# How to use RSA encryption algorithm API to encrypt and decrypt configuration section. (CS\VBASPNETEncryptAndDecryptConfiguration)

## Introduction

This sample shows how to use RSA encryption algorithm API to encrypt and decrypt configuration sections in order to protect sensitive information from interception or being hijacked in ASP.NET web applications.

## Building the Sample

If your application hasn't web.config, please create one. And also specify some sections such as appSetting, connectSetting in this web.config.  
How to create Web.config in application:   
<http://support.microsoft.com/kb/815179>  
Working with Web.config Files:   
<http://msdn.microsoft.com/en-us/library/ms460914.aspx>

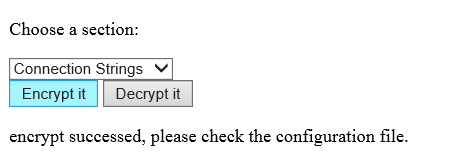
## Running the Sample

## Step 1: Open the CSASPNETEncryptAndDecryptConfiguration.sln.

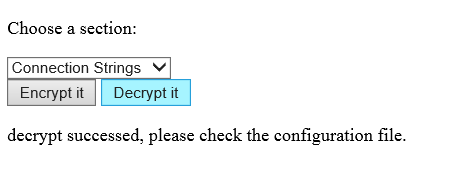
## Step 2: Press Ctrl+F5.

## Step 3: Choose a configuration section in the dropdown list.

## Step 4: Click the "encrypt it" button as shown below. If the encryption is successful, then open the web.config file. You will observe that the specific section is encrypted and is replaced by some RSA data section.



## Step 5: If you want to recover this section to plain text, click the "decrypt it” button and check web.config again.



**Note**: If you are running this application in the file system, Visual Studio will display a dialog with the message "The file has been modified outside the editor. Do you want to reload it?" when you close the application. Click yes and then view the web.config.

## Using the Code

1. Get the dropdown list selected value to assign which configuration section to encrypt or decrypt.

|  |
| --- |
| -Code block start-  --HTML code snippet start--  <html>  <head>  <meta name="viewport" content="width=device-width" />  <title>Index</title>  <script src="~/Scripts/jquery-2.1.1.min.js"></script>  <script type="text/javascript">  $(document).ready(function () {  $("#SectionNames").append($('<option>', {  value: "connectionStrings",  text: "Connection Strings"  })  );  $("#SectionNames").append($('<option>', {  value: "appSettings",  text: "Application Settings"  })  );  $("#SectionNames").append($('<option>', {  value: "system.web/machineKey",  text: "Machine Key"  })  );  $("#SectionNames").append($('<option>', {  value: "system.web/sessionState",  text: "Session State"  })  );  });  var EncryptConfig = function () {  var url = "/Home/EncryptConfig";  var sectionName = $("#SectionNames option:selected").text();  $.ajax({  url: url,  type: "POST",  data: "sectionName=" + $("#SectionNames option:selected").val(),  success:function()  {  $("#lbresult").text("encrypt successed, please check the configuration file.");  },  error: function () {  $("#lbresult").text("encrypt failed.");  }  });  }  var DecryptConfig = function () {  var url = "/Home/DecryptConfig";  var sectionName = $("#SectionNames option:selected").text();  $.ajax({  url: url,  type: "POST",  data: "sectionName=" + $("#SectionNames option:selected").val(),  success: function () {  $("#lbresult").text("decrypt successed, please check the configuration file.");  },  error: function () {  $("#lbresult").text("decrypt failed.");  }  });  }  </script>  </head>  <body>  <div>  <p>Choose a section:</p>  <select id="SectionNames"></select>  </div>  @\*<br /><br /><br /><br />\*@  <div>  <button id="btnEncrypt" onclick="EncryptConfig()">Encrypt it</button>  <button id="btnDecrypt" onclick="DecryptConfig()">Decrypt it</button>  </div>  <p id="lbresult"></p>  </body>  </html>  --HTML code snippet end--  Insert other Programming Language Code Snippet here  -Code block end- |

2. Open the web.config in this web application.   
3. Find the specific section and use RSAProtectedConfigurationProvider to encrypt or decrypt it.

|  |
| --- |
| -Code block start-  --C# code snippet start--  [HttpPost]  public ActionResult EncryptConfig(string sectionName)  {  if (string.IsNullOrEmpty(sectionName))  {  return null;  }  Configuration config = WebConfigurationManager.OpenWebConfiguration(Request.ApplicationPath);  ConfigurationSection section = config.GetSection(sectionName);  section.SectionInformation.ProtectSection(provider);  config.Save();  return Content("Success");  }  --C# code snippet end--  --VB code snippet start--  <HttpPost> \_  Public Function EncryptConfig(sectionName As String) As ActionResult  If String.IsNullOrEmpty(sectionName) Then  Return Nothing  End If  Dim config As Configuration = WebConfigurationManager.OpenWebConfiguration(Request.ApplicationPath)  Dim section As ConfigurationSection = config.GetSection(sectionName)  section.SectionInformation.ProtectSection(provider)  config.Save()  Return Content("Success")  End Function  --VB code snippet end--  -Code block end- |

4. If this sample runs successful, this section will be encrypted by RSA and replaced by some RSA section in web.config.

## More Information

RSACryptoServiceProvider  
 <http://msdn.microsoft.com/en-us/library/system.security.cryptography.rsacryptoserviceprovider(VS.80).aspx>  
 CspParameters  
 <http://msdn.microsoft.com/en-us/library/system.security.cryptography.cspparameters(VS.80).aspx>  
 ConfigurationSection  
 <http://msdn.microsoft.com/en-us/library/system.configuration.configurationsection.aspx>  
 SectionInformation.ProtectSection   
<http://msdn.microsoft.com/en-us/library/system.configuration.sectioninformation.protectsection.aspx>