VRESCo Installation Guide

This guide represents a step-by-step tutorial for setting up VRESCo and the sample TELCO case study which can be either *IIS-hosted* (use step V and VI) or *self-hosted* (step VII).

I) Required Software

You need the following software to run VRESCo:

- Administrator rights
- SVN client (e.g., Tortoise SVN: http://tortoisesvn.tigris.org/)
- .NET 3.0 or 3.5
- Visual Studio 2008
- Mysql Database 5.1 and Mysql Connector Net 6.2.2
- IIS (if services should be deployed using IIS Hosting)

II) SVN Checkout

First of all, check out the source code from sourceforge:
https://vresco.svn.sourceforge.net/svnroot/vresco

III) Configure Hibernate and MySQL database

The hibernate configuration can be found in *hibernate.cfg.xml*. Do not forget to create the database as indicated in this file (e.g., vresco). Furthermore, you have to install MySQL Connector Net to use the Mysql database (see *Web.config* for the configuration of the driver).

IV) Security Setup

Next, you have to setup the certificates for the VRESCo authentication and authorization features.

Certificates

First of all, you need to create the certificates on both client and server side. Therefore, open the Management Console (`mmc.exe`). Add the Snap-Ins for *Certificates* for both *LocalComputer* and *CurrentUser*.

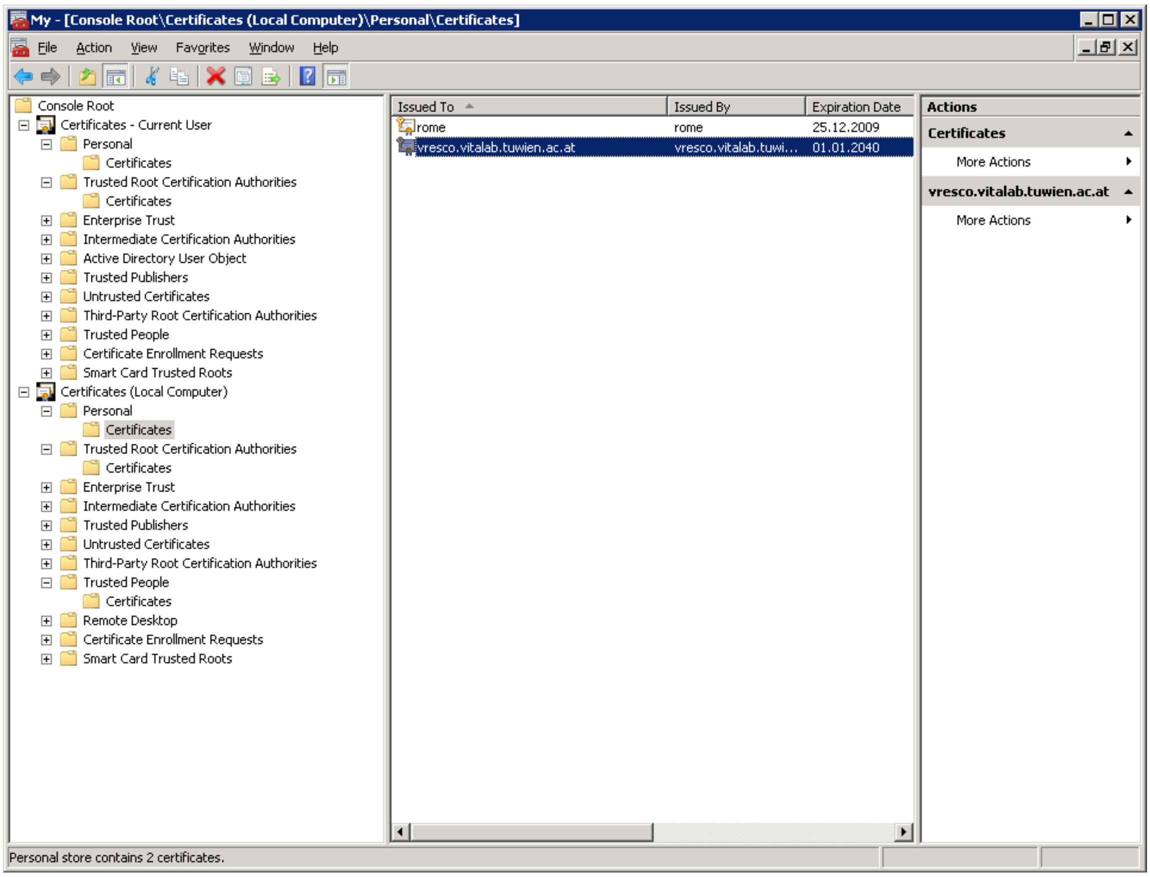
Server Certificate

1) Create the server certificate under Visual Studio 2008 Command Prompt:

   ```
   makecert -r -pe -n CN=localhost -ss my -sr localmachine -sky
   exchange -sp "Microsoft RSA SChannel Cryptographic Provider" -sy
   12 vresco.crt
   ```

   This command creates a certificate including private key which is stored in *LocalMachine\My Certificates.* In addition, `vresco.crt` is created in the current working directory.

   Hints: The certificate name (CN) should be set to the domain name. `makecert.exe` is usually found in `C:\Program Files\Microsoft SDKs\Windows\v6.0\Bin`
2) In Snap-In *LocalMachine* import `vresco.crt` (i.e., without private key) to *Trusted Root Certification Authorities*.
3) In Snap-In *CurrentUser* import `vresco.crt` (i.e., without private key): *Personal* and *Trusted Root Certification Authorities*.



My - [Console Root\Certificates (Local Computer)\Personal\Certificates]
File
Action
View
Favorites
Window
Help
Console Root
Certificates - Current User
Personal
Certificates
Trusted Root Certification Authorities
Certificates
Enterprise Trust
Intermediate Certification Authorities
Active Directory User Object
Trusted Publishers
Untrusted Certificates
Third-Party Root Certification Authorities
Trusted People
Certificate Enrollment Requests
Smart Card Trusted Roots
Certificates (Local Computer)
Personal
Certificates
Trusted Root Certification Authorities
Certificates
Enterprise Trust
Intermediate Certification Authorities
Trusted Publishers
Untrusted Certificates
Third-Party Root Certification Authorities
Trusted People
Certificates
Remote Desktop
Certificate Enrollment Requests
Smart Card Trusted Roots
Actions
Certificates
More Actions
vresco.vitalab.tuwien.ac.at
More Actions

Issued To	Issued By	Expiration Date
rome	rome	25.12.2009
vresco.vitalab.tuwien.ac.at	vresco.vitalab.tuwi...	01.01.2040

Personal store contains 2 certificates.

Client Certificate

4) Create the client certificate for the client under Visual Studio 2008 Command Prompt:

```
makecert -r -pe -n CN=vrescoClient -ss my -sr currentUser -sky
exchange -sp "Microsoft RSA SChannel Cryptographic Provider" -sy
12 vrescoClient.crt
```

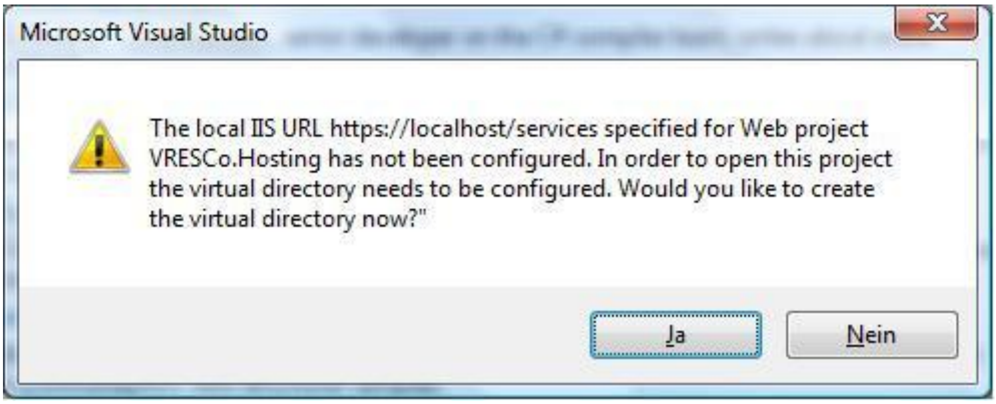
This command creates a certificate including private key which is stored in *CurrentUser\My Certificates.* In addition, `vrescoClient.crt` is created in the current working directory.

5) In Snap-In *CurrentUser* import `vrescoClient.crt` to *Trusted Root Certification Authorities.*

6) In Snap-In *LocalMachine* import `vrescoClient.crt` to *Trusted People* and *Trusted Root Certification Authorities.*

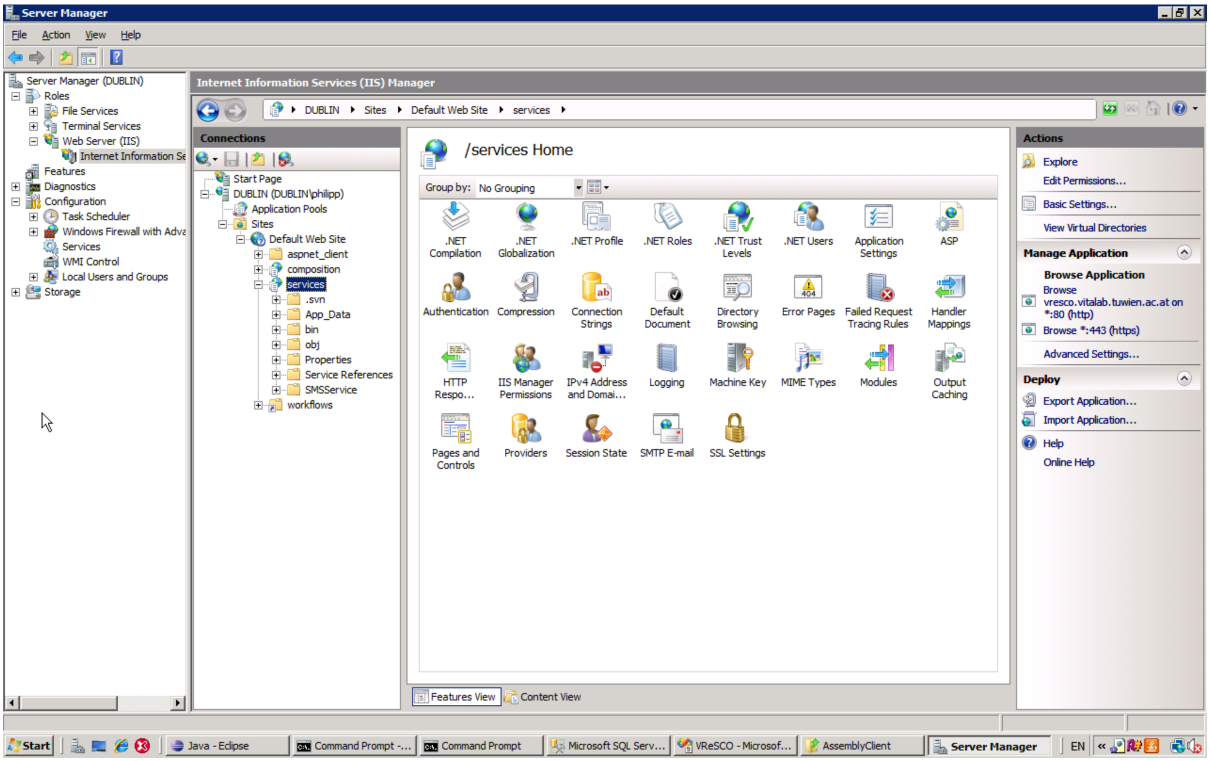
V) Configure VRESCo.Hosting project (IIS Hosting)

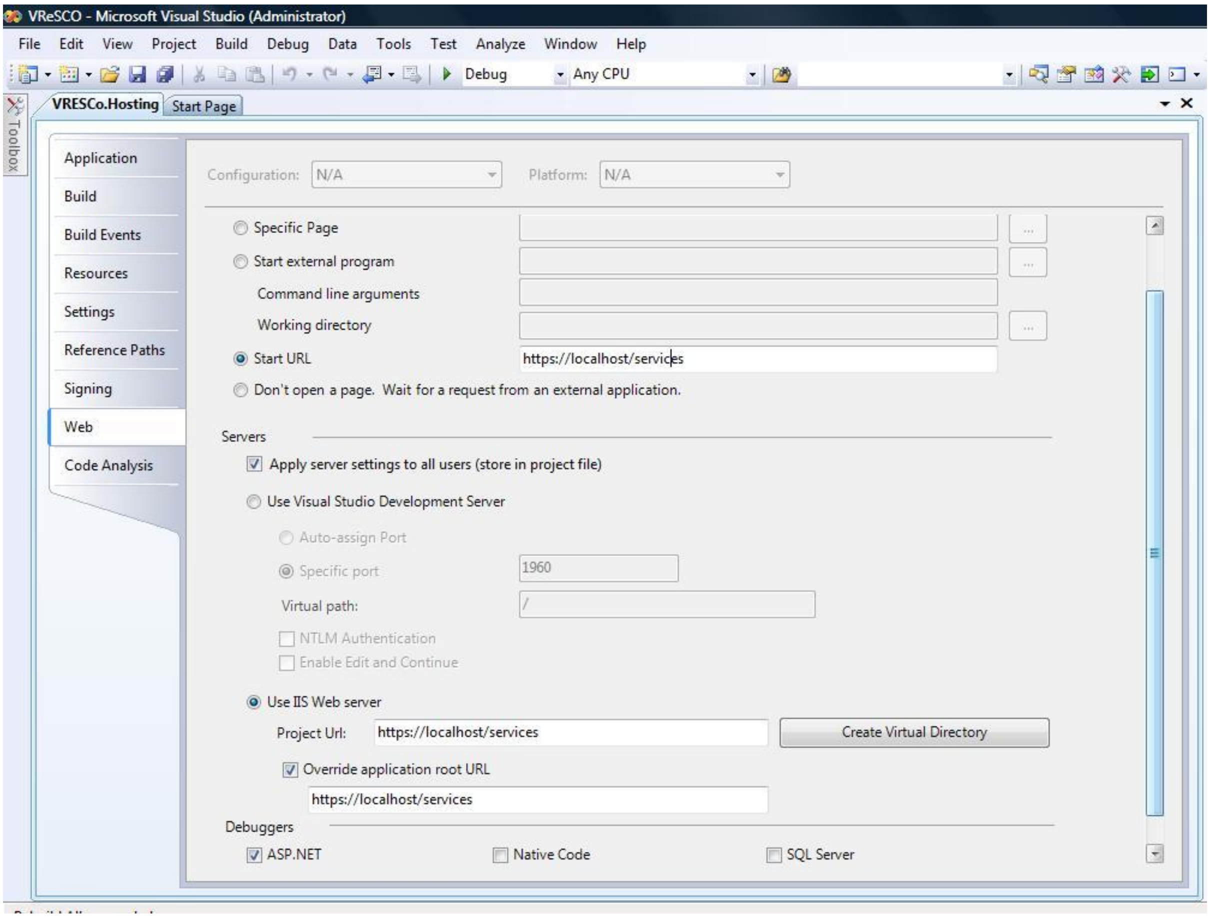
When you open the solution in Visual Studio (vresco.sln), the following warning may appear:



The local IIS URL https://localhost/services specified for Web project VRESCo.Hosting has not been configured. In order to open this project the virtual directory needs to be configured. Would you like to create the virtual directory now?"

Click “Yes” (“Ja”) to setup the virtual directory settings. Then, open the *IIS Management Console* to create an application called *“services”* under the *Default Web Site*. The application must have a physical path to the location of the *VRESCo.Hosting* project.





Configuration: N/A Platform: N/A

○ Specific Page

○ Start external program

Command line arguments

Working directory

● Start URL https://localhost/services

○ Don't open a page. Wait for a request from an external application.

Servers

☑ Apply server settings to all users (store in project file)

○ Use Visual Studio Development Server

○ Auto-assign Port

● Specific port 1960

Virtual path: /

□ NTLM Authentication

□ Enable Edit and Continue

● Use IIS Web server

Project Url: https://localhost/services

☑ Override application root URL

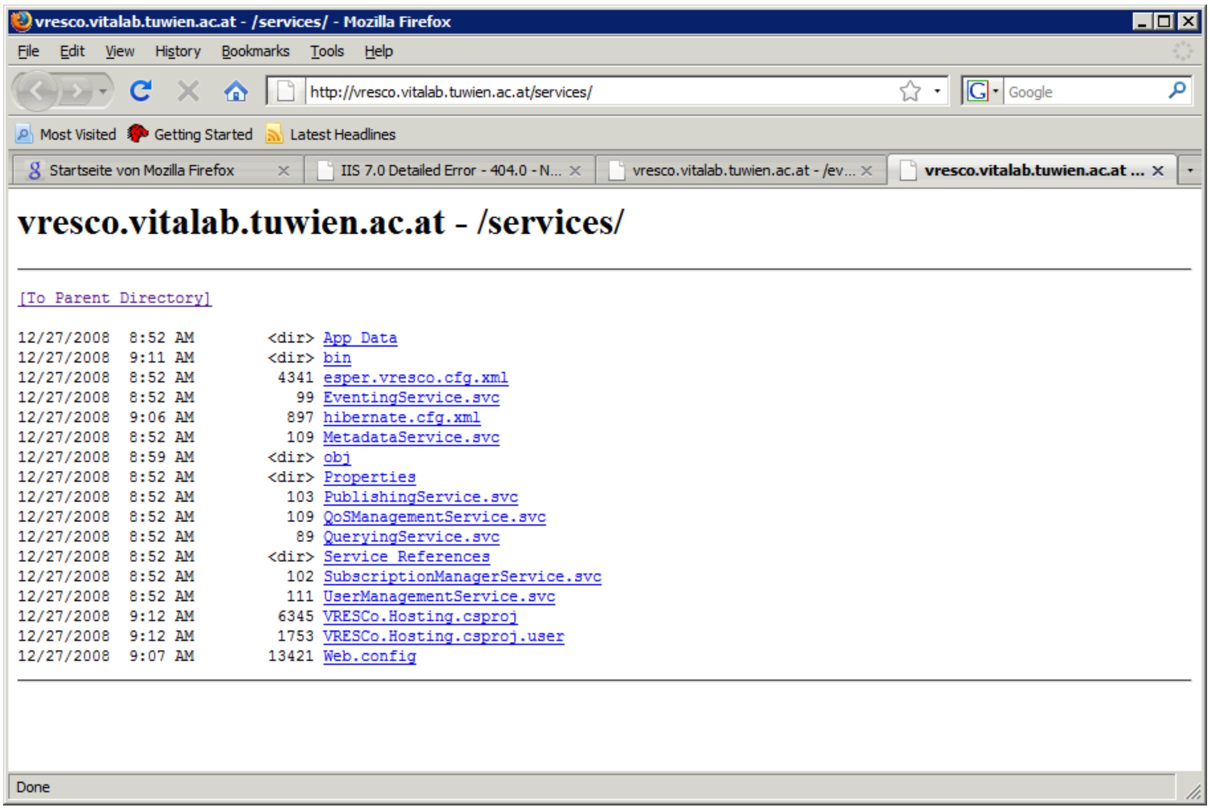
https://localhost/services

Debuggers

☑ ASP.NET □ Native Code □ SQL Server

VI) Launching the VRESCo.Hosting project

Now we can try to launch the *VRESCo.Hosting* project by running the project (without debugging). If everything works fine your default browser will come up, showing the following screen:


vresco.vitalab.tuwien.ac.at - /services/ - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://vresco.vitalab.tuwien.ac.at/services/
Google
Most Visited Getting Started Latest Headlines
Startseite von Mozilla Firefox
IIS 7.0 Detailed Error - 404.0 - N...
vresco.vitalab.tuwien.ac.at - /ev...
vresco.vitalab.tuwien.ac.at ...
Done

vresco.vitalab.tuwien.ac.at - /services/

```
[To Parent Directory]

12/27/2008  8:52 AM        <dir> App_Data
12/27/2008  9:11 AM        <dir> bin
12/27/2008  8:52 AM         4341 esper.vresco.cfg.xml
12/27/2008  8:52 AM           99 EventingService.svc
12/27/2008  9:06 AM          897 hibernate.cfg.xml
12/27/2008  8:52 AM          109 MetadataService.svc
12/27/2008  8:59 AM        <dir> obj
12/27/2008  8:52 AM        <dir> Properties
12/27/2008  8:52 AM          103 PublishingService.svc
12/27/2008  8:52 AM          109 QoSManagementService.svc
12/27/2008  8:52 AM           89 QueryingService.svc
12/27/2008  8:52 AM        <dir> Service References
12/27/2008  8:52 AM          102 SubscriptionManagerService.svc
12/27/2008  8:52 AM          111 UserManagementService.svc
12/27/2008  9:12 AM         6345 VRESCo.Hosting.csproj
12/27/2008  9:12 AM         1753 VRESCo.Hosting.csproj.user
12/27/2008  9:07 AM        13421 Web.config
```

This screen shows the content of your IIS virtual directory "*services*". To test the setup, click on one of the services (e.g., PublishingService.svc). If you see an overview page including link to the WSDL file, the setup has been completed successfully.

Please note that if you get an error complaining that no application handler is available for SVC, you have to install WCF handlers in IIS (http://blog.mijalko.com/2009/02/missing-svc-handler.html).

VII) Configure Self-Hosting project

When using *self hosting* (project *VRESCo.Selfhosting*), the ports which use certificates have to be associated with the certificates. In our example, these are the ports 30000 to 30006.

Windows XP:

Under *Windows XP* this is done using `httpcfg.exe` which is part of *Windows XP Service Pack 2 Support Tools* (http://www.microsoft.com/downloads/details.aspx?FamilyId=49AE8576-9BB9-4126-9761-BA8011FABF38&displaylang=en). For each port that uses secure connections, `httpcfg` has to be invoked as follows (the thumbprint can be found in the server certificate):

```
httpcfg set ssl /i 127.0.0.1:[SERVER PORT] /h [SERVER CERTIFICATE THUMBPRINT] -c My -m 1
```

For instance:

```
httpcfg set ssl /i 127.0.0.1:30000 /h 78dd8fd915093fceff6514166d1c9cb87b94ce45 -c My -m 1
```

If the command succeeds, the tool returns *"pSetServiceConfiguration completed with 0."*.

The following command can be used to check the certificate association:

```
httpcfg query ssl
```

The following command can be used to delete a certificate from a port:

```
httpcfg delete ssl –i 127.0.0.1:[PORT]
```

Windows Vista:

Under Windows Vista the tool `netsh.exe` is used to associate certificates as follows:

```
netsh http add sslcert ipport=0.0.0.0:30000 certhash=[THUMBPRINT]
appid=[{APPID}]
```

For instance:

```
netsh http add sslcert ipport=0.0.0.0:30000
certhash=78dd8fd915093fceff6514166d1c9cb87b94ce45 appid={00112233-
4455-6677-8899-AABBCCDDEEFF}
```

The certificate association is shown using the following command:

```
netsh http show sslcert
```

The certificate association is deleted using the following command:

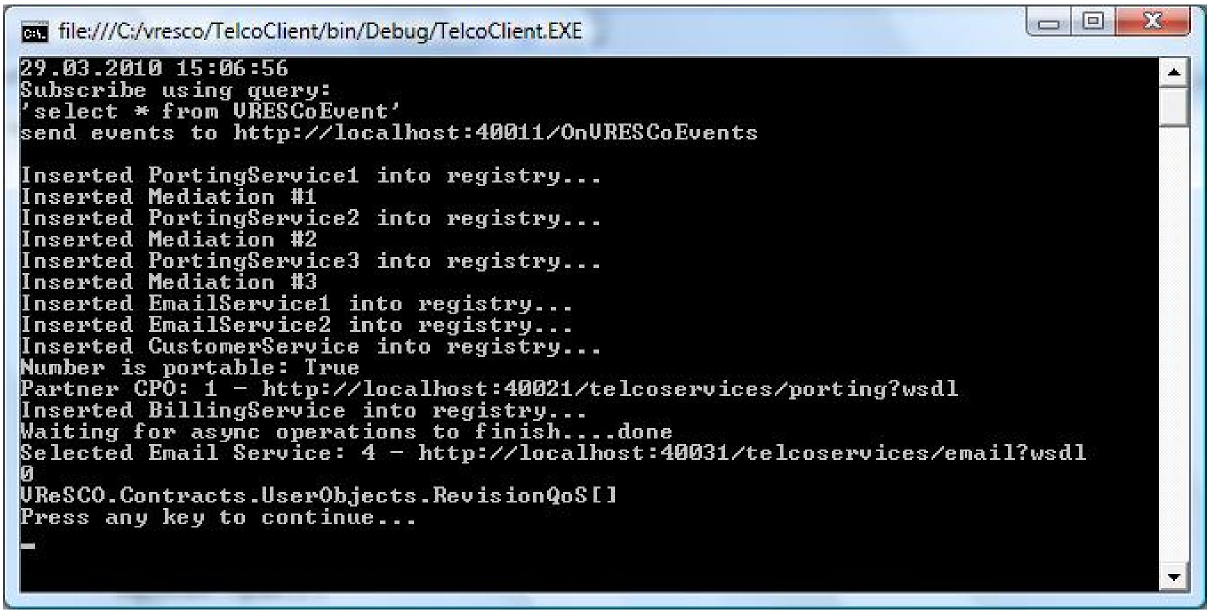
```
netsh http delete sslcert ipport=0.0.0.0:30000
```

Finally, if you start the project from Visual Studio, you should again see the screen shown in step V.

VIII) Running the TELCO Client

Finally, you can run the client of the Telco case study (TelcoClient). The *app.config* defines where the VRESCo services are running. If you use IIS Hosting (step V) you can just start the client program. If you use self-hosting (setp VII), please rename *app_selfhosting.config* to *app.config*.

The following figure shows the output that you should see if everything works:



```
29.03.2010 15:06:56
Subscribe using query:
'select * from VRESCoEvent'
send events to http://localhost:40011/OnVRESCoEvents

Inserted PortingService1 into registry...
Inserted Mediation #1
Inserted PortingService2 into registry...
Inserted Mediation #2
Inserted PortingService3 into registry...
Inserted Mediation #3
Inserted EmailService1 into registry...
Inserted EmailService2 into registry...
Inserted CustomerService into registry...
Number is portable: True
Partner CPO: 1 - http://localhost:40021/telcoservices/porting?wsdl
Inserted BillingService into registry...
Waiting for async operations to finish....done
Selected Email Service: 4 - http://localhost:40031/telcoservices/email?wsdl
0
VReSCO.Contracts.UserObjects.RevisionQoS[]
Press any key to continue...
_
```