# ASP.NET WEB API: HTTP MESSAGE LIFECYLE

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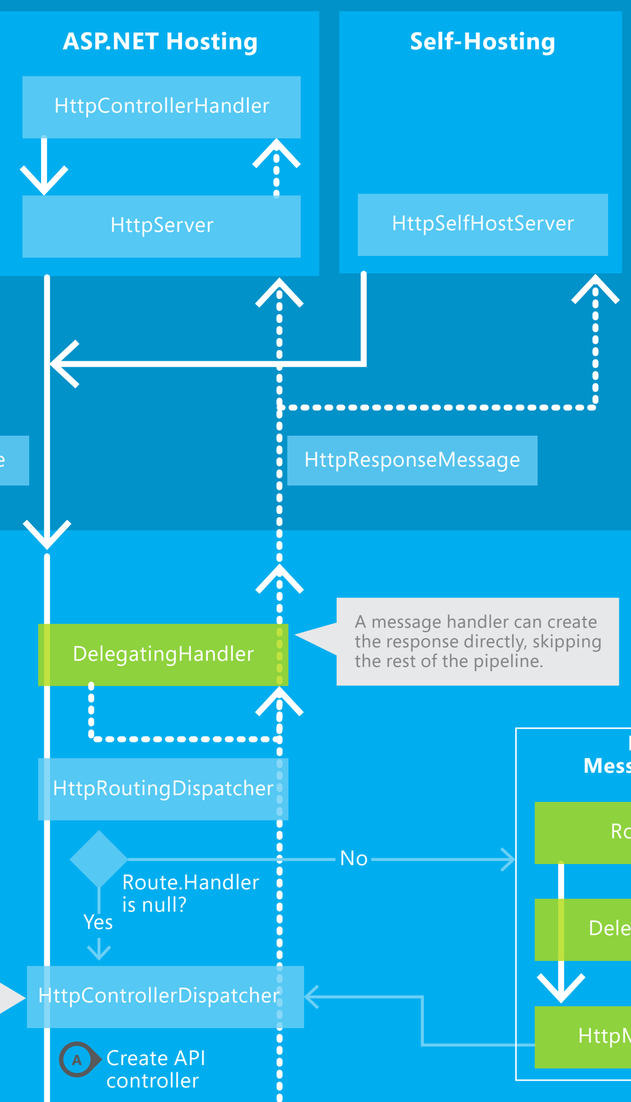
You can host Web API within an ASP.NET application, or inside your own process (self-hosting). After the initial entry point, the HTTP messages go through the same pipeline. The HTTP request message is first converted to an HttpRequestMessage object, which provides strongly typed access to the HTTP message.



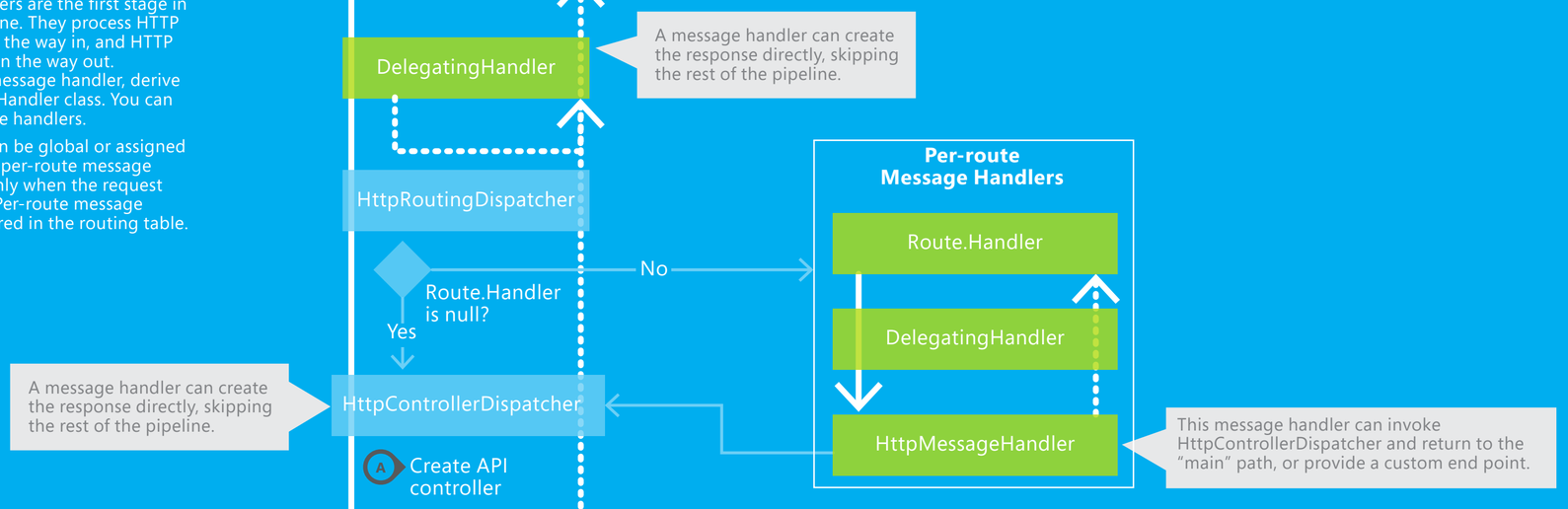

ASP.NET Web API is a framework that makes it easy to build HTTP services that reach a broad range of clients, including browsers and mobile devices. It is an ideal platform for building RESTful applications on the .NET Framework.

This poster shows how an HTTP request flows through the Web API pipeline, and how the HTTP response flows back. The diagram also shows extensibility points, where you can add custom code or even replace the default behavior entirely. You can find documentation and tutorials for ASP.NET Web API at http://www.asp.net/web-api.

## HTTP Message Handlers

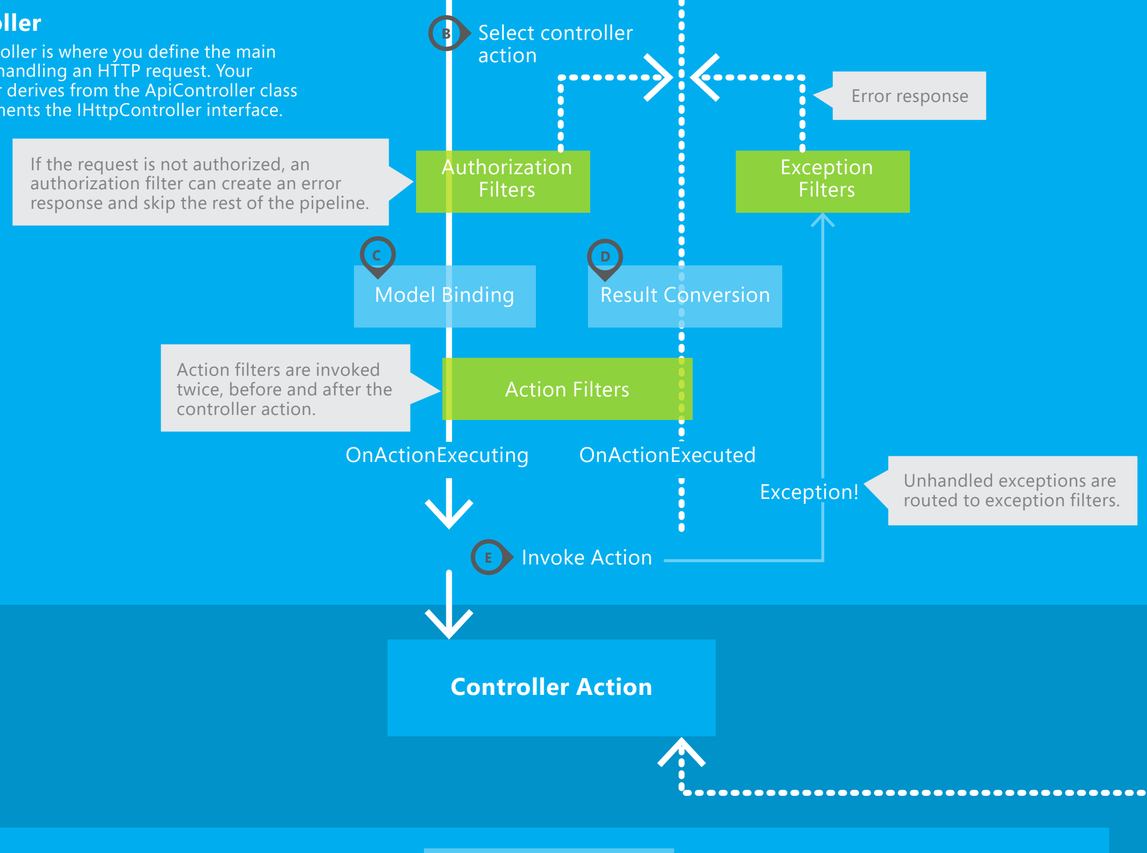
HTTP message handlers are the first stage in the processing pipeline. They process HTTP request messages on the way in, and HTTP response messages on the way out.
To create a custom message handler, derive from the DelegatingHandler class. You can add multiple message handlers.

Message handlers can be global or assigned to a specific route. A per-route message handler is invoked only when the request matches that route. Per-route message handlers are configured in the routing table.




## Controller

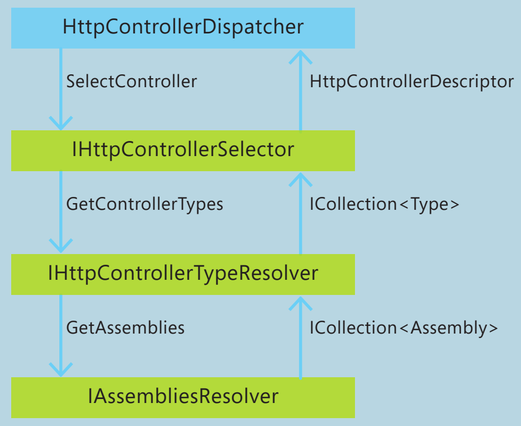
The controller is where you define the main logic for handling an HTTP request. Your controller derives from the ApiController class or implements the IHttpController interface.



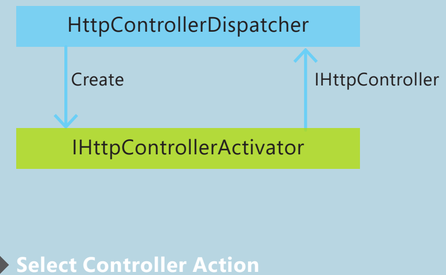

### A Create Controller

Create an API controller based on the request.

1. Select controller type

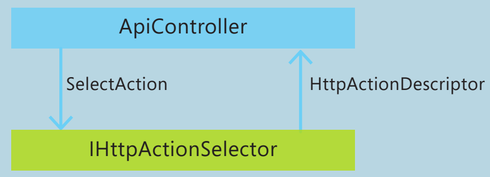



2. Activate controller



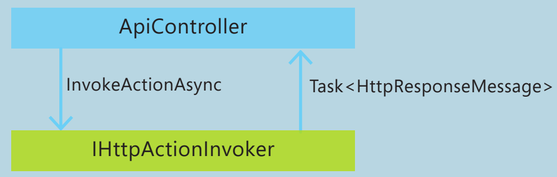

### B Select Controller Action

Select an action based on the request.




### E Invoke Controller Action

Invoke controller action, using HttpActionContext for bindings and model state.

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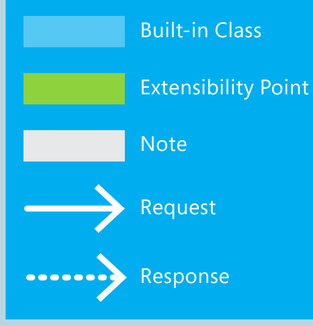
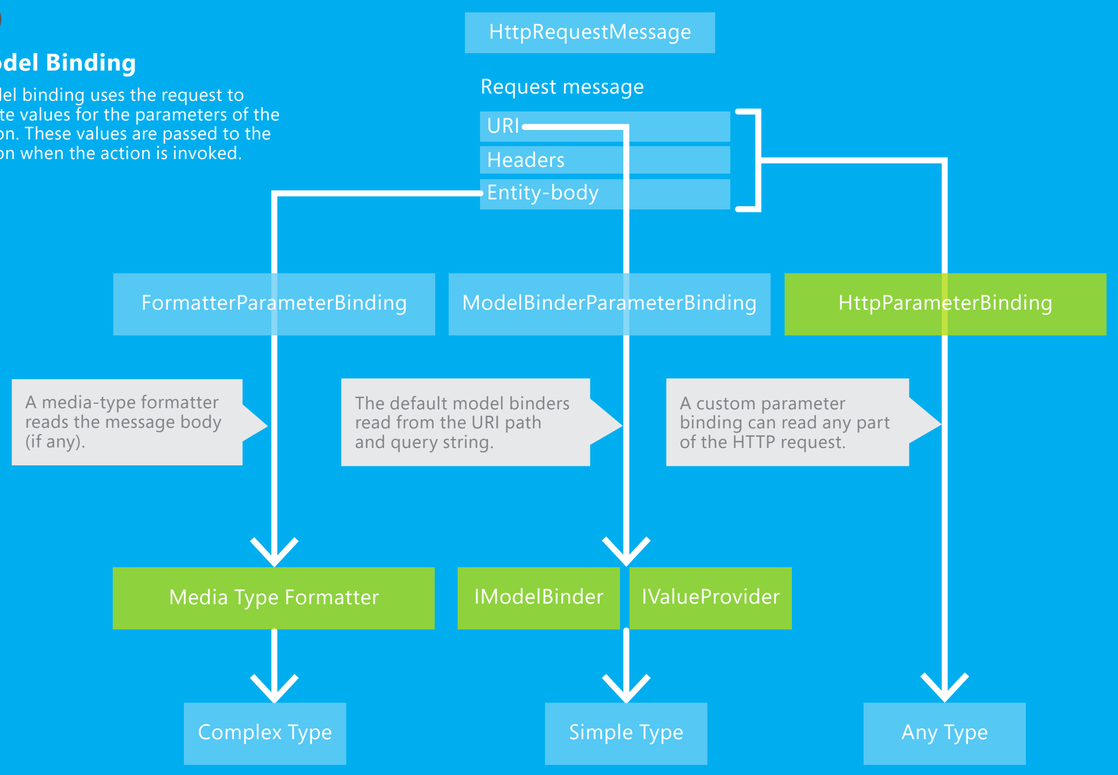



### C Model Binding

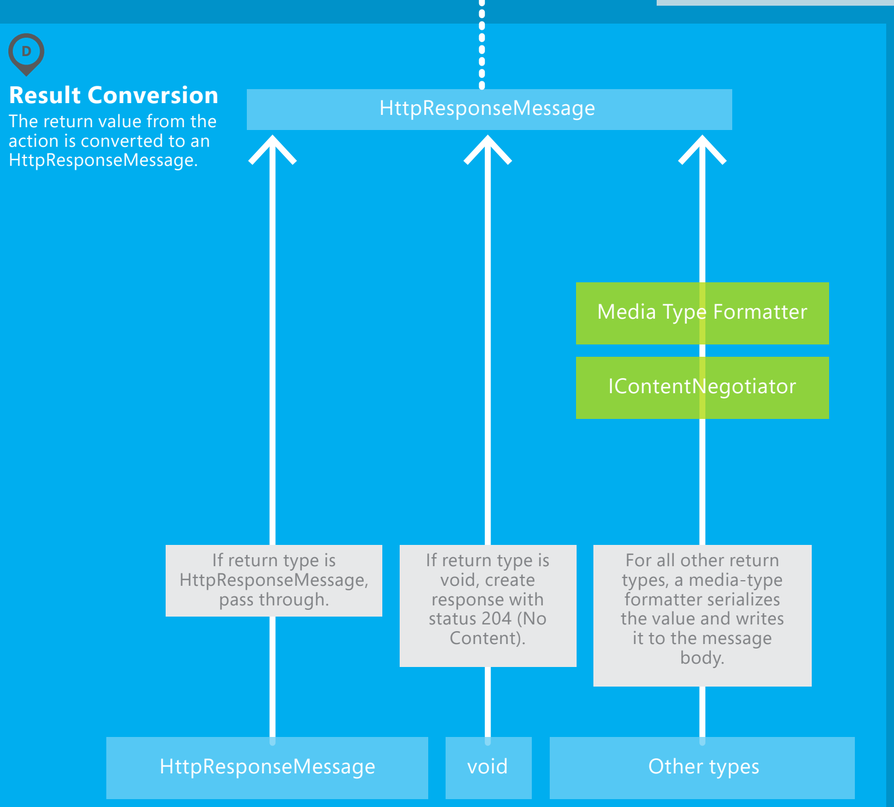
Model binding uses the request to create values for the parameters of the action. These values are passed to the action when the action is invoked.




Action parameters

### D Result Conversion

The return value from the action is converted to an HttpResponseMessage.




Action return value

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