Introducing ASP.NET SignalR - Push Services with Hubs

Hosting

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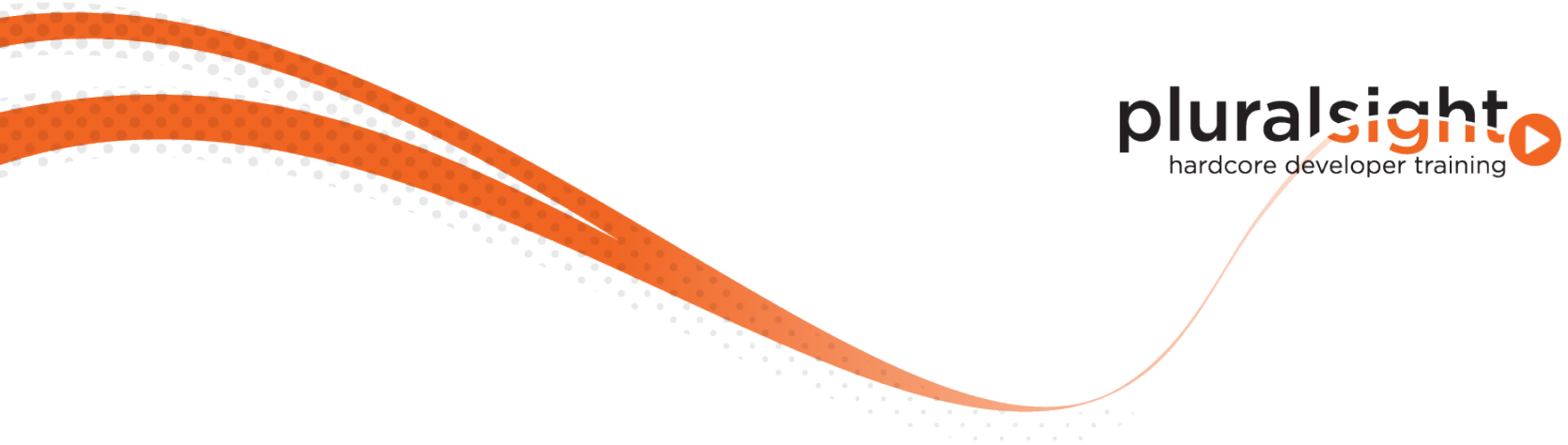

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Outline

- OWIN
- ASP.NET hosting
- Self hosting
- Going Cloud

OWIN

- **Open Web Server Interface for .NET**
  - Spec
  - Hosts, frameworks
- **Defines a standard interface between .NET web servers and web applications**
  - decouple server and application
  - encourage development of simple modules for .NET web development
  - stimulate open source ecosystem of .NET web development tools
- **.NET implementation e.g. in Katana project**
  - Application delegate (AppFunc)
  - Environment dictionary

```
var AppFunc = Func<IDictionary<string, object>, Task>;
```

- **SignalR hosting builds on top of OWIN**

ASP.NET hosting

- **SignalR ASP.NET hosting sits on top of OWIN**

```
Install-Package Microsoft.AspNet.SignalR
```

- **Create routes for hubs**
  - Referenced assemblies are scanned for Hub implementations

```
public class Global : System.Web.HttpApplication
{
    protected void Application_Start(object sender, EventArgs e)
    {
        // Register the default hubs route: ~/signalr
        RouteTable.Routes.MapHubs();
    }
}
```

DEMO

ASP.NET hosting

Self hosting

- **Self hosting sits on top of OWIN**
  - `IAppBuilder` API

```
Install-Package Microsoft.Owin.Hosting -pre
Install-Package Microsoft.Owin.Host.HttpListener -pre
Install-Package Microsoft.AspNet.SignalR.Owin
```

- **Simple steps to get going**
  1. Define startup class with `IAppBuilder` method signature
  2. Map hubs onto `IAppBuilder` (route)
  3. No automatic scanning of referenced assemblies
- **Startup class used in `WebApplication.Start` to spin up server**
  - HTTP or HTTPS base URL

- **Essentially five lines of code in total**

- **jQuery client needs to explicilty set connection URL**
- ***Watch out*: process user needs *http.sys* permissions on the URL namespace**

DEMO

Self hosting

Windows Azure

- **Cloud Services**
  - ASP.NET hosting in Web Role
  - Self hosting in Worker Role
- **Windows Azure Web Sites**
  - ASP.NET hosting
- **IaaS/VMs**
  - Do what you want
- **But: watch out for scale-out issues**
  - Which server instance handles the client request?
  - Which instance pushes?
- **Scale-out providers for multi-node environments**

DEMO

Deploying to Windows Azure Web Sites

References

- **OWIN**
  - http://owin.org/
- **Katana project**
  - http://katanaproject.codeplex.com/

Summary

- **Powerful hosting options based on OWIN**
  - ASP.NET host
  - Self host
- **Hosting in Windows Azure is easy**
  - Think about scale-out