# Integrating HealthVault SDK with APS.NET MVC Part II

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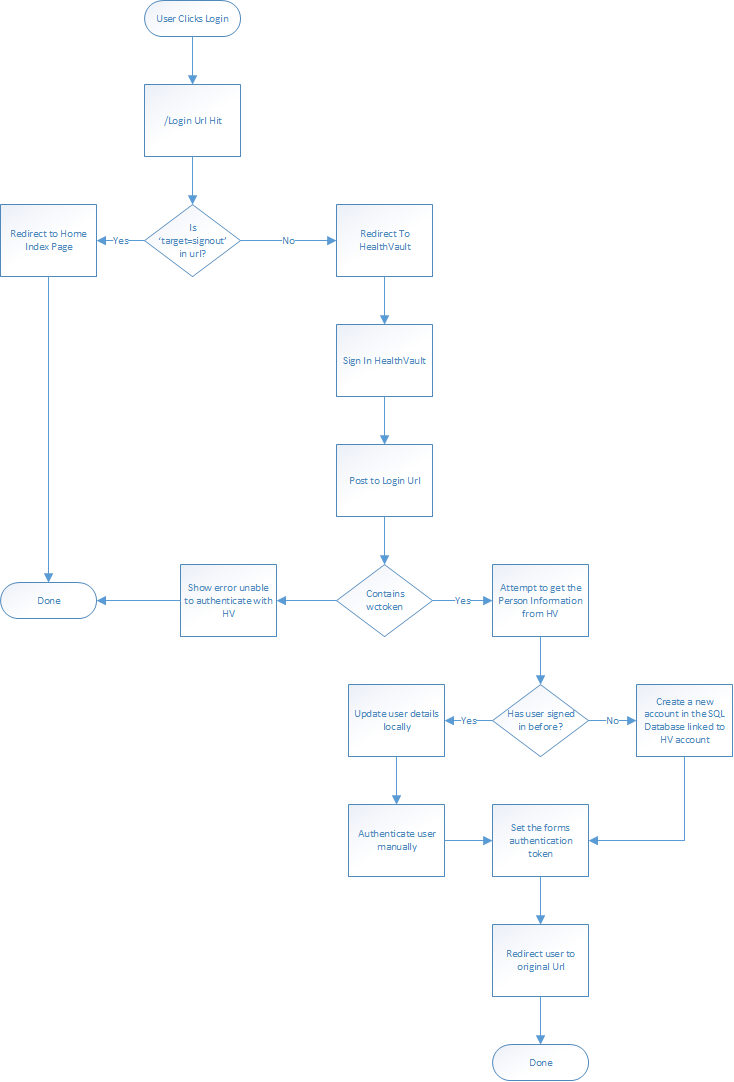
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In the first part of this article, we took the initial steps to have our ASP.NET MVC project work with the HealthVault SDK. In this part of the article, we’ll add code so we can authenticate with HealthVault, get user information and integrate with default MembershipProvider.

## Authenticating With HealthVault

To access a user’s HealthVault data, we require them to authenticate with HealthVault. HealthVault’s authentication is similar to OAuth but is not the OAuth implementation. All the details on [Shell Redirect Interfaces](http://msdn.microsoft.com/en-us/library/ff803620) can be found on MSDN and recommend you read through this to familiarize yourself with the code we are about to add.

For the Asthma Journal application, we decided on using the standard [SqlMemberShipProvider](http://msdn.microsoft.com/en-us/library/system.web.security.sqlmembershipprovider.aspx) for forms authentication in combination with HealthVault authentication and create users locally to provide authorized access to certain pages. The basic flow is like this



Now that we have a basic flow, we will implement the code pieces to accomplish this.

1. In your VS2012 Project, add a reference to the HealthVault SDK projects.
2. Open **AccountController.cs** in the **Controllers** directory and find the **Login** method. Add the following code

[AllowAnonymous]

public ActionResult Login(string returnUrl)

{

if (HttpContext.Request.RawUrl.Contains("target=SignOut"))

//when we sign out it will come to this page, so we just want to redirect to the login page

return RedirectToAction("Index", "Home");

else

{

//Redirect to health vault login which will post to the login method

var url = Request.Params["ReturnUrl"] == null ? (Request.UrlReferrer.PathAndQuery == null ? "/" : Request.UrlReferrer.PathAndQuery) : Request.Params["ReturnUrl"];

WebApplicationUtilities.RedirectToLogOn(System.Web.HttpContext.Current, true, url);

}

return View();

}

This code will allow us to redirect to appropriate URLs depending on the request Url. When a user signs out from HealthVault, it will redirect to the Login page, so we need to handle that scenario. Add the appropriate using statements to eliminate any compile errors

Run the application, click the login link on the top right. This will re-direct you to HealthVault sign in and when you have successfully authenticated, it will redirect you back to the Login page but it will say it’s unsuccessful because although we have authenticated with HealthVault, we have not authenticated with our local system. The next few steps will fix that.

## Authenticating with SqlMembershipProvider

Once authenticated with HealthVault, we need to authenticate with our local system to allow the appropriate pages in our system. To do this we need to add appropriate code to our **Login()** method that handles the **HttpPost**.

## Handling HTTPPOST for Login

First thing we need to make sure is check for the **wctoken** parameter in the queryString and if it’s not there we just show an error that we cannot authenticate. Our HttpPost Login will be changed to the following

[AllowAnonymous]

[HttpPost]

public ActionResult Login(LoginModel model, string returnUrl)

{

// here we are getting posted from HealthVault so extract the wctoken sent

string authToken = Request.Params["wctoken"];

if (authToken != null)

{

}

else

{

// no wctoken so just redirect to home

ModelState.AddModelError("", "Unable to authenticate with Microsoft HealthVault.");

}

// If we got this far, something failed, redisplay form

return View(model);

}

Next we want to add the logic to the if statement to follow our flow chart. The code is commented, so should be able to read through it.

1. Using the HealthVault SDK, get the user information with the following code

// create a web app cred object

var appId = HealthApplicationConfiguration.Current.ApplicationId;

WebApplicationCredential cred =

new WebApplicationCredential(

appId,

authToken,

HealthApplicationConfiguration.Current.ApplicationCertificate);

// setup the user

WebApplicationConnection connection = new WebApplicationConnection(appId, cred);

PersonInfo personInfo = HealthVaultPlatform.GetPersonInfo(connection);

// check to make sure there is access to records

if (personInfo.AuthorizedRecords.Count() == 0)

throw new Exception("There are no authorized users for us to work with!");

// check to see if the user exists

var personId = personInfo.PersonId.ToString();

1. Once we have retrieved the person information from HealthVault, attempt to validate the user in our local system. The local system will be a user derived from the **PersonInfo** object and the username will be the **PersonInfo.PersonId**  and the password will be the **PersonInfo.PersonId + HealthApplicationConfiguration.Current.ApplicationId**

// we found the user so authenticate them

var username = personId;

var password = personId + appId;

if (Membership.ValidateUser(username, password))

{

}

else

{

}

1. If the user has authenticated, we know they have used the system previously so we create an AUTH cookie to authenticate the user

// user has authenticated

var user = Membership.GetUser(personInfo.PersonId.ToString());

// save auth cookie

CreateAuthCookie(personInfo, user);

1. If the user has not authenticated with the system previously, we want to create them a new account and then create them an AUTH cookie to authenticate them with the system. If there is an error creating the new user, we want to report that back.

// the user has not registered with us so create one

// Attempt to register the user

MembershipCreateStatus createStatus;

var newUser = Membership.CreateUser(model.UserName, model.Password, "", passwordQuestion: null, passwordAnswer: null, isApproved: true, providerUserKey: null, status: out createStatus);

if (createStatus == MembershipCreateStatus.Success)

{

//save auth cookie

CreateAuthCookie(personInfo, newUser);

}

else

{

ModelState.AddModelError("", ErrorCodeToString(createStatus));

return View(model);

}

1. Finally if everything goes well, we want to re-direct the user back to the URL that they attempted to login in from

// redirect to the actionqs

NameValueCollection query = HttpUtility.ParseQueryString(Request.Url.Query);

var r = HttpUtility.UrlDecode(query["actionqs"]);

return Redirect(new Uri(string.Format("http://{0}{1}{2}",

Request.Url.Host,

(Request.Url.IsDefaultPort ? "" : ":" + Request.Url.Port), r)).ToString());

After all that you’re HttpPost Login method should look like the following

[AllowAnonymous]

[HttpPost]

public ActionResult Login(LoginModel model, string returnUrl)

{

// here we are getting posted from HealthVault so extract the wctoken sent

string authToken = Request.Params["wctoken"];

if (authToken != null)

{

// create a web app cred object

var appId = HealthApplicationConfiguration.Current.ApplicationId;

WebApplicationCredential cred =

new WebApplicationCredential(

appId,

authToken,

HealthApplicationConfiguration.Current.ApplicationCertificate);

// setup the user

WebApplicationConnection connection = new WebApplicationConnection(appId, cred);

PersonInfo personInfo = HealthVaultPlatform.GetPersonInfo(connection);

// check to make sure there is access to records

if (personInfo.AuthorizedRecords.Count() == 0)

throw new Exception("There are no authorized users for us to work with!");

// check to see if the user exists

var personId = personInfo.PersonId.ToString();

// we found the user so authenticate them

var username = personId;

var password = personId + appId;

if (Membership.ValidateUser(username, password))

{

// user has authenticated

var user = Membership.GetUser(personInfo.PersonId.ToString());

// save auth cookie

CreateAuthCookie(personInfo, user);

}

else

{

// the user has not registered with us so create one

// Attempt to register the user

MembershipCreateStatus createStatus;

var newUser = Membership.CreateUser(model.UserName, model.Password, "", passwordQuestion: null, passwordAnswer: null, isApproved: true, providerUserKey: null, status: out createStatus);

if (createStatus == MembershipCreateStatus.Success)

{

//save auth cookie

CreateAuthCookie(personInfo, newUser);

}

else

{

ModelState.AddModelError("", ErrorCodeToString(createStatus));

return View(model);

}

}

// redirect to the actionqs

NameValueCollection query = HttpUtility.ParseQueryString(Request.Url.Query);

var r = HttpUtility.UrlDecode(query["actionqs"]);

return Redirect(new Uri(string.Format("http://{0}{1}{2}",

Request.Url.Host,

(Request.Url.IsDefaultPort ? "" : ":" + Request.Url.Port), r)).ToString());

}

else

{

// no wctoken so just redirect to home

ModelState.AddModelError("", "Unable to authenticate with Microsoft HealthVault.");

}

// If we got this far, something failed, redisplay form

return View(model);

}

## Manually Creating Authentication Cookie

If you have read through the code, you would have noticed a method called **CreateAuthCookie().** This is a helper method created to manually create the authentication Cookie.

Now that our models and database contexts are setup, we can go ahead and find users in the system after they have authenticated with HealthVault. The following method accomplishes this.

private void CreateAuthCookie(PersonInfo personInfo, MembershipUser user, string authToken)

{

// Create a new principal and serialize it

var userData = new JavaScriptSerializer().Serialize(user);

// create an auth ticket

var authTicket = new FormsAuthenticationTicket(1,

personInfo.PersonId.ToString(),

DateTime.Now,

DateTime.Now.AddHours(2),

false,

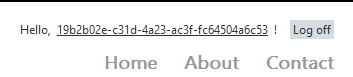
userData);

// add the ticket to the cookies

Response.Cookies.Add(new HttpCookie(FormsAuthentication.FormsCookieName, FormsAuthentication.Encrypt(authTicket)));

}

If you now run the project, attempt to sign into HealthVault, you will notice the ‘login section’ of the page is now displaying user information and a ‘log off’ link’ as follows.



Ideally, showing a GUID is not what we want but we will do clean up and tidying up in Part III of our article.

## Conclusion

In this part of the series, we looked at authenticating with HealthVault. We also looked at authenticating with our local system without the need of having the user enter two usernames and passwords, one for HealthVault and one for our local system. In Part III, we will look at tidying up the code to allow a better experience.