Updating ASP.NET Identity to Handle Multi-tenancy

Peter Kellner

MICROSOFT ASP.NET MVP AND CONSULTANT

@pkellner   linkedin.com/in/peterkellner99   PeterKellner.net

Overview

ASP.NET history lesson regarding security

Choices choices choices, ASP.NET Identity is our choice

ASP.NET Identity overview

Adding multi-tenancy to ASP.NET Identity
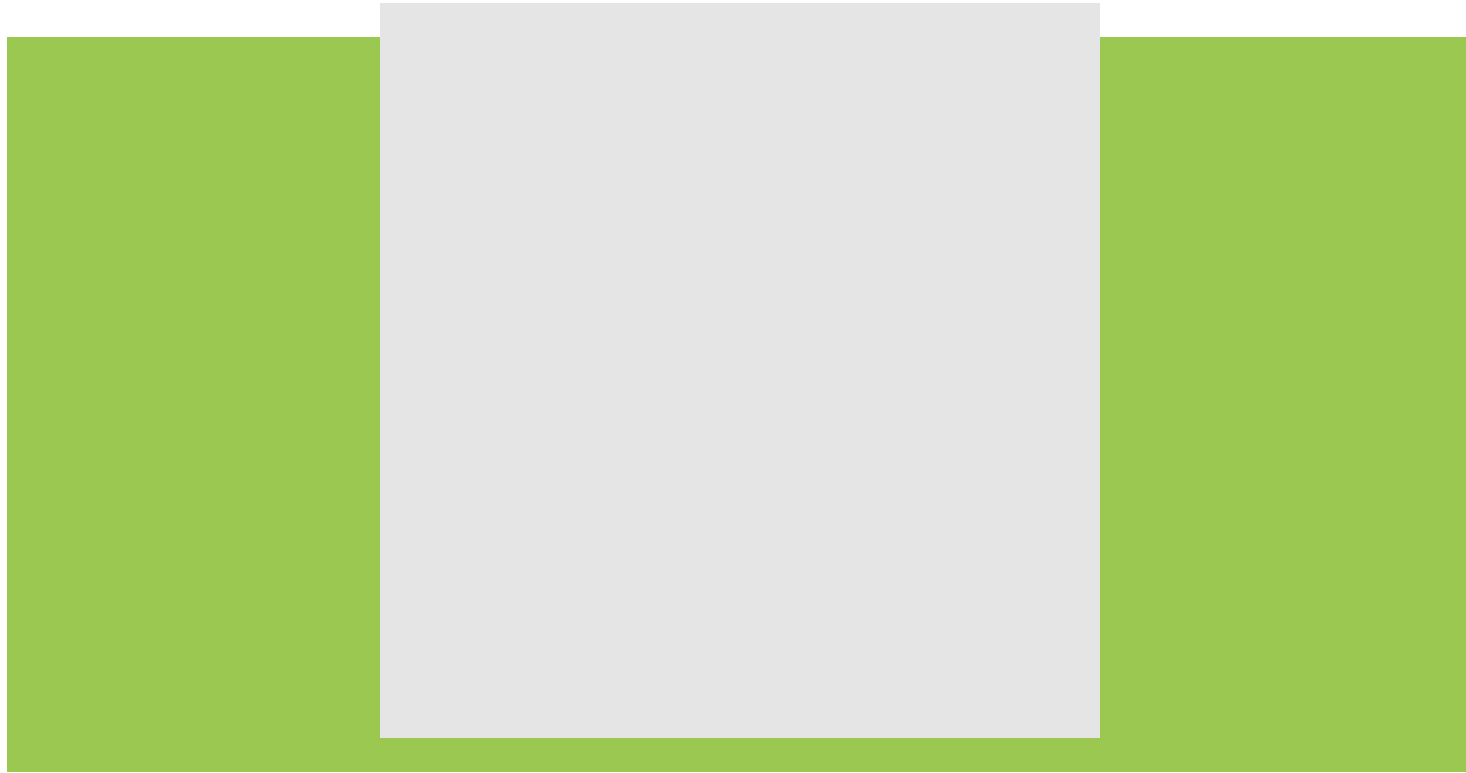
Security Options Not Set By Default

Two Factor Authentication

(Text Messages)

External Authentication

(Google, Facebook, Hotmail, ...)

Token Authentication

(Header Tokens)

Security Options Set
By Default

Required Interfaces Necessary in ASP.NET Identity

```csharp
namespace Microsoft.AspNet.Identity
{
    /// <summary>Minimal interface for a user with id
    /// <typeparam name="TKey"></typeparam>
    public interface IUser<out TKey>
    {
        /// <summary>Unique key for the user</summary>
        TKey Id { get; }
        /// <summary>Unique username</summary>
        string UserName { get; set; }
    }
}
```

IUser

```csharp
public interface IUserStore<TUser, in TKey> : IDisposabl
{
    /// <summary>Insert a new user</summary>
    /// <param name="user"></param>
    /// <returns></returns>
    Task CreateAsync(TUser user);
    /// <summary>Update a user</summary>
    /// <param name="user"></param>
    /// <returns></returns>
    Task UpdateAsync(TUser user);
    /// <summary>Delete a user</summary>
    /// <param name="user"></param>
    /// <returns></returns>
    Task DeleteAsync(TUser user);
    /// <summary>Finds a user</summary>
    /// <param name="userId"></param>
    /// <returns></returns>
    Task<TUser> FindByIdAsync(TKey userId);
    /// <summary>Find a user by name</summary>
    /// <param name="userName"></param>
    /// <returns></returns>
    Task<TUser> FindByNameAsync(string userName);
}
```

IUserStore

ASP.NET Identity -> Multi-Tenancy

Create a new tenant table

Add tenant foreign key to ApplicationUser

Create a new ApplicationUserStore

Associate our multi-tenant changes to ASP.NET Identity

Change user validation in EF to allow unique email/tenant combinations

ASP.NET Identity Changes for Multi-tenancy

ApplicationUser

UserStore

ApplicationUser
(Enhanced)

ApplicationUserStore
(New)

Out of Box

**(what comes from scaffolding a
Visual Studio Web Project)**

Multi-tenant Changes

**Classes changed to handle
multi-tenancy**

Summary

History Lesson (Membership Providers -> ASP.NET Identity)

ASP.NET Identity overview including implementing our own IUser and IUserStore

Customizing ASP.NET Identity to handle multi-tenancy