Fm.EHF.EHFUtility

# Description

EHFUtility is a .NET-library to simplify EHF-related tasks in .NET. Use this utility to:

* Validate EHF-documents using DIFIs validationservice
* Send EHF-documents
* Perform SMP and SML lookup

What you can’t do with this library:

* Receive PEPPOL-documents (Oxalis is a complete access point wich can receive documents and send documents (java or command-line))
* Generate EHF-xml. If you want to generate .NET-classes for EHF-Invoice: download XSD-schemas from DIFIs VEFaValidator-tool and use Xsd2Code or other tool

EHFUtility uses a modified version of PEPPOLs START-library (upgraded from .NET 3.5 to 4.5 with integrated support for claims) to send PEPPOL documents. Validation is performed using DIFIs validationservice (you can install your own, see here).

To use the library:

var xml = new XmlDocument();

xml.Load(@"SampleData\fminvoice.xml");

var ehfUtility = new EHFUtility();

//To validate document using DIFIs validationservice:

ValidationResult validationResult = ehfUtility.ValidateDocument(xml);

//Lookup service metadata:

SmpInformation lookupFm = ehfUtility.LookupSMP("9908:974763907");

//Send invoice:

SendResult sendResult = ehfUtility.SendDocument(xml, "9908:453463465", "9908:974763907");

# Installation

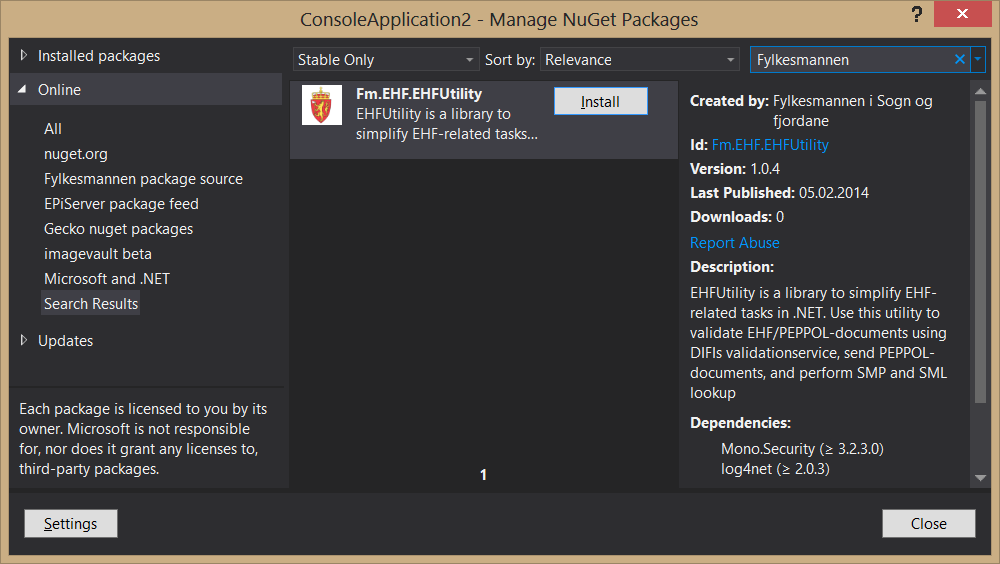
Short version:

1. Add NuGet-package
2. Install PEPPOL root certificates into trusted root certification authorities
3. Create keystore with your private key and certificate issued by PEPPOL
4. Modify app.config/web.config

Long version:

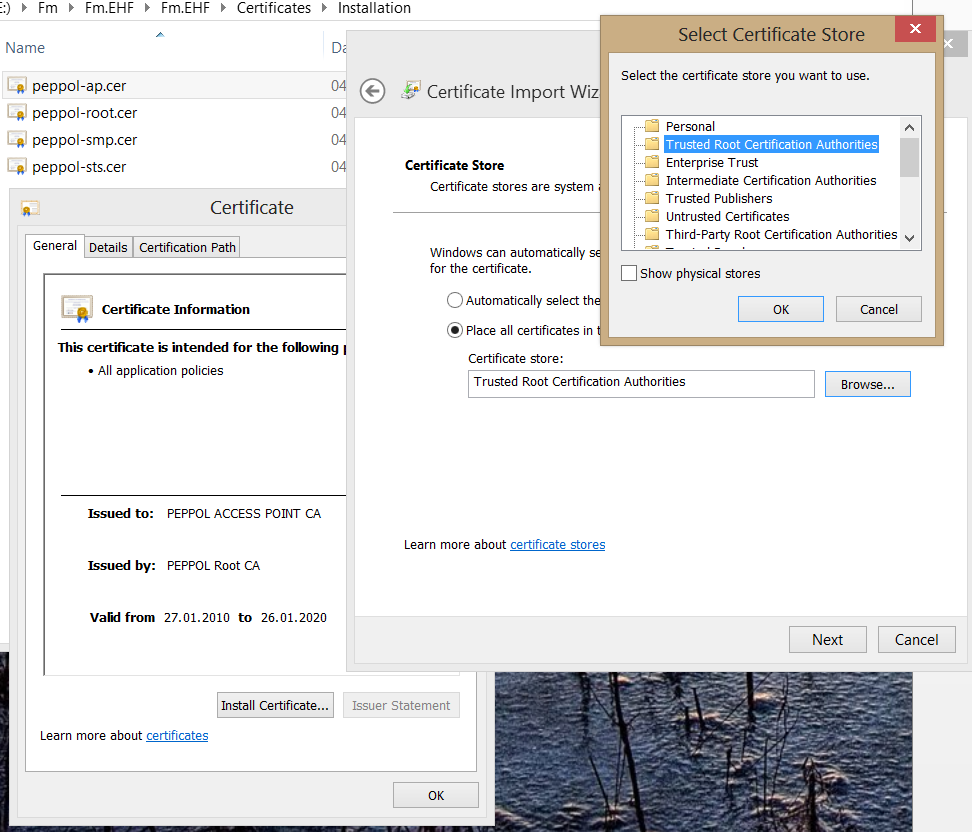
## Add NuGet-package

Right click project/solution->Manage NuGet-packages->nuget.org->search for «EHF» or «Fylkesmannen»



## Install PEPPOL root certificates

The NuGet-package added a folder in your project, open folder Certificates\Installation\ in explorer. Install all root certificates from PEPPOL to Local machine->Trusted Root Certification Authorities



These certificates are needed for validation of certificates from other access points, SMP, etc.

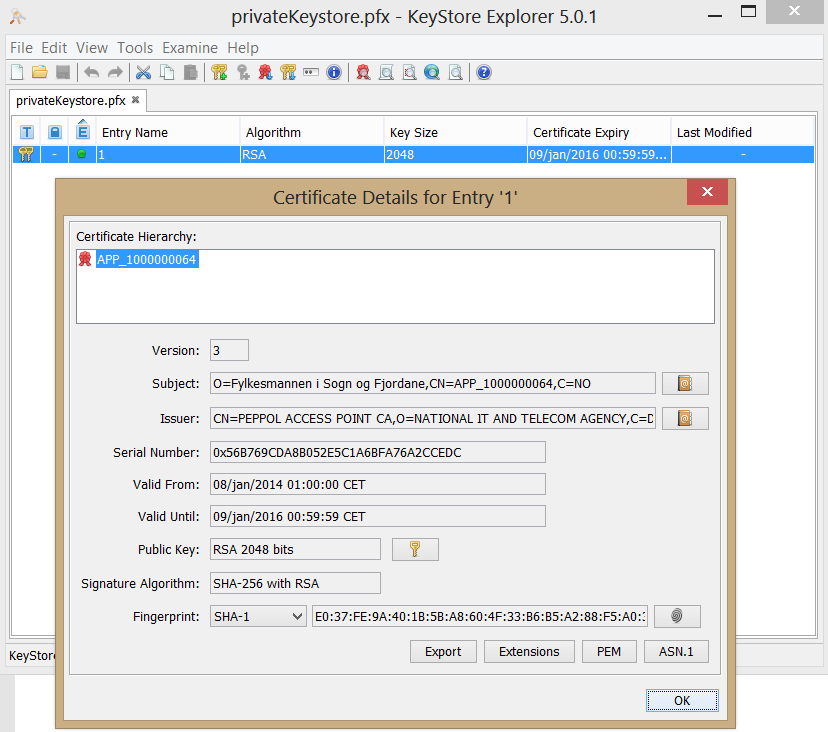
The certificates included in the NuGet-package are «live»-certificates. If you want to setup an test-environment, download certificates from PEPPOL

Download root certificates from PEPPOL here:

* <https://onsite.verisign.com/services/DigitaliseringsstyrelsenOpenPEPPOLSECURITYTOKENSERVICECA/digitalidCenter.htm>
* <https://onsite.verisign.com/services/DigitaliseringsstyrelsenOpenPEPPOLACCESSPOINTCA/digitalidCenter.htm>
* <https://onsite.verisign.com/services/DigitaliseringsstyrelsenOpenPEPPOLSERVICEMETADATAPUBLISHERCA/digitalidCenter.htm>

## Install your own certificate

You need to obtain a certificate from PEPPOL identifying you to other PEPPOL-services. Look here (TODO) for more information.

1. Download KeyStore Explorer from <http://keystore-explorer.sourceforge.net/downloads.php>. (or use other tools)
2. Create new keystore->PKCS #12->Save as «Certificates\privateKeystore.pfx». Enter a password «changeit» (or something else)
3. Generate your private key and certificate signing request:
   1. Right click->generate Key Pair->RSA 2048->fill in information
   2. Right click key pair->generate CSR (certificate signing request)
   3. Upload request.CSR to PEPPOL, get your certificate in return «reply from peppol.p7r»
   4. Right click key pair->Import CA reply
4. Your certificate from PEPPOL should look like this:
5. Your privateKeystore.pfx should look like this:  
     
   It should only contain one entry! If you have two entries you did it wrong ☺
6. Configure password to your keystore in app.config:  
   <clientCertificate filename="Certificates\privateKeystore.pfx" password="changeit" />

## Modify app.config

The NuGet-package adds a config-section automatically:

<?xml version="1.0" encoding="utf-8"?>

<configuration>

<configSections>

<section name="peppol.certificates" type="STARTLibrary.src.eu.peppol.start.security.configuration.CertificatesConfigurationSection, STARTLibrary45" />

</configSections>

If you are using test-certificates in stead of live you have to change thumbprints used for validation:

<add name="MyRootCertificates"

rootCACertificateThumbprint="C55F371D9B3C3A54A06FD51E02E43F9E90F6D65C"

intermediateSmpCACertificateThumbprint="9C200AB2044F67BA89D9ADE2180CCDE878639470"

intermediateAcessPointCACertificateThumbprint="696D7543E15F84A32A1121531D0551BCB3AAEA50" />

</validation>

Use the same endpointname in the peppol.certificates-section, WCF-configuration(system.servicemodel->client->endpoint->name) and when creating your EHFUtility-instance.

<clientCredentials>

<add endpointName="SecurePeppolClient">

If you are testing against a specific endpoint/access point, fill in that servers public key in the serviceCertificate-element:

<serviceCertificate encoded="MIIESzCCAzOgAwIBAgIQVrdpzaiwUuXBpr+naizO3DANBgkqhkiG9w0BAQsFADBX&#xD;&#xA;MQswCQYDVQQGEwJESzEnMCUGA1UEChMeTkFUSU9OQUwgSVQgQU5EIFRFTEVDT00g&#xD;&#xA;QUdFTkNZMR8wHQYDVQQDExZQRVBQT0wgQUNDRVNTIFBPSU5UIENBMB4XDTE0MDEw&#xD;&#xA;ODAwMDAwMFoXDTE2MDEwODIzNTk1OVowUDELMAkGA1UEBhMCTk8xFzAVBgNVBAMM&#xD;&#xA;DkFQUF8xMDAwMDAwMDY0MSgwJgYDVQQKDB9GeWxrZXNtYW5uZW4gaSBTb2duIG9n&#xD;&#xA;IEZqb3JkYW5lMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAqNLdts3A&#xD;&#xA;xyYW98n-REMOVED-&#xD;&#xA;BgNVHQ4EFgQULr75Ch041QO4LsB0aNwUczyYrXowNwYIKwYBBQUHAQEEKzApMCcG&#xD;&#xA;CCsGAQUFBzABhhtodHRwOi8vcGtpLW9jc3Auc3ltYXV0aC5jb20wEwYDVR0lBAww&#xD;&#xA;CgYIKwYBBQUHAwIwDQYJKoZIhvcNAQELBQADggEBAIAI5Y2TD1Ld61XzCHpRWbQL&#xD;&#xA;1rBiP0okp3KBugtdfUJJ76UArUDwajsSMRetPYmRNgZYY1ix2FfPcJ4wBJf4i85d&#xD;&#xA;jXSJUsjQmqbZ0LBoUqYrxGJdbK0Gjn38zwm4z3ucjKHMjTIn3cRE9TS74q2RakNw&#xD;&#xA;nA1gjiNKKXtBN2VIHXUHRzDKZ6Hd42XhJgj477rwn92U0LOlZU3sLgmSLqs5GCbF&#xD;&#xA;JXVri40NcliDCre3bQe2cUy26fdd6FnC2Z1S2sZ9wFQ7tuWjG6cdfJ301Pdjh7RV&#xD;&#xA;wOzV1+VsORHVh8rgJKWkgVsDErunJVwEPeDeIL0KxUR0BvLU3ygwQR3HaW6iXmQ="/>

</add>

</clientCredentials>

</peppol.certificates>