WEB DAY 2021

04 MARZO • ONLINE CONFERENCE

ASP.NET CORE SIGNALR, APPLICAZIONI REAL-TIME NEL BROWSER...ED OLTRE

ENOS RECANATI
MANAGED DESIGNS
@ENOSRECANATI

WEB DAY 2021

KUDOS

SPONSOR

tag Talent Garden

managed/designs

PARTNER

ACCESSIBILITY DAYS

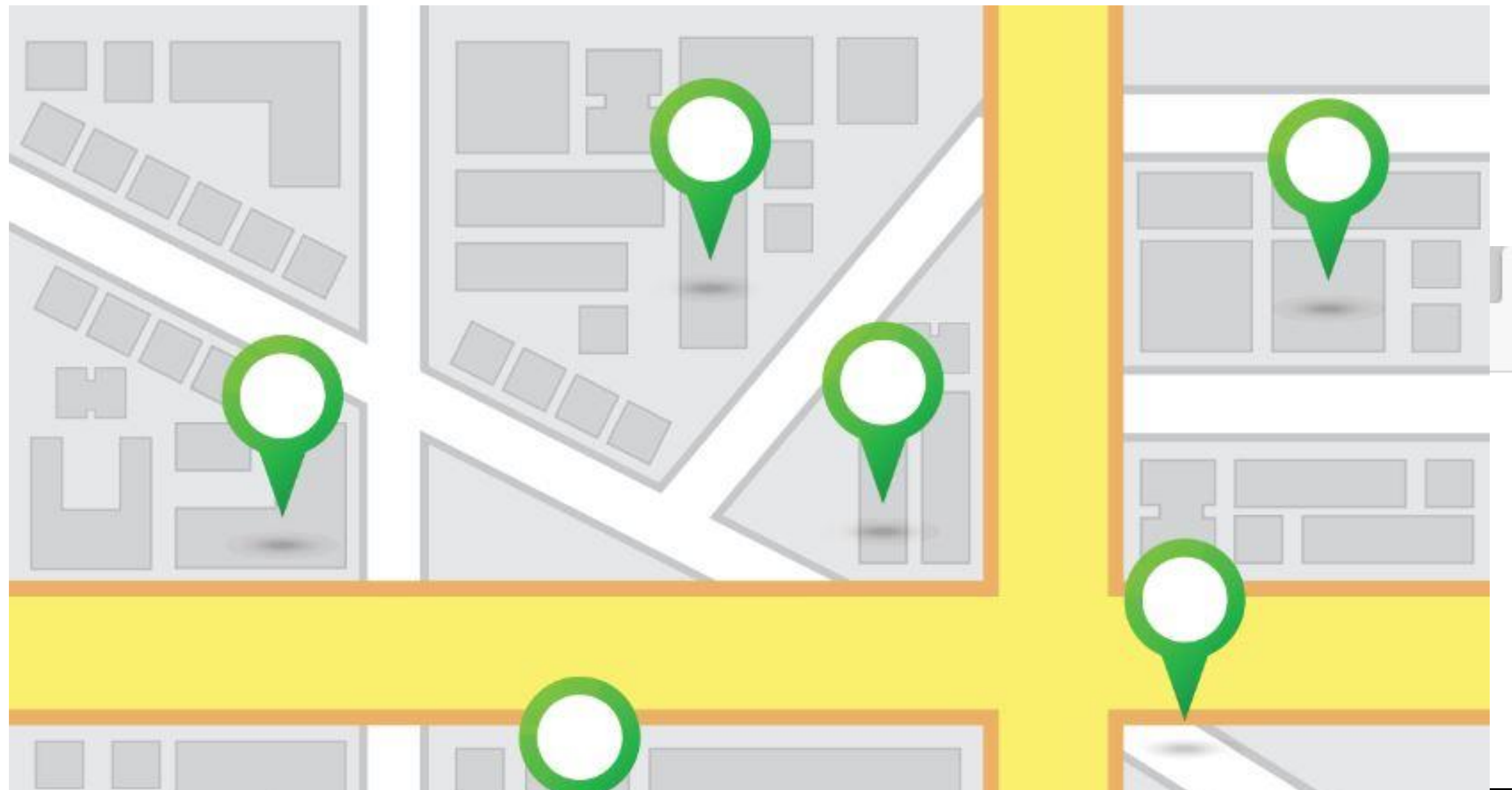
shetech

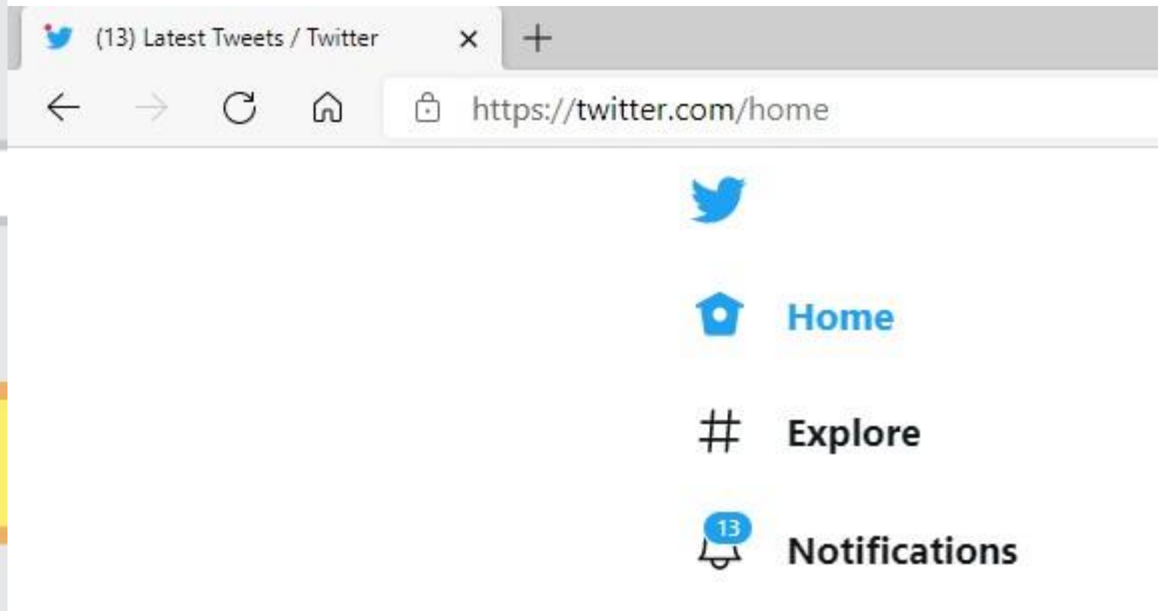
#WEBDAY2021

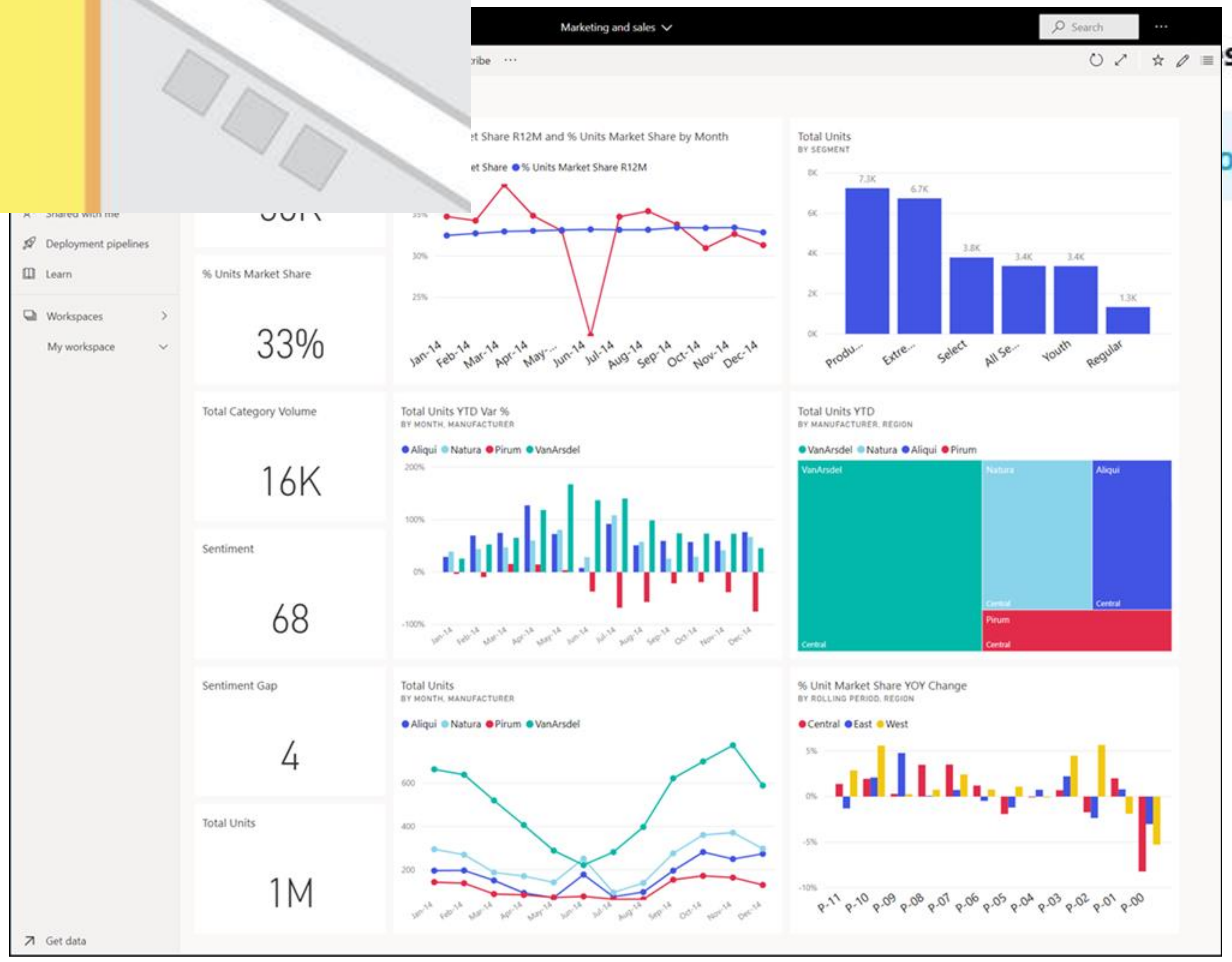
WEB TODAY

WEB DAY 2021

No need to hit the refresh button.







Users expect real-time.

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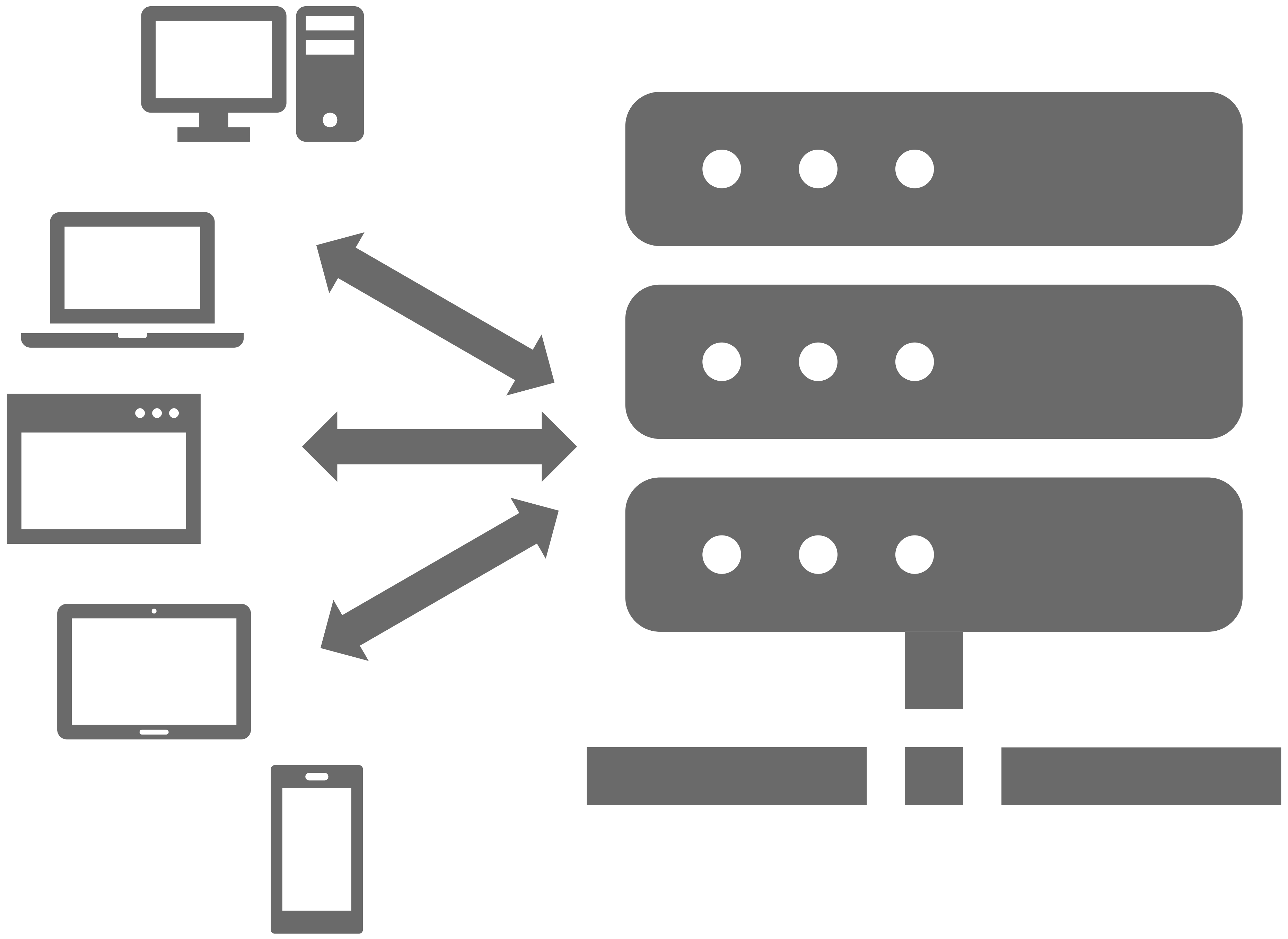
ASP.NET CORE SIGNALR

"ASP.NET Core SignalR is an open-source library that simplifies adding real-time web functionality to apps."

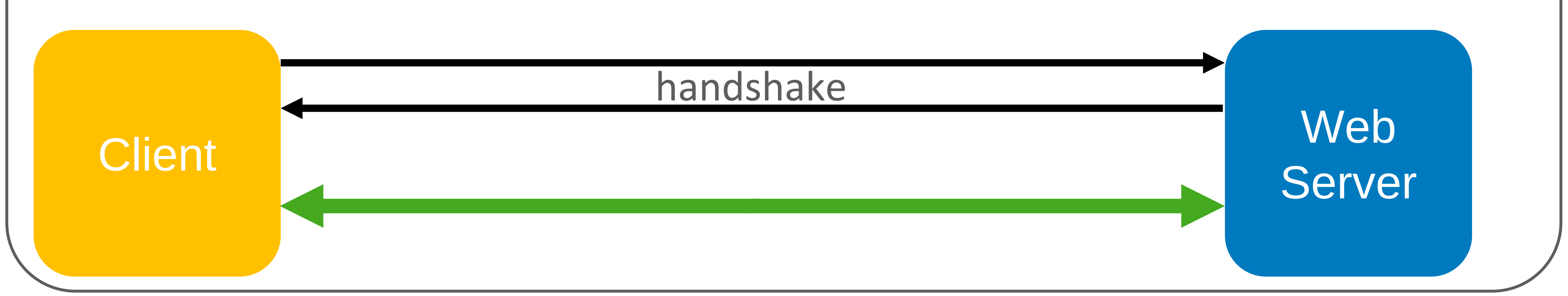


"SignalR provides an API for creating server-to-client remote procedure calls (RPC)."

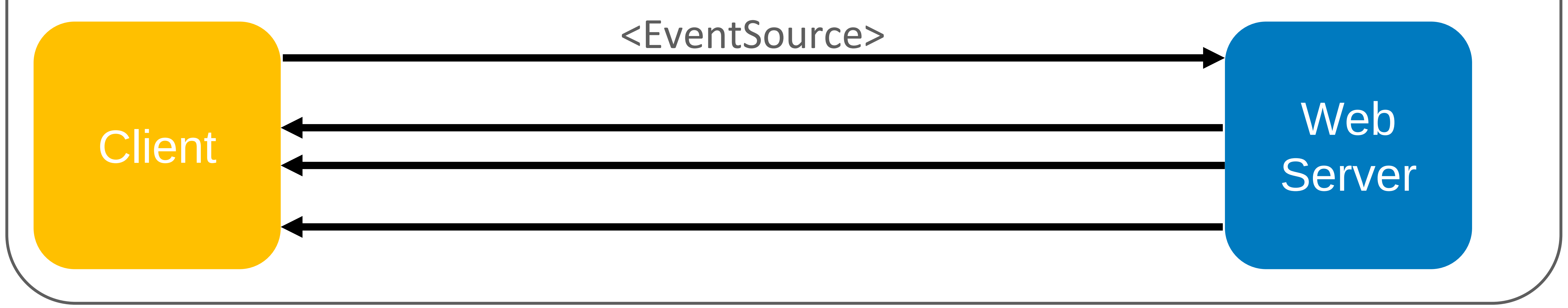
Source: https://docs.microsoft.com/en-us/aspnet/core/signalr/introduction

TRANSPORT

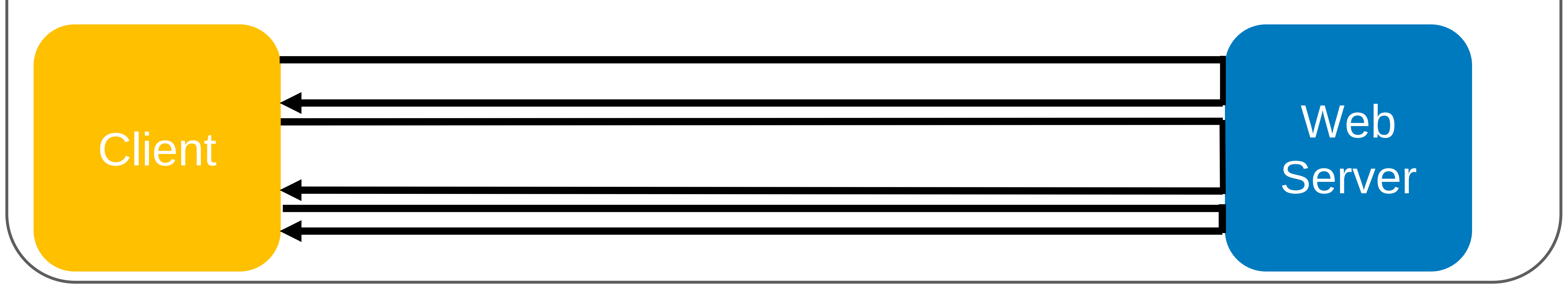
WebSockets



Server Sent Events



Long Polling



SERIALIZATION

JSON

```
{
        "name": "Enos",

        "year": 2021

}
```

MessagePack

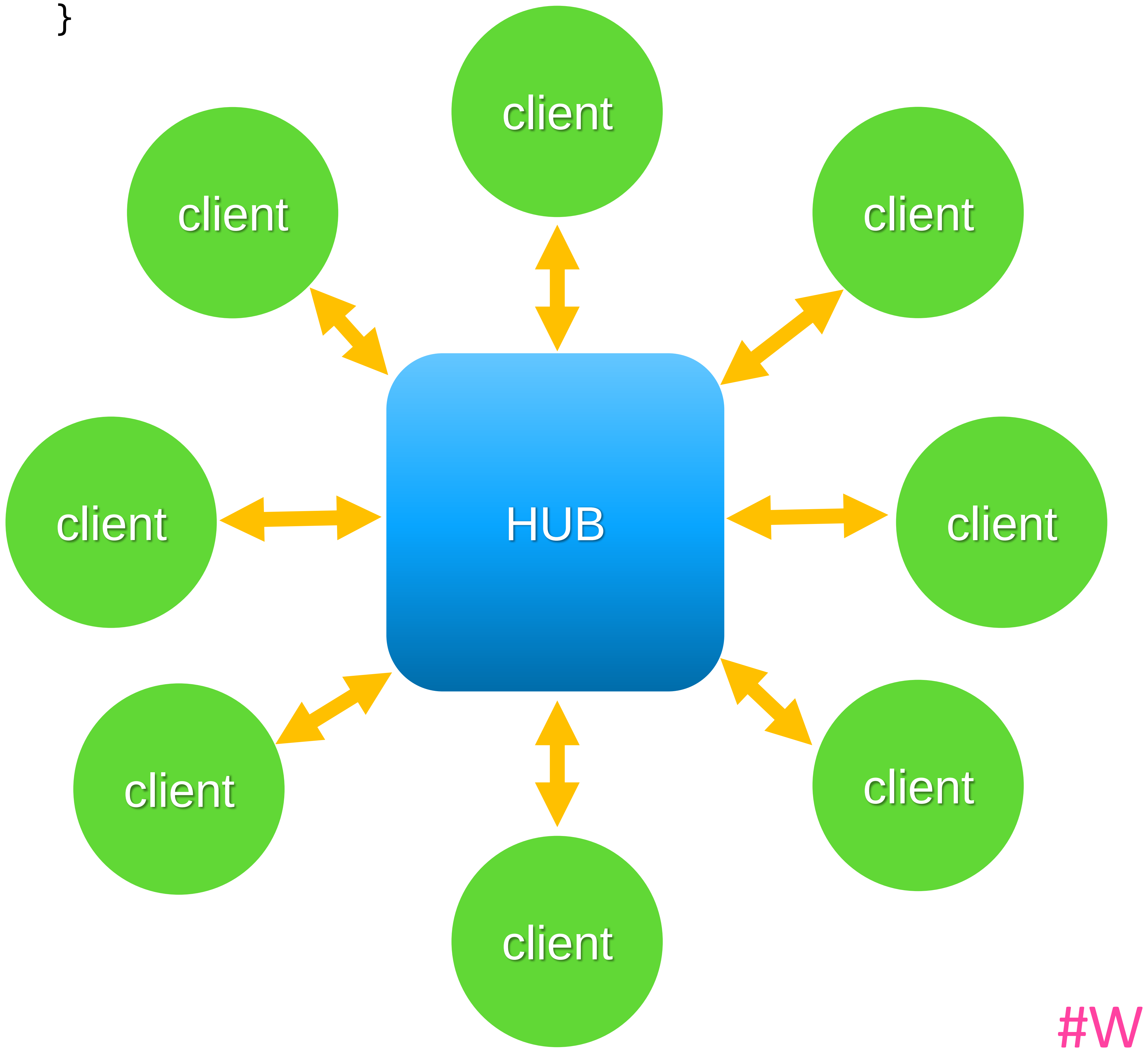
```
DF 00 00 00 02 A4 6E 61 6D 65 A4
45 6E 6F 73 A4 79 65 61 72 CD 07
E5
```

- ❖ Requires additional Packages for both the client and server.

HUB (SERVER)

- Included in the `Microsoft.AspNetCore.App` shared framework.
- Handles connection management automatically.
- Sends messages to all connected clients simultaneously. For example, a chat room.
- Sends messages to specific clients or groups of clients.

```
public class ChatHub : Hub
{
  public async Task SendMessage(string user, string msg)
  {
    await Clients.Others.SendAsync("MessageReceived", user, msg);
  }
}
```



CLIENTS

Browser & Node.js

.NET Core

Java 8 and later

DEMO

Simple Mutiplatform Chat

IHUBCONTEXT

“You can access an instance of ***IHubContext*** *via dependency injection. Use this instance to send messages to client.“*

Source: https://docs.microsoft.com/en-us/aspnet/core/signalr/hubcontext

```
public class HomeController : Controller
{
  private readonly IHubContext<MonitorHub> _hubContext;

  public HomeController(IHubContext<MonitorHub> hubContext)
  {
    _hubContext = hubContext;
  }

  public async Task<IActionResult> Index()
  {
    await _hubContext.Clients.All.SendAsync("Notify", "Home accessed");
  }
}
```

AUTHENTICATION

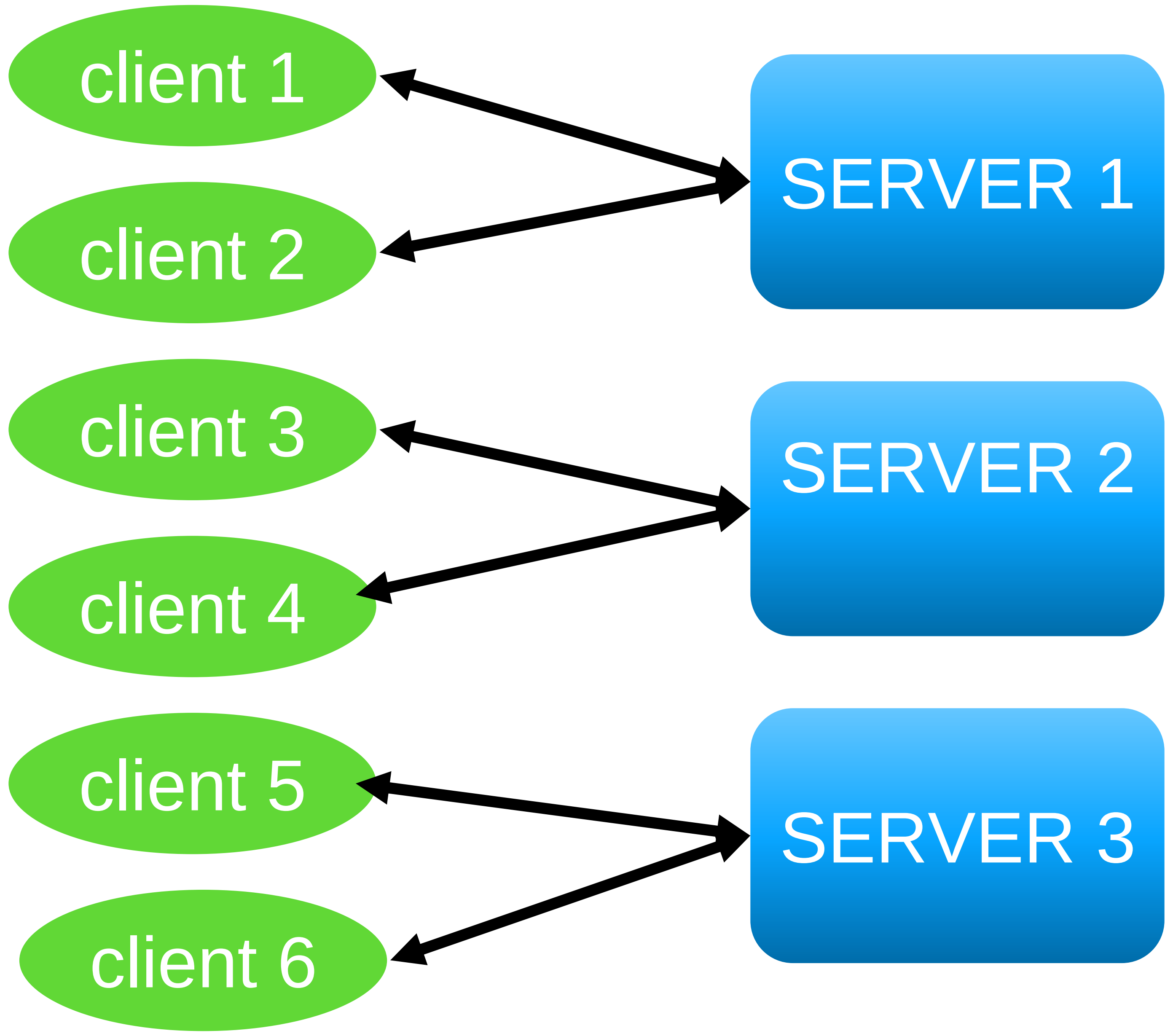
- ASP.NET Core authentication used to associate user with each connection.
- Authentication data can be accessed from **`HubConnectionContext.User`** property.
- **`[Authorize]`** Attribute.

DEMO

Simple Fruit Shop

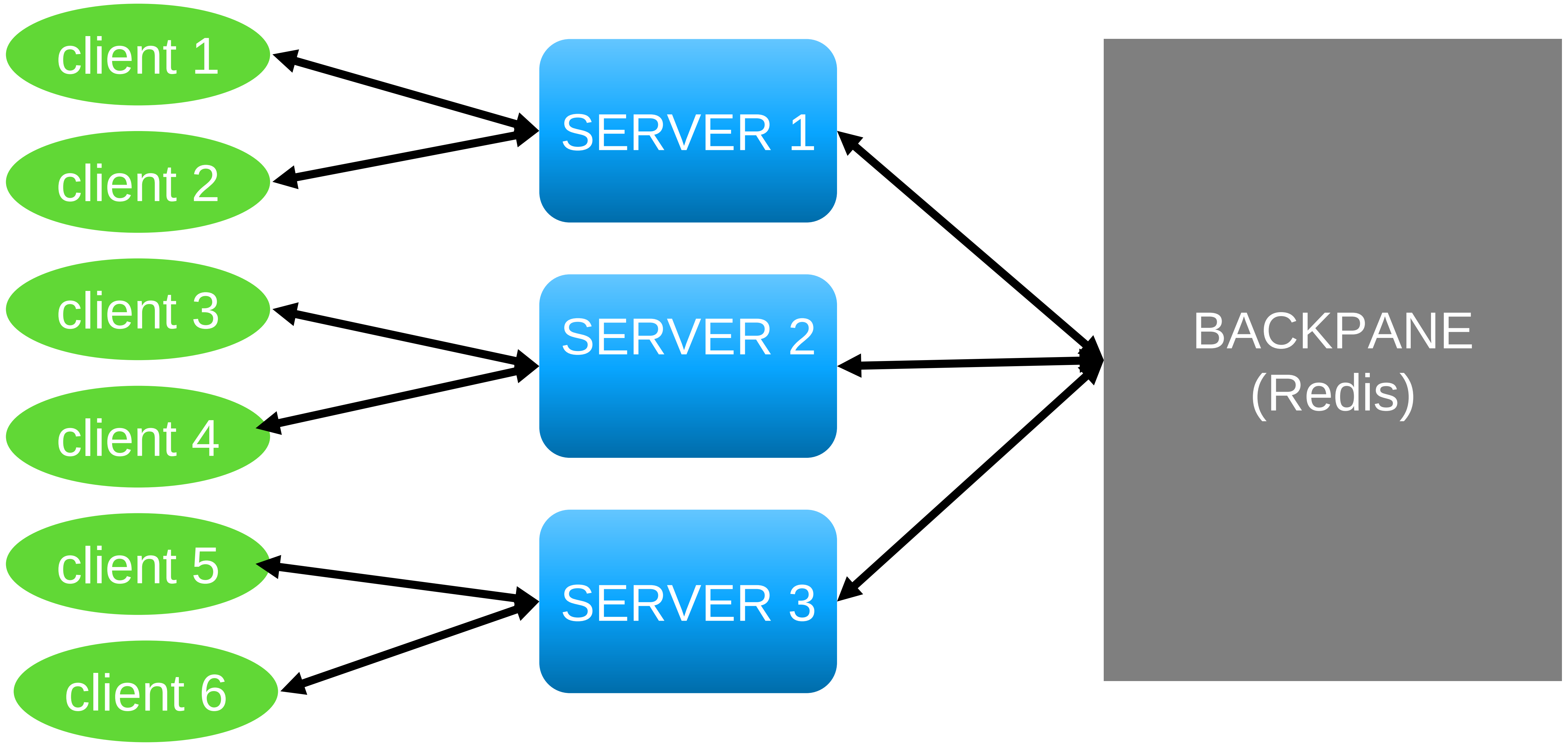
HOSTING

- A SignalR connection is persistent.
- SignalR requires that all HTTP requests for a specific connection be handled by the same server process.



REDIS BACKPANE

- The server environment must be configured for sticky sessions.
- When a server wants to send a message to all clients, it sends to the backplane.
- The backplane knows all connected clients and which servers they're on.



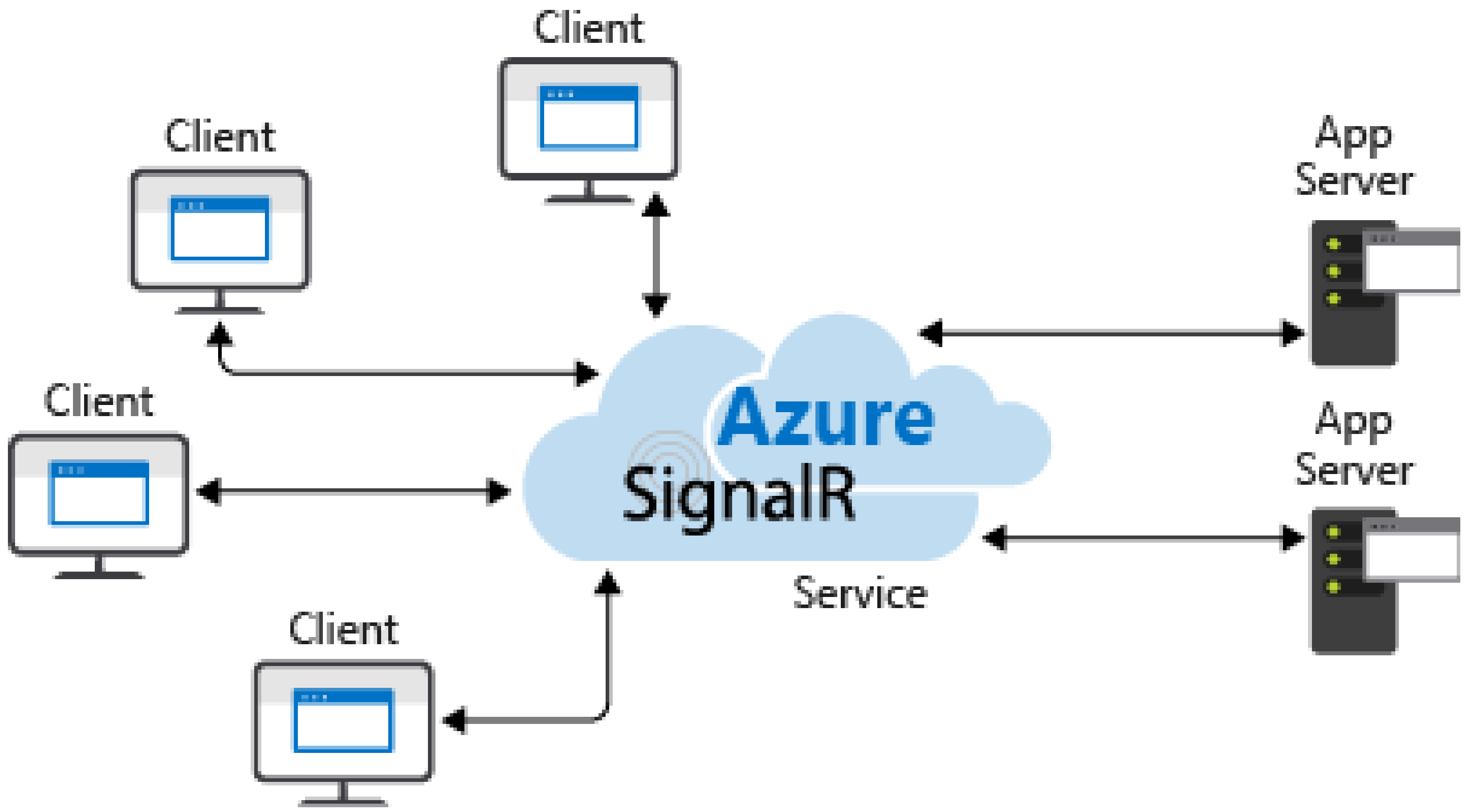
DEMO

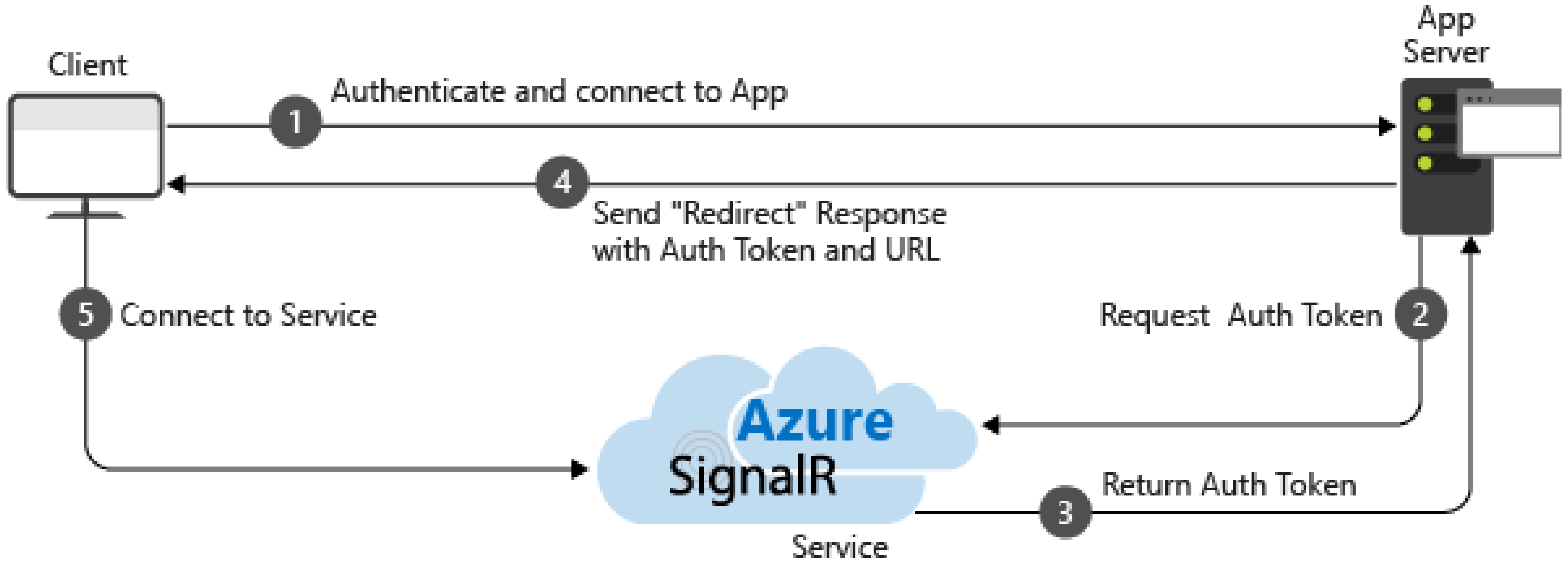
Sensor Dashboard

(with Redis backpane)

AZURE SIGNALR SERVICE

- Is a proxy rather than a backplane.
- Scales to handle any number of connections.
- Sticky sessions is not required.





AZURE SIGNALR SERVICE PRICING

	Free	Standard
Concurrent Connections per Unit	20	100
Messages / Unit / Days	20000	Unlimited (first 1000000 messages free)
Price / Unit / Day	Free	€ 1,3578
Max Units	1	100

Additional messages: € 0,844 per million messages

❖ Source: https://azure.microsoft.com/en-us/pricing/details/signalr-service/

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Thank You!

Slides and Demo source code available at
https://github.com/enosrecanati/WebDay2021-ASP.NET-Core-SignalR

Canale Discord UGIdotNET: #eventi-webday2021-track3!
https://discord.gg/77yC9N4A

get in touch

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