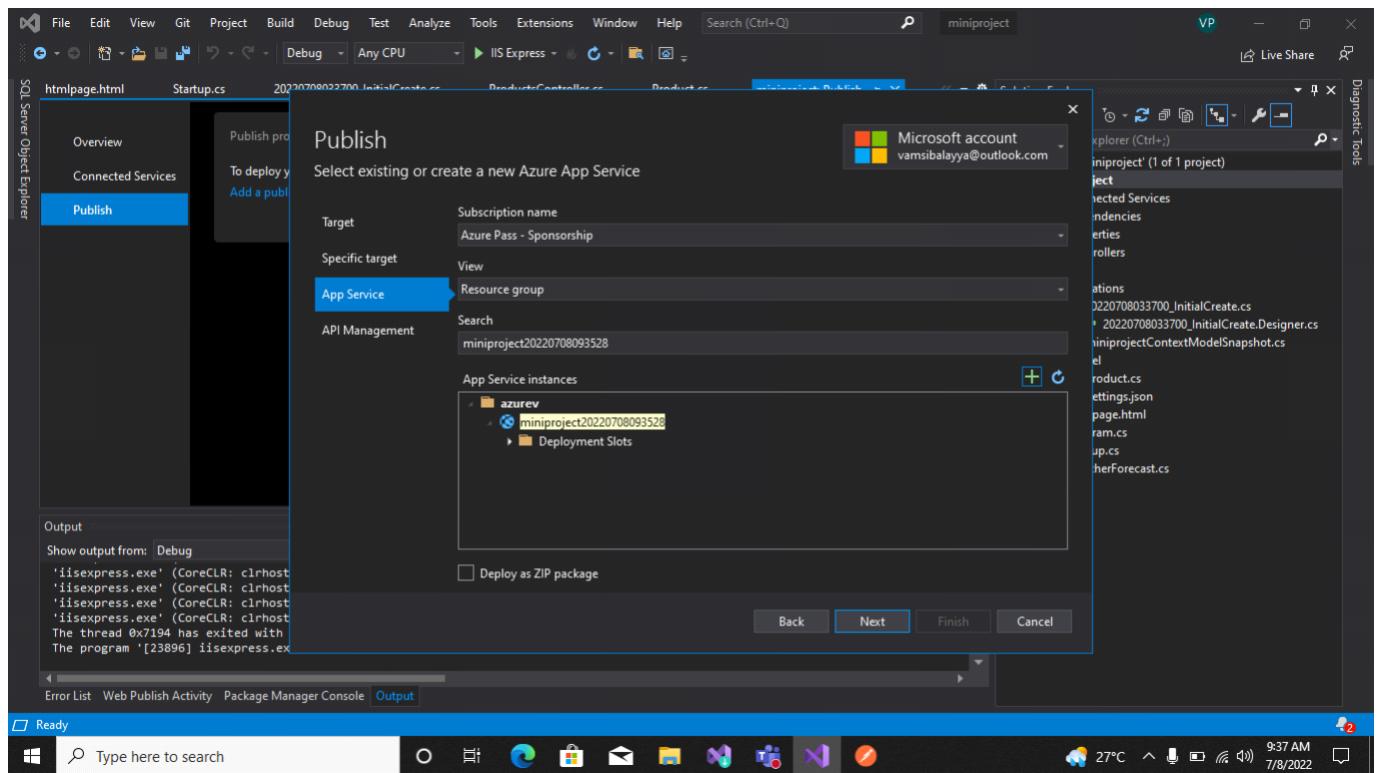
- Host the web api in azure and consume the same using JQuery Client.
- Configure Scale out by adding rules for custom scaling
- Configure Deployment slots for staging and production
- Configure Application Insights for the project
- Configure Swagger for the api
- Work with Log Analytics with the sample logs available

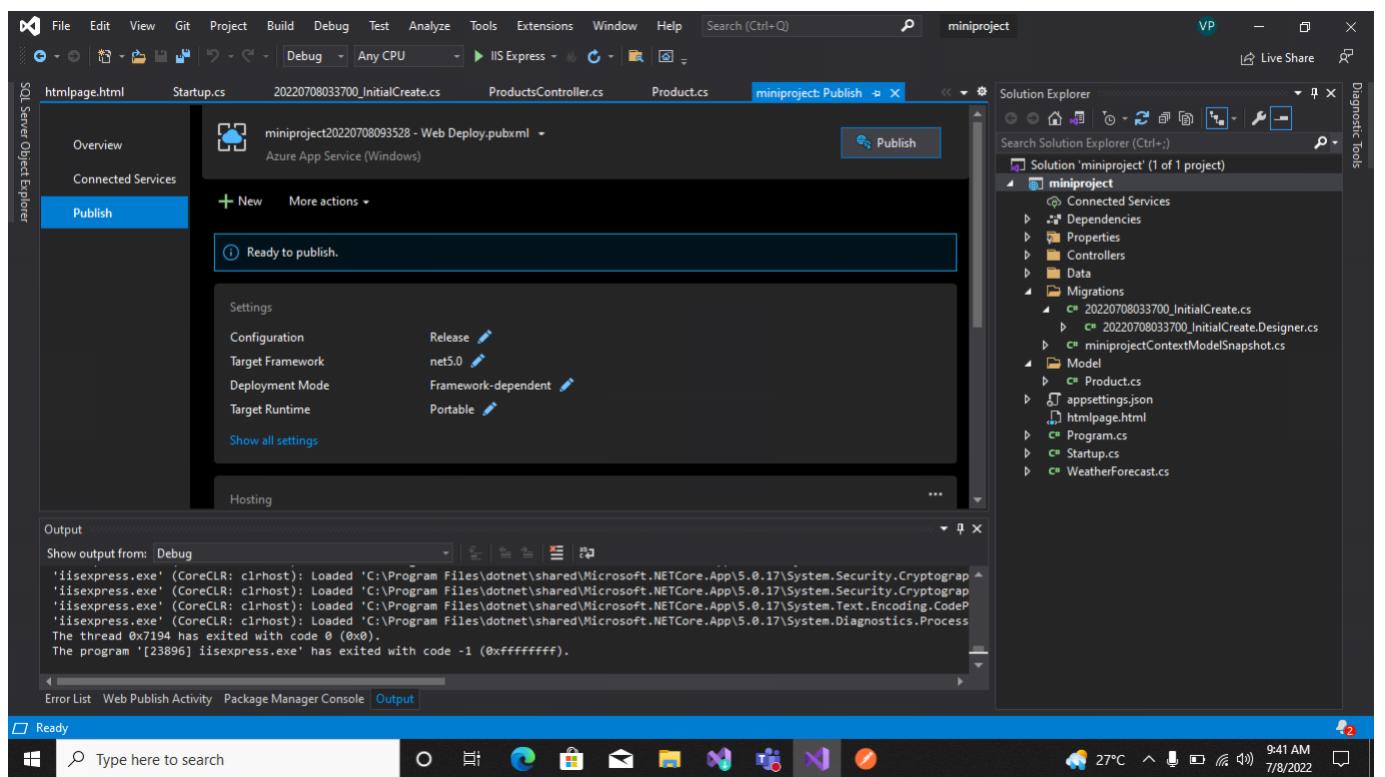
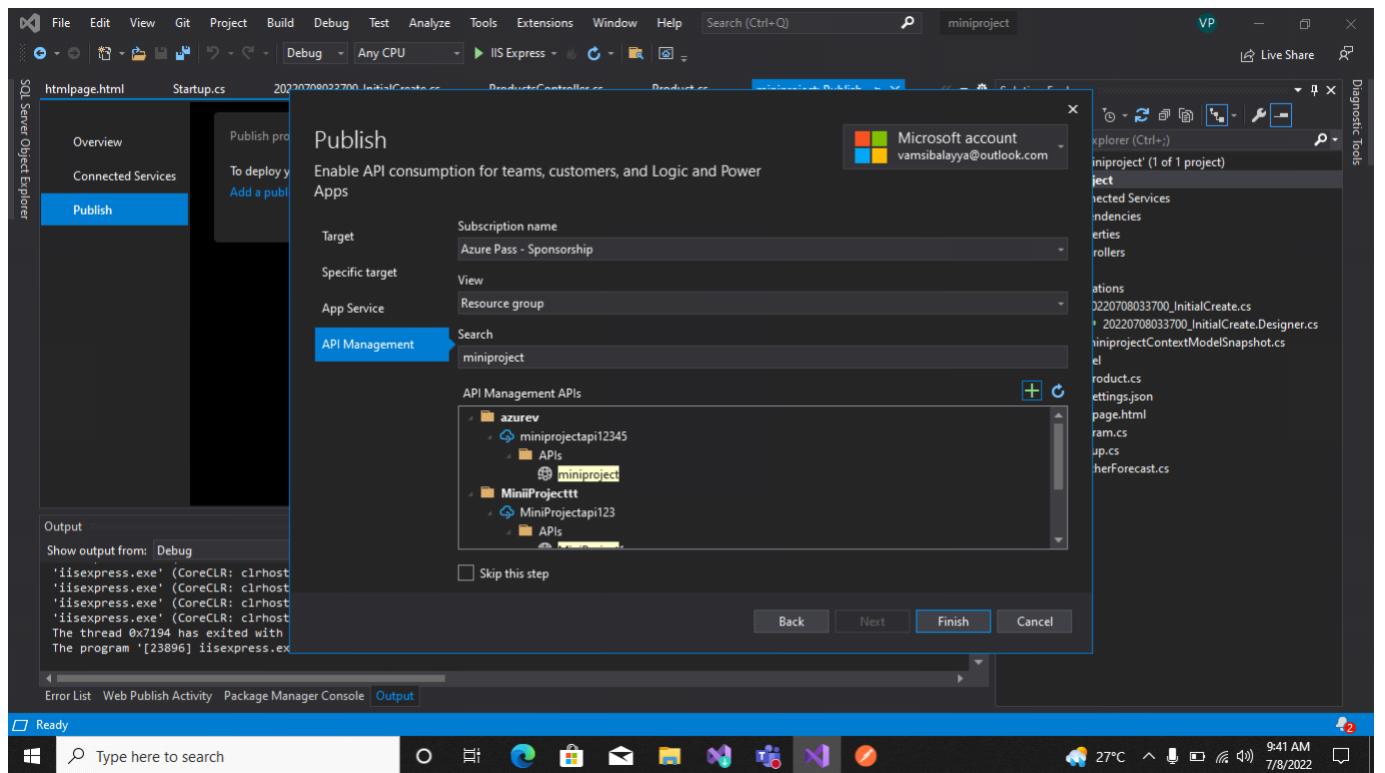
1. host the web API in azure and consume the same using jquery client

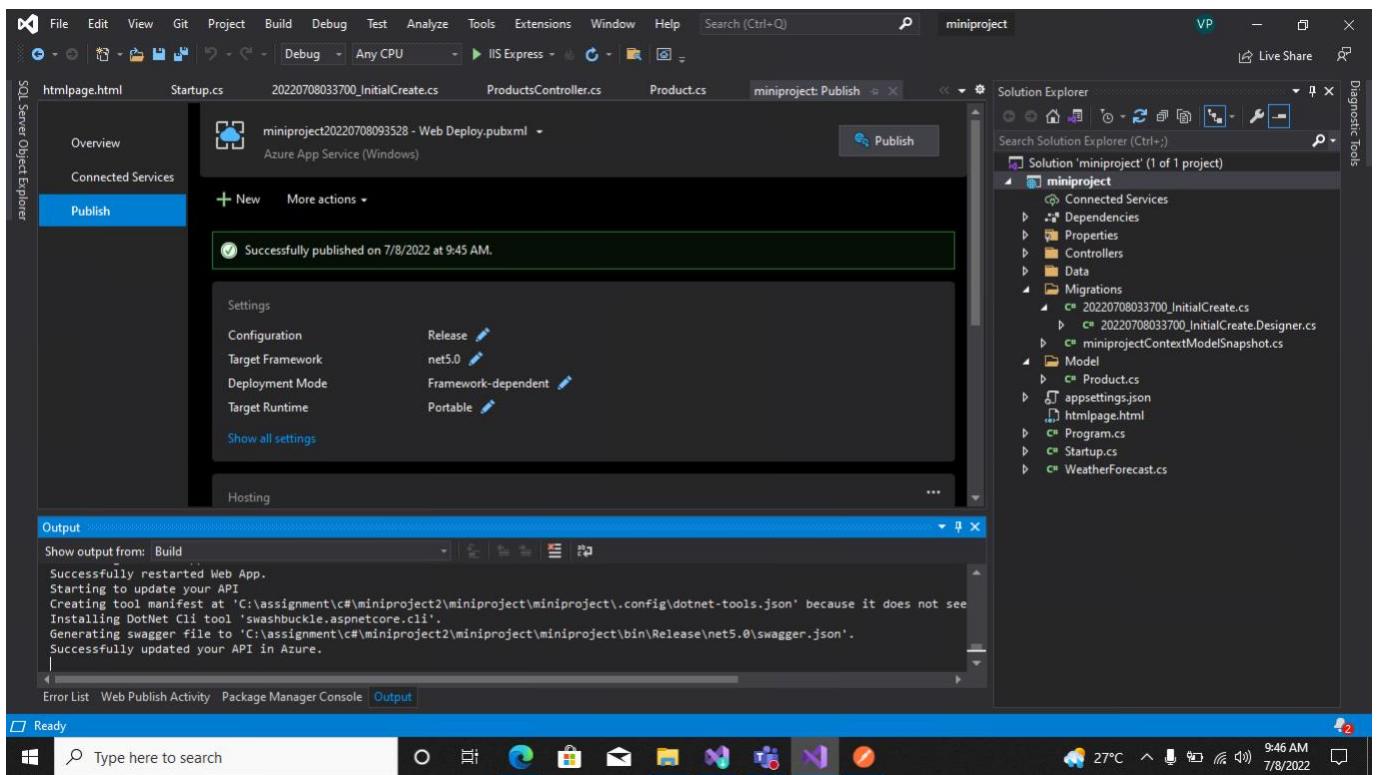


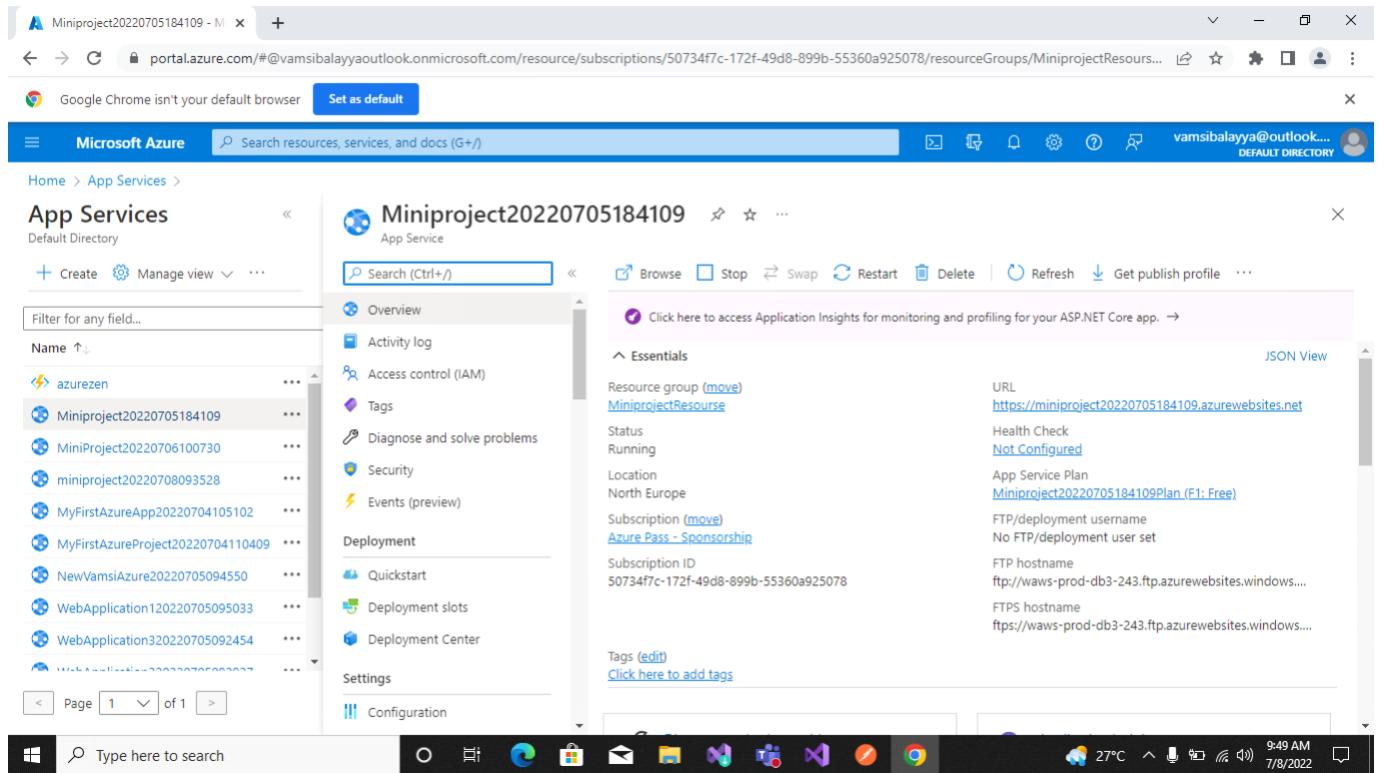












2. Configure Scale out by adding rules for custom scaling

Search and select Autoscale in the search bar

Select Custom Autoscale

In the Rules section of the default scale condition, select Add a rule.

From the Metric source dropdown, select current resource. From Resource

Type, select Application Insights.

From the Resource dropdown, select your App services plan standard metrics.

Select a Metric name to CPU Percentage.

Select Enable metric divide by instance count so that the number of sessions per instance is measured.

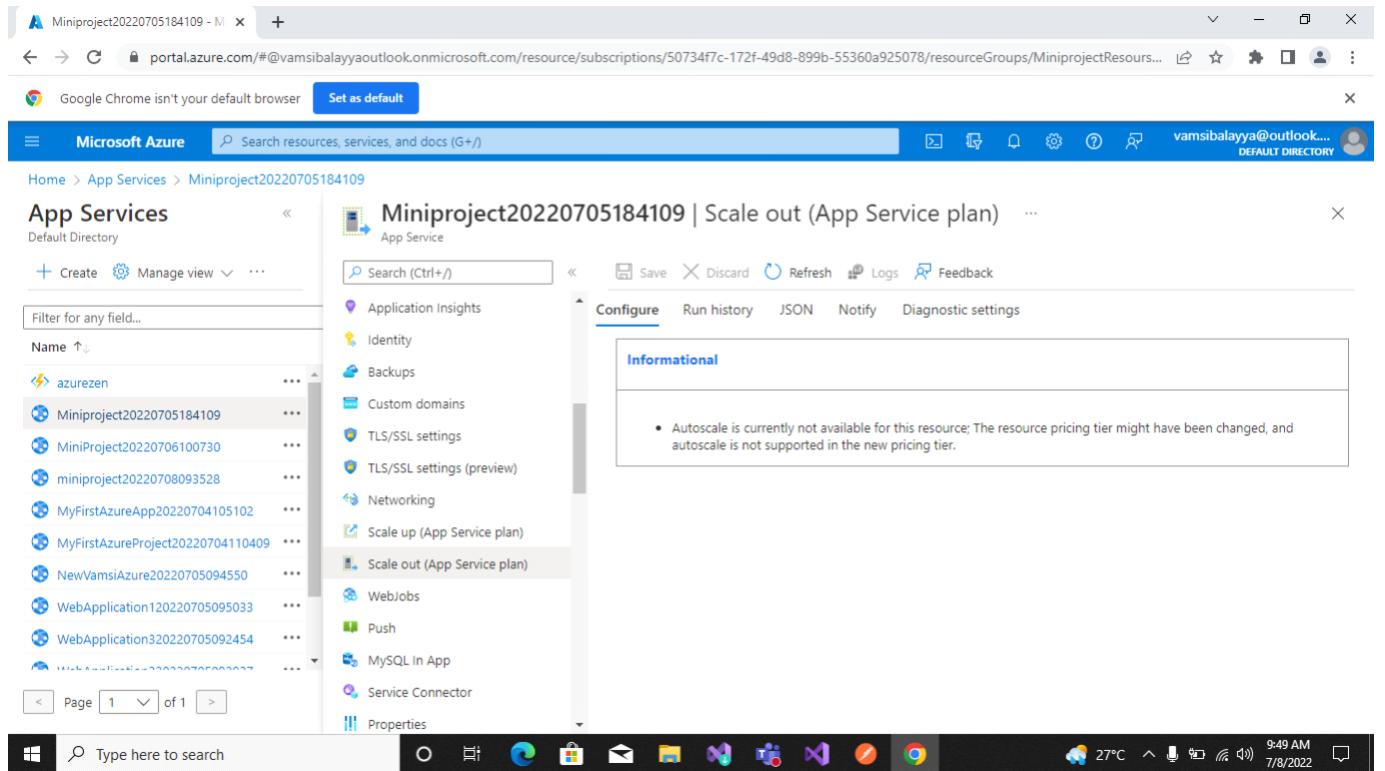
From the Operator dropdown, select Greater than.

Enter the Metric threshold to trigger the scale action, for example, 70.

Under Actions, set the Operation to Increase count and set the Instance count to 1 and Cool down by 5minutes and then click Add.

Set the maximum number of instances that can be spun up in the Maximum field of the Instance limits section for example,

1. Select Save.



3. Configure Deployment Slots For Staging and Production

Azure Functions deployment slots allow your function app to run different instances called "slots". Slots are different environments exposed via a publicly available endpoint. One app instance is always mapped to the production slot, and you can swap instances assigned to a slot on demand. Function apps running under the Apps Service plan may have multiple slots, while under the Consumption plan only one slot is allowed.

Navigate to Deployment slots in the function app, and then select the slot name. Select Configuration, and then select the setting name you want to stick with the current slot.

Select Deployment slot setting, and then select OK.

Once setting section disappears, select Save to keep the changes.

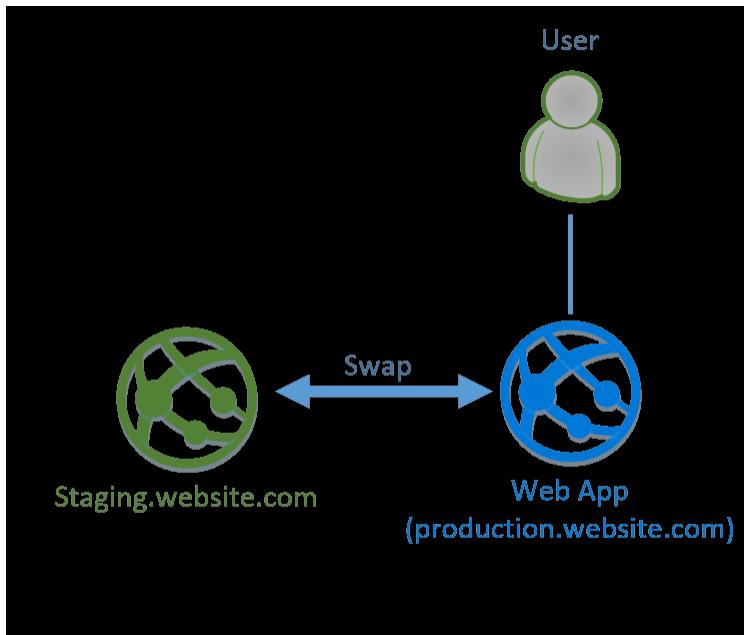
Select Deployment slots, and then select + Add Slot.

Type the name of the slot and select Add.

Select Deployment slots, and then select Swap.

Verify the configuration settings for your swap and select Swap.

The operation may take a moment while the swap operation is executing.



The screenshot shows the Azure portal interface for managing app services. On the left, the 'App Services' blade lists various apps, including 'azuren', 'Miniproject20220705184109', 'MiniProject20220706100730', 'miniproject20220708093528', 'MyFirstAzureApp20220704105102', 'MyFirstAzureProject20220704110409', 'NewVamsiAzure20220705094550', 'WebApplication120220705095033', and 'WebApplication320220705092454'. On the right, the details for 'Miniproject20220705184109' are shown under the 'Deployment slots' tab. A search bar contains 'dep'. Below it, a 'Deployment' section has 'Deployment slots' selected. To the right, there's a note: 'Upgrade to a standard or premium plan to add slots.' with a 'Upgrade' button, and a note: 'Deployment slots are live apps with their own hostnames. App content and configurations elements can be swapped between two deployment slots.' including a 'Learn more' link. The top navigation bar shows the URL as https://portal.azure.com/#@vamsibalayyaoutlook.onmicrosoft.com/resource/subscriptions/50734f7c-172f-49d8-899b-55360a925078/resourceGroups/MiniprojectResou... and the user as vamsibalayya@outlook... DEFAULT DIRECTORY.

4. Configure Application Insights for the project

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Azure logo, a search bar, and a user profile. Below the navigation bar, the main header reads "Miniproject20220705184109 | Application Insights". On the left, there's a sidebar titled "App Services" with a list of app services, including "Miniproject20220705184109". The main content area is titled "Miniproject20220705184109 | Application Insights" and contains sections for "Collect application monitoring data using Application Insights" (with "Enable" and "Disable" buttons), "Link to an Application Insights resource" (with a note about instrumentation key addition), and "Change your resource" (with a "Create new resource" option). A "Apply" button is at the bottom right. The bottom of the screen shows the Windows taskbar with various pinned icons.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Azure logo, a search bar, and a user profile. Below the navigation bar, the main header reads "Miniproject20220705184109". The left sidebar is identical to the previous screenshot, showing the "App Services" list. The main content area is titled "Miniproject20220705184109" and displays an "Overview" section with a link to access Application Insights. It also shows the "Essentials" section, which includes details such as Resource group (MiniprojectResource), URL (<https://miniproject20220705184109.azurewebsites.net>), Status (Running), Location (North Europe), Subscription (Azure Pass - Sponsorship), and Subscription ID (50734f7c-172f-49d8-899b-55360a925078). The bottom of the screen shows the Windows taskbar with various pinned icons.

5. Configure Swagger for the API

Swagger UI allows anyone be it your development team or your end consumers to visualize and interact with the API's resources without having any of the implementation logic in place. It's automatically generated from your Open API (formerly known as Swagger) Specification, with the visual documentation making it easy for back end implementation and client side consumption.

ADVANTAGES :

Dependency Free -The UI works in any development environment, be it locally or in the web

Human Friendly -Allow end developers to effortlessly interact and try out every single operation your API exposes for easy consumption

Easy to Navigate -Quickly find and work with resources and endpoints with neatly categorized documentation

All Browser Support -Cater to every possible scenario with Swagger UI working in all major browsers.

Fully Customizable -Style and tweak your Swagger UI the way you want with full source code access.

Complete OAS Support -Visualize APIs defined in Swagger 2.0 or OAS 3.0

The screenshot shows a Microsoft Edge browser window displaying the Swagger UI for a Petstore API. The URL in the address bar is `https://petstore.swagger.io/?_ga=2.174144162.1259397545.1657258905-1168513033.1657258905#`. The page is organized into sections for different resource types:

- pet**: Everything about your Pets. Contains a POST method for `/store/order` (Place an order for a pet).
- store**: Access to Petstore orders. Contains three methods: POST for `/store/order/{orderId}` (Find purchase order by ID), DELETE for `/store/order/{orderId}` (Delete purchase order by ID), and GET for `/store/inventory` (Returns pet inventories by status).
- user**: Operations about user. Contains seven methods: POST for `/user/createWithArray` (Creates list of users with given input array), POST for `/user/createWithList` (Creates list of users with given input array), GET for `/user/{username}` (Get user by user name), PUT for `/user/{username}` (Updated user), DELETE for `/user/{username}` (Delete user), GET for `/user/login` (Logs user into the system), and GET for `/user/logout` (Logs out current logged in user session).

Each method row includes a description and a small icon indicating the HTTP verb (e.g., green for POST, blue for GET, red for DELETE, orange for PUT). The Swagger UI interface also features a search bar at the bottom left and various navigation and configuration buttons at the top right.

GET

The screenshot shows a browser window with multiple tabs open, including "Logs - Microsoft", "swagger ui - Search", "REST API Document", "Swagger UI", and another "REST API Document". The main content area displays the Swagger UI for a GET request to the endpoint `/pet/findByStatus`. The description is "Finds Pets by status". It specifies that multiple status values can be provided with comma-separated strings. A parameter named "status" is required, with type "array(string)" and example "(query)". Available values are "available", "pending", and "sold", which are listed in a dropdown menu. The "Responses" section shows a successful response (200) with the description "successful operation". An example value is provided as JSON:

```
[{"id": 0, "category": {"id": 0, "name": "string"}, "name": "doggie", "photoUrls": ["string"], "tags": [{"id": 0, "name": "string"}], "status": "available"}]
```

POST

The screenshot shows a browser window with multiple tabs open, including "Logs - Microsoft", "swagger ui - Search", "REST API Document", "Swagger UI", and another "REST API Document". The main content area displays the Swagger UI for a POST request to the endpoint `/pet/uploadFile`. The description is "uploads an image". It has three parameters: "petId" (required, integer, path), "additionalMetadata" (string, form-data), and "file" (file, form-data). The "Responses" section shows a successful response (200) with the description "successful operation". An example value is provided as JSON:

```
{"code": 0, "type": "string", "message": "string"}
```

PUT

The screenshot shows a browser window with multiple tabs open, including "Logs - Microsoft", "swagger ui - Search", "REST API Document", "Swagger UI", and another "REST API Document". The main content area displays the "PUT /pet" endpoint from the Petstore API. The "Parameters" section shows a required "body" parameter of type "object" containing a JSON schema for a pet object. The "Responses" section lists error codes 400, 404, and 405 with their respective descriptions. The status bar at the bottom shows a search bar, taskbar icons, and system information like temperature (26°C) and date/time (7/8/2022).

PUT /pet Update an existing pet

Parameters

Name Description

body **required**
Pet object that needs to be added to the store
Example Value | Model

```
{
  "id": 0,
  "category": {
    "id": 0,
    "name": "string"
  },
  "name": "string",
  "petType": {
    "string"
  },
  "tags": [
    {
      "id": 0,
      "name": "string"
    }
  ],
  "status": "available"
}
```

Parameter content type application/json

Responses

Code Description

400 Invalid ID supplied

404 Pet not found

405 Validation exception

Response content type application/json

DELETE

The screenshot shows a browser window with multiple tabs open, including "Logs - Microsoft", "swagger ui - Search", "REST API Document", "Swagger UI", and another "REST API Document". The main content area displays the "DELETE /pet/{petId}" endpoint from the Petstore API. The "Parameters" section shows required "api_key" (header) and "petId" (path) parameters. The "Responses" section lists error codes 400 and 404 with their respective descriptions. Below the main content, there is a "store" section with a link to "Access to Petstore orders". The status bar at the bottom shows a search bar, taskbar icons, and system information like temperature (26°C) and date/time (7/8/2022).

DELETE /pet/{petId} Deletes a pet in the store with form data

Parameters

Name Description

api_key string (header)

petId **required** integer(\$int64) (path)

Responses

Code Description

400 Invalid ID supplied

404 Pet not found

Response content type application/json

store Access to Petstore orders

POST /store/order Place an order for a pet

Type here to search

6. Work with log analytics with the sample logs available

The screenshot shows the Microsoft Azure Log Analytics interface. A dropdown menu is open under the 'Time range' button, listing various time intervals: Last 30 minutes, Last hour, Last 4 hours, Last 12 hours, Last 24 hours, Last 48 hours, Last 3 days, Last 7 days (which is selected), Set in query, and Custom. The query bar contains the following code:

```
1 ADAssessmentRecommendation | where _ResourceId contains "ab"
```

The screenshot shows the Microsoft Azure Log Analytics interface displaying the results of the query. The results pane shows a message: 'No results found from the last 24 hours. Try selecting another time range.' The query bar contains the same code as the previous screenshot.

The screenshot shows a Microsoft Azure Log Analytics workspace titled "Logs - Demo". A search bar at the top contains the query: `ADASSESSMENTRECOMMENDATION | where _ResourceId contains "ab"`. The results table displays several rows of assessment recommendations, each with columns for TimeGenerated [UTC], AssessmentId, AssessmentName, RecommendationId, Recommendation, and Description. The table has 11 rows. The "Description" column for the first row reads: "Resolve Directory System Agent (DSA) issues that are preve... One or more domain controllers failed to replicate their DSA database." The bottom of the table shows a footer with "4s 472ms | Display time (UTC+00:00)" and "Query details 1 - 11 of 244".

TimeGenerated [UTC]	AssessmentId	AssessmentName	RecommendationId	Recommendation	Description
7/5/2022, 8:52:01.972 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	e1fc9908-1810-455a-97de-5f3578141eb	Resolve Directory System Agent (DSA) issues that are preve...	One or more domain controllers failed to replicate their DSA database.
7/5/2022, 8:52:02.012 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	c5eb7e0c-b86a-438f-9dca-9ff50293dc9	Unless specifically required always enable strict replication c...	Enforcing strict replication on domain controllers.
7/5/2022, 8:52:02.012 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	4aab096c-962a-4d81-9919-0c32af52aa3f	Amend dynamic port configuration on domain controllers.	One or more domain controllers failed to replicate their DSA database.
7/5/2022, 8:52:02.012 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	f676bd73a-79a9-4358-952f-0b0a3c569539	Dynamic Port Range Configuration - Range includes Less T...	Dynamic Port Range Configuration - Range includes Less Than or Equal To.
7/5/2022, 8:52:02.012 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	11d49a22-7ca0-43b7-a1c4-1466cf77169	Amend dynamic port configuration settings on domain controller...	One or more domain controllers failed to replicate their DSA database.
7/5/2022, 8:52:02.012 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	d8640839-78cd-45a1-a942-10b53d923f52	Domain Controllers with a disjoined DNS namespace should...	Domain Controllers running on different DNS namespaces.
7/5/2022, 8:52:02.012 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	4bcc1ca2-4168-4908-b59b-1d1c10e77795	Disable the Allow Replication With Divergent and Corrupt Pe...	One or more domain controllers failed to replicate their DSA database.
7/5/2022, 8:52:02.017 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	aa71fd5-13f7-e485-a426-26494fc09030	Reconfigure our backup jobs to skip locked open files.	It is important to ensure that backup jobs skip locked open files.
7/5/2022, 8:52:02.017 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	4755a453-8431-444a-bc3c-980fa05a0c0e	Resolve issues caused by an unsupported restore procedure.	One or more of your domain controllers failed to replicate their DSA database.
7/5/2022, 8:52:02.017 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	49994c0-0f90-4207-937e-9a8d4040ff94	Investigate why a Virtualized Domain Controller (VDC) failed...	One or more VDCs failed to replicate their DSA database.
7/5/2022, 8:52:02.017 PM	ac0b6527-3e41-4997-90a8-77f7a9c07cc0	AD	4f920-164-4174-4774-4720-000000000000	Investigate why a Virtualized Domain Controller (VDC) failed...	One or more VDCs failed to replicate their DSA database.