



Mastering ASP.NET Core Security

1	INTRODUCTION	1
2	ABOUT TOKENS, OAUTH 2, AND OPENID CONNECT	3
2.1	Understanding OAuth2 and OpenID Connect.....	4
2.2	How OpenID Connect Generates Id Token	4
2.3	Types of Clients.....	5
2.4	OAuth2 and OpenID Connect Endpoints and Flows	6
3	SETTING UP IDENTITYSERVER4 AND UI	8
3.1	Installing UI for the IDP Application	15
4	CREATING A CLIENT APPLICATION	19
4.1	Regarding the API.....	22
4.2	Testing the Client Application.....	23
5	SECURING THE WEB APPLICATION	25
5.1	Configuring the IdentityServer to Use the Authorization Code Flow	27
5.2	Securing the Client Application with the Authorization Code Flow	28
5.3	Testing the Functionality.....	30
5.4	Inspecting Claims.....	33
5.5	Using PKCE (Proof Key for Code Exchange).....	34
5.6	Login, Logout, and Additional User Info	37
5.7	Additional Claims	40



Mastering ASP.NET Core Security

6	WORKING WITH CLAIMS AND AUTHORIZATION	42
6.1	Modifying Claims	42
6.2	Adding Additional Claims	44
6.3	Manually Calling the UserInfo Endpoint	47
6.4	Implementing Role-Based Authorization.....	49
6.5	Protecting Endpoints with Roles.....	53
7	SECURING THE WEB API	57
7.1	Implementing Web API Security	57
7.2	Providing an Access Token When Calling an API.....	61
7.3	Redirecting the Client to the Unauthorized Page.....	63
7.4	Using Policies to Secure The Application	64
8	HANDLING TOKEN EXPIRATION.....	69
8.1	Working with Token Lifetime and Expiration.....	69
8.2	Refreshing the Token	70
9	MIGRATING IDENTITYSERVER4 CONFIGURATION TO THE DATABASE WITH ENTITY FRAMEWORK CORE	76
9.1	Preparing Migrations for the IS4 Configuration.....	77
9.2	Creating Migrations.....	78
10	ASP.NET CORE IDENTITY INTEGRATION WITH EXISTING IDENTITYSERVER4 PROJECT	82



Mastering ASP.NET Core Security

10.1	Integrating the ASP.NET Core Identity.....	83
10.2	Initial Migrations.....	85
10.3	Seeding the Users	87
10.4	Modifying Login and Logout Logic	90
11	USER REGISTRATION WITH ASP.NET CORE IDENTITY	93
11.1	Actions, View and ViewModel.....	93
11.2	Implementing Registration Action	96
11.3	Testing User Registration.....	99
11.4	Working with Identity Options	99
12	RESET PASSWORD WITH ASP.NET CORE IDENTITY.....	101
12.1	Using Email Service in the IdentityServer4 Project	101
12.2	Implementing Forgot Password Functionality	103
12.3	Implementing Reset Password Functionality	107
12.4	Testing the Solution	110
13	EMAIL CONFIRMATION	113
13.1	Preparing Email Confirmation Implementation	113
13.2	Implementing Email Confirmation.....	115
13.3	Testing Email Confirmation	117
13.4	Modifying Lifespan of the Email Token	119
14	USER LOCKOUT	121



Mastering ASP.NET Core Security

14.1	Configuration	121
14.2	Lockout Implementation	121
14.3	Testing Lockout.....	123
15	TWO-STEP VERIFICATION	126
15.1	Enabling Verification Process	126
15.2	Two-Step Implementation	128
15.3	Testing Two-Step Verification	130
16	EXTERNAL PROVIDER WITH IDENTITYSERVER4 AND ASP.NET CORE IDENTITY	132
16.1	Getting ClientId and ClientSecret	132
16.2	Configuring External Identity Provider.....	135
16.3	External Provider Implementation	136
16.4	Testing	139