

Web API Interview Questions and Answers

What is Web API?

Web API is a framework which helps to build or develop HTTP services.

What are the characteristics of ASP.NET Web API

1. ASP.NET Web API is an ideal platform for building RESTful services.
2. ASP.NET Web API is built on top of ASP.NET and supports ASP.NET request/response pipeline
3. ASP.NET Web API maps HTTP verbs to method names.
4. ASP.NET Web API supports different formats of response data. Built-in support for JSON, XML, BSON format.
5. ASP.NET Web API can be hosted in IIS, Self-hosted or other web server that supports .NET 4.0+.
6. ASP.NET Web API framework includes new HttpClient to communicate with Web API server. HttpClient can be used in ASP.MVC server side, Windows Form application, Console application or other apps.

What is Rest?

1. REST stands for Representational state transfer.
2. It is an architectural style, which defines rules for creating scalable services.
3. REST is works on HTTP protocol using its verbs GET, POST, PUT and DELETE.

What are the advantages of using rest in web API?

1. REST used to make less data transfers between client and server.
2. Web API supports HTTP protocol verbs for communication.

We can implement rest with WCF also then why do we need web API?

1. WCF was brought in to implement SOA, never the intention was to implement REST.
2. Web API is built from Scratch and the only goal is to create HTTP services using REST.

What Are the Advantages Using Web API?

1. OData support (via Queryable attribute)
2. Content Negotiation.
3. Filters.
4. Model binding and validation.
5. Ability to self-host outside of IIS.
6. Link generation to related resources that incorporates routing rules
7. Full support for routing and attribute routing.
8. Ability to create custom help and test pages using ApiExplorer.
9. Model Bindings.

When to choose ASP.NET Web API?

- Choose Web API if you are using .NET framework 4.0 or above.
- Choose Web API if you want to build a service that supports only HTTP protocol.
- Choose Web API to build RESTful HTTP based services.
- Choose Web API if you are familiar with ASP.NET MVC.

What are the different between MVC controller and Web API controller?

MVC Controller

- MVC controller derived from System.Web.Mvc.Controller class.
- MVC controller must apply appropriate Http verb attribute.
- Specialized in rendering view.
- Returns ActionResult or any derived type.
- Requires .NET 3.5 or above

Web API Controller

- Web API controller derived from System.Web.Http.ApiController class.
- Method name must start with Http verbs otherwise apply http verbs attribute.
- Specialized in returning data.
- Return data automatically formatted based on Accept-Type header attribute.
Default to json or xml.
- Requires .NET 4.0 or above

Which protocol Web API supports?

Web App supports HTTP protocol.

Which .NET framework supports Web API?

NET 4.0 and above version supports web API.

What New Features comes with ASP.NET Web API 2.0?

The latest features of ASP.NET Web API framework v2.0 are as follows:

- Attribute Routing
- Cross-Origin Resource Sharing
- External Authentication
- Open Web Interface
- NET IHttpActionResultResult
- Web API OData

What are main return types supported in Web API?

A Web API controller action can return following values:

1. Void: It will return empty content.
2. HttpResponseMessage: It will convert the response to an HTTP message.
3. IHttpActionResultResult: internally calls ExecuteAsync to create an HttpResponseMessage
4. Other types: You can write the serialized return value into the response body

Is it right that ASP.NET Web API has replaced WCF?

It's a not at all true that ASP.NET Web API has replaced WCF. In fact, it is another way of building non-SOAP based services, i.e., plain XML or JSON string.

Why is Web API required? Is it possible to use RESTful services using WCF?

Yes, we can still develop RESTful services with WCF. However, there are two main reasons that prompt users to use Web API instead of RESTful services.

1. Web API increases TDD (Test Data Driven) approach in the development of RESTful services.
2. If we want to develop RESTful services in WCF, you surely need a lot of config settings, URI templates, contracts & endpoints for developing RESTful services using web API.

Web API uses which library for JSON serialization?

Web API uses Json.NET library for JSON serialization.

Which status code by default, Web API sends HTTP response for exception?

500 – Internal Server Error

What is the biggest disadvantage of “Other Return Types” in Web API?

The biggest disadvantage of this approach is that you cannot directly return an error code like 404 error.

What is Web API Routing?

Routing is pattern matching like in MVC. All routes are registered in Route Tables.

```
public static class WebApiConfig
{
    public static void Register(HttpConfiguration config)
    {
        // Web API configuration and services

        // Web API routes
        config.MapHttpAttributeRoutes();

        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );
    }
}
```

How to you can limit Access to Web API to Specific HTTP Verb?

Attribute programming plays an important role. It is easy to restrict access to an ASP.NET Web API method to be called using a particular HTTP method.

Can you use Web API with ASP.NET Web Form?

Yes, it is possible to use Web API with ASP.Net web form. As it is bundled with ASP.NET MVC framework. However, it can be used with ASP.NET Web Form.

What is the meaning of TestApi?

TestApi is a utility library of APIs. Using this library tester developer can create testing tools and automated tests for a .NET application using data-structure and algorithms.

Explain exception filters?

It will be executed when exceptions are unhandled and thrown from a controller method. The reason for the exception can be anything. Exception filters will implement “IExceptionFilter” interface.

How you can return View from ASP.NET Web API method?

No, we can't return a view from ASP.NET Web API Method. Web API creates HTTP services that render raw data. However, it's also possible in ASP.NET MVC application.

Explain what is REST and RESTFUL?

REST represents Representational State Transfer; it is entirely a new aspect of writing a web app. RESTFUL: It is term written by applying REST architectural concepts is called RESTful services. It focuses on system resources and how the state of the resource should be transported over HTTP protocol.

How can you handle errors in Web API?

Several classes are available in Web API to handle errors. They are `HttpError`, `Exception Filters`, `HttpResponseException`, and `Registering Exception Filters`.

How to unit test Web API?

We can perform a Unit test using Web API tools like Fiddler. Here, are some setting to be done if you are using Fiddler –Compose Tab -> Enter Request Headers -> Enter the Request Body and execute

Who can consume Web API?

Web API can be consumed by any client which supports HTTP verbs such as GET, PUT, DELETE, POST. As Web API services don't need any configuration, they are very easy to consume by any client. In fact, even portable devices like Mobile devices can easily consume Web API which is certainly the biggest advantages of this technology.

How can we make sure that Web API returns JSON data only?

To make Web API serialize the returning object to JSON format and returns JSON data only. For that you should add the following code in `WebApiConfig.cs` class in any MVC Web

```
using System.Net.Http.Headers;

config.Formatters.JsonFormatter.SupportedMediaTypes.Add(new
MediaTypeHeaderValue("application/json"));
```

How can we register exception filter globally?

We can register exception filter globally using following code:

```
GlobalConfiguration.Configuration.Filters.Add(new
MyTestCustomerStore.NotImplExceptionFilterAttribute());
```