Security in ASP.NET Applications

Course code: GOC3314

The course looks into security of web applications from the different points of view and it is designed for programmers and administrators of web servers on Microsoft IIS platform, where ASP.NET application is running. The "programmer" and the "administrator" part are particularly close in security. That is the reason why the course is designed as a "tasting" of the other site. We will teach you to look at the problems of security of web applications in their all complexity: how to secure the server itself, how to write an application so as not to contain security bugs, how to secure data during the transmission and while saving on the server. The theoretical basis will be flavoured with stories from practice.

Who is the course for

The course is designed for developers, administrators and architectss of web applications on ASP.NET platform

Required skills

Experience with .NET Framework platform

Basic experience with object orientated programming in C# or VB.NET language

Basic experience with development of web application on ASP.NET platform

Course outline

Four basic principles of security
Four basic principles of security
A bit of theory on the beginning

Consideration of types of security threats

Revealing of connected problems

Consideration of serioussness of security threats
Ensuring of server platform

Minimization of attack surface

Security Configuration Wizard

Fight against inner enemy

Defence into the depth

Encoding the configuration sections

Ensuring the channel of net communication

How does HTTP protocol work and why is not secure

How does SSL/TLS/HTTPS work

How to apply for web server certificate and how to install it

Quick creation of certificate using the utilities from SDK Platform

Operation of certification authority using Windows Certificate Services

Operation of certification authority using OpenSSL (on the Windows platform and not just there)
Ensuring the application

Identification, authentication, authorization

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Security in ASP.NET Applications

Security archtectures of web application

Accessible mechanism in IIS

How to write your own authentication modul and why not to do it

Forms Authentication in ASPNET

Authentication tickets and their validity

The time of ticket validity versus the lenght of session

Cookie and Cookieless authentication

Login Controls

Static credentials in web.config

Single sign-on within one domain

Saving of passwords

Encoding, hashing, HMAC

E-mail address verification

Solving of forgotten password

ASPNET Membership

Membership providers in ASP.NET

Initial setting

ASP.NET Universal Providers

Use of provider of the third party

Creation of your own membership provider

ASPNET Roles

Roles of providers in ASP.NET

Creation of your own role of provider

Ensuring the data by encoding

Secrets, ciphers and paranois in the course of time

Symetric and asymetric encoding, combinations

Handling with keys

Practical implementation of encrypted saving of data in .NET using RSA and AES algorithm and corresponding architectures

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