# GLOBETEAM

# Danmarks Miljøportal (DMP)

Vejledning til fagsystemejere omkring tilkobling af Java Metrobaseret web service

Version 1.2

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#### Indledning

Denne vejledning beskriver, hvordan man tilkobler en Java-baseret web service (WS) til brug med DMP's føderale brugerstyringsløsning ved brug af Sun Metro.

Vejledningen skal læses i konteksten af den overordnede vejledning "Vejledning til fagsystemejere omkring forløbet for tilkobling af en applikation".

Vejledningen forudsætter at Java Metro benyttes til claims-enabling af web service'n. Denne vejledning er således ikke brugbar, såfremt man ønsker at anvende et andet API til claimsenabling af web services.

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# Forudsætninger for tilkobling af en Java-baseret web service og web services klienter

Udviklingen af Java-baserede web services og web services klienter forudsætter et godt kendskab til Java (herunder Java Web). Det må endvidere anbefales at der hersker en god forståelse for Netbeans og evt. Metro/Glassfish.

For mere information om disse teknologier henvises der til:

https://metro.java.net/2.3/ http://download.java.net/glassfish/4.0/release/glassfish-4.0.zip http://download.netbeans.org/netbeans/8.0/final/bundles/netbeans-8.0-windows.exe https://metro.dev.java.net/2.0.1/ https://glassfish.dev.java.net/downloads/3.0.1-final.html http://netbeans.org/community/releases/69/

#### De praktiske krav

Det er valideret at det er muligt at tilkoble en Java-baseret WS med brug af Metro version 2.0.43, Glassfish version 3.0.14.0 og Netbeans version 8.06.9. Erfaringen tilsiger at dette ikke udgør nogen garanti i relation til andre versioner end de nævnte, hvorfor det anbefales at benyttes disse versioner indtil anden information måtte fremkomme.

**Bemærk:**Hvis du udvikler Java-baserede Web Services klienter er kravet i skrivende stund Metro 2.4–<u>3</u> (dvs. 2.01 vil IKKE virke) i seneste promoted build: http://java.net/projects/metro/downloads/directory/promoted

Metro 2.1–3 leveres automatisk med den seneste promoted version af Glassfish i version 34.01: <u>http://dlc.sun.com.edgesuite.net/glassfish/4.0/promoted/</u> <u>http://dlc.sun.com.edgesuite.net/glassfish/3.1/promoted/</u>

Der kræves ligeledes, at Java Cryptography Extensions er installeret på serveren eller klienten som anvender services. http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html

Vejledningen til at koble web services op mod DMP er den samme om man vælger Glassfish <u>3.14.0</u> og Metro 2.<u>3</u>4.

Det udviklede Java WS sample er naturligvis baseret på ovennævnte versioner.

#### Certifikaterne er din største fejlkilde

Når man ser bort fra deciderede kodefejl i selve WS'en og WS-klienten, så er brugen og konfigureringen af certifikater den absolut største kilde til fejl i forbindelse med claims-enabling af en løsning.

Derfor anbefales det på det kraftigste at at udviklere såvel som infrastrukturfolk er meget omhyggelige på denne kant, idet langt størsteparten af de fejl og problemer, der forekommer i relation til claims-enabling, viser sig at udspringe i og omkring certifikaterne.

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### Tilkoblingen af en Java-baseret WS

Sikkerheden for Web Services på DMPs AD FS 2.0Idenitfy STS-løsning er baseret på følgende standarder:

- WS-Trust 1.3
- Message-baseret sikkerhed (dvs. HTTP-transport med message-baseret kryptering og signering)
- SAML 1.1 eller SAML 2.0 tokens. Det skal aftales i forvejen med DMP, hvilken type tokens, der anvendes.
- Der anvendes symmetriske nøgler til kryptering
- Key size er 256
- Algorithm suite er Basic256
- Security Header Layout er Lax
- Der kan autentificeres med AD-FSSTS'en med User Name. Brugernavn og adgangskode skal mappe op mod en bruger oprettet i Danmarks Miljøportals administratorløsning
- Der kan autentificeres mod AD FS'en med x509. X509 certifikatet skal udstedes af DMP og mappe op mod en bruger oprettet i Danmarks Miljøportals administratorløsning
- Der anvendes ikke service certificate negotiation mod AD-FS-2.0Identify STS'en
- Der er frit valg om der anvendes service certificate negotation mod Web Services
- Der er frit valg om der anvendes Secure Conversation mod Web Services. Bemærk dog at for Java er det deaktiveret i samples pga dårlig kompatibilitet mellem .NET og Java, når det kommer til Secure Conversation. Det anbefales således at undgå Secure Conversation indtil videre.

#### End points for DMP's STS er angivet nedenfor:

#### User name authentication

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MEX		
-	https://log-in.miljoeportal.dk/ <del>adfs</del> runtime/services/trust/mex (produktionsmiljø)	 Field Code Changed
-	https://log-in.test.miljoeportal.dk/ <del>adfs</del> runtime/services/trust/mex (testmiljø)	Field Code Changed

Bemærk at samples'ne som udgangspunkt er bygget til brug med produktionssystemet<u>testsystemet</u>. De vil dog naturligvis kunne tilpasses til at bruge <del>testsystemet</del> produktionssystemet blot ved at udskifte URL'erne (og evt. certifikater) på end points'ne.

Det anbefales så vidt muligt, at udviklerne tager udgangspunkt i de medfølgende samples, når der oprettes nye WS'er. De mange opsætningsmuligheder i Java vil ellers hurtigt kunne risikere at gøre det til en uoverskuelig opgave at konfigurere alt det ovenstående i hånden.

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#### Sådan kobles WS'en op mod DMP

Der er kun en enkelt fysisk forudsætning for tilkoblingen af en Java-baseret web service. Der skal foreligge et X.509-certifikat fra en offentlig CA. Dette X.509-certifikat skal benyttes til encryption på WS'en.

Hver enkelt web service, der kobles op mod DMPs <u>AD-FS-2.0Identify</u> STS skal således være udstyret med et sådant unikt certifikat.

Hvis der benyttes x509 til også at autentificere mod <u>AD-FS-2.0Identify STS'en</u> kræver det dog tillige at der er udstedt et certifikat fra DMPs egen PKI.

#### Trin 1: Anskaffelse af det nødvendige certifikat

Der skal erhverves et certifikat til hver WS:

• Et certifikat til kryptering af beskeder mellem DMP og web servicen. Dette certifikat er ikke at forveksle med SSL-certifikatet, idet certikatet benyttes til at gøre det muligt for STS'en at kryptere beskeder, som kun servicen kan læse.

Som nævnt i vejledningen: "Vejledning til fagsystemejere omkring forløbet for tilkobling af en applikation" skal encryption certifikatet overleveres til DMP uden den private nøgle. Dvs. DMP skal have certifikatets public key-del.

#### Applikationens krypteringscertifikat

Krypteringscertfikatet skal erhverves hos en offentlig og anerkendt CA. Vi anbefaler især <u>http://www.godaddy.com</u>, da de er godkendte i alle større browsere og er markant billigere end de store spillere såsom Verisign og Thawte. Vi anbefaler tilsvarende at dette erhverves som et almindeligt SSL-certifikat.

Det skal som nævnt ikke bruges til SSL, men SSL-certifikaterne er generelt billigst, og de dækker de behov et certifikat skal opfylde for at kunne benyttes som krypteringscertifikat. Modsat et certifikat der benyttes til SSL-trafik, så skal dette certifikat ikke være udstedt til et bestemt common name. Common name er ligegyldigt for krypteringscertifikatet. Vi anbefaler dog stadig, at der vælges et sigende common name for certifikatet (f.eks.

CN=<applikationsnavn>encryption.<organisationsnavn>.dk).

#### Trin 2: Konfiguration af WS'en

Konfigurationen af WS'en til brug op mod DMPs STS er beskrevet i næste afsnit.

#### Information omkring sikkerhedsrelateret logning

Claims er konsistente og valide repræsentationer af brugeren, der er logget ind via STS'en, som i vort tilfælde er DMP's føderale brugerstyring. Claims overføres til applikationen ved hjælp af sikre offentlige standarder, der garanterer for at overleveringen af claims til applikationen er sikker og pålidelig.

Hvis applikationen benytter sig af sikkerhedsrelateret logning kan brugerens claims således fint benyttes i denne sammenhæng. Der er med andre ord ikke nogen forskel på logning i et føderalt scenarie relativt til et traditionelt brugerlogin. Det er dog naturligvis vitalt at man tilsikrer at logningen som minimum indbefatter de claims, der sikrer at der kan ske en entydig identifikation af brugeren til et hvilke som helst senerekommende tidspunkt (dvs. logningen skal indbefatte en unik identifier såvel som de nødvendige informationer, der gør det muligt at finde tilbage til hvem denne unikke bruger var).

#### Step-by-step eksempel på tilkoblingen af en Java-baseret WS

Følgende step-by-step guide beskriver, hvordan du opsætter og konfigurerer en Metro-baseret Web Service, der er baseret på Netbeans.

#### Beskrivelsen tager delvist udgangspunkt i den .Net-baserede solution

(DmpAdfs2DotNetSamplesDmpIdentifyDotNetSamples.sln), der er udarbejdet til brug for vejledningen omkring tilkobling af en .Net-baseret web service, i og med at den benytter den .Netbaserede web service-klient fremfor at rumme en Java-baseret WS-klient. Java servicen skal bygges fra bunden i denne step-by-step guide for at garantere at servicen bliver korrekt bagt ind i Glassfish web serveren.

Når disse trin er udført vil du have en kørende Java Metro-baseret Web Service på din egen maskine samt en .NET unit test (dvs. i al praksis en minimal WS-klient), der rekvirerer et token fra DMPs <u>AD FS 2.0Identify STS</u> og påhæfter det et kald til Java WS'en.

#### 1. Åbn solution'en i Visual Studio 2010



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3. Certifikaterne: "servicecommunication.miljoeportal.dk.cerlog-in.test.miljoeportal.dk signing.cer", "tokensigning.miljoeportal.dk.cer", "servicecommunication.test.miljoeportal.dk.cer" og "tokensigning.test.miljoeportal.dk.cer"\_installeres i Local Machine -> Trusted People

File Action View Favorites W	<u>V</u> indow <u>H</u> elp					- 6
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4. Certifikaterne "DMP CA.cer" og "DMP CA (TEST).cer" installeres i Local Computer -> Trusted Formatted: English (United States) Root Certification Authorities:

1

File Action View Favorites V	Vindow Help			_
Console Root	Issued To	Issued By	Expiration ^	Actions
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Other People	Contractor of Contractor Automatic 78	States of California States	de la da	
Homegroup Machine Certifie	Tenned and Second Second Confidentiation	States of Seconderes Collins.	9-01-04	
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Console Root	Issued To 🔺	Issued By	Expiration Date
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Certificates	and the standard at	DO, MOT., TRUET, Published	10211-1020688
Trusted Root Certification Authorities	Raffmann Collar Trust Roat	Reference Caller Trust Heat	NO DOM: N
Certificates	Care 1 Public Prevary Carlification	Case 3 Public Network Carl Routine A	10/12/10/07
Enterprise Trust	Convergences and second from	Country of the second law.	100704/10080
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E Cutter People	COMP. CO.	1000 124	ALC: UNKNOWN
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5. <u>sampleKk</u>eystore.jks-filen kopieres til default domænet i Glassfish. I dette eksempel bruger vi "domain1". Denne fil indeholder det certifikat med private key som web servicen skal bruge.

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) → Joo → glassfist	n-4.1 → glassfish → domains → domain1 → conf	ig 🔻 🛂 Se	earch config	
rganize 👻 🙏 Open	▼ New folder			· ·
🔆 Favorites	Name *	Date modified	Туре	Size
🧮 Desktop	C advantation	401/0014 (2.10-MR	-	1.0
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	10 million and a config 1.1 million	4010/0014 (2:30-000	1996, Document	



### 6. Netbeans åbnes og der oprettes et nyt Java Web projekt.

7. Tryk Next.

New Web Application	
Steps	Name and Location
Choose Project     Choose Project     Arme and Location     Server and Settings     Frameworks	Project Name:       DmpAdfs2JavaSamples         Project Location:       C:\Documents and Settings\Administrator\My Documents\WetBeansProjects         Project Eolder:       Settings\Administrator\My Documents\WetBeansProjects\DmpAdfs2JavaSamples         Image: Use Dedicated Folder for Storing Libraries       Btowse         Ubraries Folder:       Btowse         Different users and projects can share the same compilation libraries (see Help for details).       Btowse
	Project Folder already exists and is not empty.
New Web Application	
New Web Application	Name and Location
New Web Application     Steps     Choose Project     Ame and Location     Server and Settings     Frameworks	Name and Location         Project Name:       DMPIdentifySamples         Project Location:       peteam.com\Projekter i Danmarks Miljøportal\Identify Samples\Java         Browse       Project Eolder:         i Danmarks Miljøportal\Identify Samples
New Web Application  Steps  Choose Project  Mame and Location  Server and Settings  Frameworks	Name and Location         Project Name:       DMPIdentifySamples         Project Location:       beteam.com/Projekter i Danmarks Miljøportal/Identify Samples/Java         Browse       Project Eolder:         ' i Danmarks Miljøportal/Identify Samples/Java/DMPIdentifySamples         Use Dedicated Folder for Storing Libraries
New Web Application  Steps  Choose Project  Ame and Location  Server and Settings  Frameworks	Name and Location         Project location:         Project Location:         peteam.com\Projekter i Danmarks Miljøportal\Identify Samples\Java         Browse         Project Eolder:         i Danmarks Miljøportal\Identify Samples\Java\DMPIdentifySamples         I Use Dedicated Folder for Storing Libraries         Libraries Folder:         Different users and projects can share the same compilation libraries (see Help for details).
New Web Application  Steps  Choose Project  Server and Settings  Frameworks	Name and Location         Project Name:       DMPIdentifySamples         Project Location:       peteam.com\Projekter i Danmarks Miljøportal\Identify Samples\Java         Project Eolder:       i Danmarks Miljøportal\Identify Samples\Java\DMPIdentifySamples         I Use Dedicated Folder for Storing Libraries       Browse         Libraries Folder:       Browse         Different users and projects can share the same compilation libraries (see Help for details).       Browse

8. Tryk Next

New Web Application	
Steps	Server and Settings
1. Choose Project 2. Name and Location	Add to Enterprise Application: <a>None&gt;</a>
<ol> <li>Server and Settings</li> <li>Frameworks</li> </ol>	Server: GlassFish Server 3
	Use dedicated library folder for server JAR files
	Java EE Version: Java EE 6 Web 💌
	Enable Contexts and Dependency Injection
	Context Path: /DmpAdfs2JavaSamples
	< <u>Back</u> Next > Einish Cancel Help
The web Application	
Steps	Server and Settings
1. Choose Project	Add to Enterprise Application:
2. Name and Location 3. Server and Settings	
4. Frameworks	Server: GlassFish Server 4.1
	Java EE Version: Java EE 7 Web
	Context Path: //DMPIdentifySamples
	< <u>B</u> ack Next > Einish Cancel Help



10. Højreklik på projektet, vælg New Web Service... og tryk Finish.

New Web Service	
Steps	Name and Location
<ol> <li>Choose File Type</li> <li>Name and Location</li> </ol>	Web Service Name: JavaSamples
	Drojecti Dono Adfe 2 Java Sampler
	Package: com
	⊙ Create <u>W</u> eb Service from Scratch
	○ Create Web Service from Existing <u>S</u> ession Bean
	Enterprise Bean: Browse
	Implement Web Service as Stateless Session Bean
	🚯 The file JavaSamples.java already exists.
	< <u>Back</u> Next > Enish Cancel Help

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Steps	Name and Location
1. Choose File Type 2. Name and Location	Web Service Name: JavaSamples
	Project: DMPIdentifySamples
	Location: Source Packages
	Package: com
	✓ Create Web Service from Scratch
	C Create Web Service from Existing Session Bean
	Enterprise Bean: Browse
	Implement Web Service as Stateless Session Bean

- Højreklik på Web Servicen "JavaSamples", vælg Edit Web Service Attributes... og
   Sæt "Version Compatibility" til ".NET 3.5 / Metro 1.3 (requires METRO 1.3 or higher)"
  - Sæt vinge i "Secure Service"
  - Vælg "STS Issued Endorsing Token" i "Security Mechanism"

JavaSamples	X
Configure security, reliability and other WS-* features in the 'Quality Of Service' tab. Press F1 on a header for details spec to its section.	ific
Quality Of Service	
] JavaSamplesPortBinding	^
Version Compatibility: .NET 3.5 / METRO 1.3 (requires METRO 1.3 or higher)	
Optimize Transfer Of Binary Data (MTOM)	
Reliable Message Delivery	
Deliver Messages In Exact <u>O</u> rder	
Advanced	
Secure Service	
Security Mechanism: STS Issued Endorsing Token	
Random symmetric key for integrity and confidentiality protection, requests endorsed by an issued token from a designated STS. Message integrity and confidentiality protected using ephemeral key encrypted for the service. Service requires messages to be endorsed by a SAML Token issued by a designated STS.	
Use Development Defaults	
Keystore	
Validators	
Act As Secure Token Service (STS) Configure	
Allow TCP Transport	
Disable East Infoset	~
OK Cancel <u>H</u> elp	

	tBinding	
Version Compatibility:	.NET 3.5 / METRO 1.3 (requires METRO 1.3 or higher)	
C Optimize Transfer	, r Of <u>B</u> inary Data (MTOM)	
∏ <u>R</u> eliable Message	Delivery	
🗖 Deliver Messa	ges In Exact Order	
Advanced		
Jul Secure Service		
Secure Service		Carlinu-
Security Mechanis	m: STS Issued Endorsing Token	Configure
Secure Service Security Mechanis Random symme a designated S service. Service	m: STS Issued Endorsing Token etric key for integrity and confidentiality protection, requests en TS. Message integrity and confidentiality protected using ephen e requires messages to be endorsed by a SAML Token issued by	Configure ndorsed by an issued token from meral key encrypted for the y a designated STS.
Security Mechanis     Random symme     a designated S     service. Service      Vice Developm	m: STS Issued Endorsing Token stric key for integrity and confidentiality protection, requests er TS. Message integrity and confidentiality protected using ephere er requires messages to be endorsed by a SAML Token issued by the Defaults	Configure ndorsed by an issued token fro meral key encrypted for the y a designated STS.
Secure Service     Security Mechanis     Random symme     a designated S     service. Service     Vige Developm     Keystore	m: STS Issued Endorsing Token etric key for integrity and confidentiality protection, requests er TS. Message integrity and confidentiality protected using epherer e requires messages to be endorsed by a SAML Token issued by nent Defaults Irustatore Kerberos	Configure ndorsed by an issued token from meral key encrypted for the y a designated STS.
Secure Service     Security Mechanis     Random symme     a designated 5     service. Service     Jes Developm     Keystore     Validators	sts Issued Endorsing Token     stric key for integrity and confidentiality protection, requests et     requires messages to be endorsed by a SAML Token issued by     nent Defaults     Iruststore     Advanced	Configure ndorsed by an issued token from meral key encrypted for the y a designated STS.

## 12. Tryk på Configure... og

- Indtast <u>http://log-in.test.miljoeport</u>	al.dk/ <del>adfs</del> runtime/services/trust/ <del>13</del> 14/username i "Issuer		Field Code Changed
Address" (bemærk, at her skal URL'	en til det tilsvarende end point i testmiljøet anvendes, såfremt		
løsningen skal benyttes op mod det	te)		
<ul> <li>Indtast <u>https://log-in.test.miljoepor</u></li> </ul>	tal.dk/runtime <del>adfs</del> /services/trust/mex i "Issuer Metadata		Field Code Changed
Address" (bemærk at her skal URL'e	n i givet fald udskiftes til det tilsvarende end point i testmiljøet	t	
)			
- Vælg 1.1 i "Token Type"			
<ul> <li>Vælg Symmetric Key i "Key Type"</li> </ul>			
<ul> <li>Vælg 256 i "Key Size"</li> </ul>			
- Vælg Basic 256bit i "Algorithm Suite	n		
- Vælg Lax i "Security HeaderLayout"			
- Sæt vinge i "Require Derived Keys fo	or x509 Token", "Require Derived Keys for Issued Token",		
"Require Signature Confirmation" of	g "Encrypt Signature"		
og tryk OK			

STS Issued Endors	ng Token		
Issuer Address:	http://login.miljoeportal.dk/	adfs/service/trust/13/username	
Iss <u>u</u> er Metadata Address:	https://login.miljoeportal.dk	/adfs/services/trust/mex	
Token Type:	1.1		
Key Ty <u>p</u> e:	Symmetric Key 🔽		
Key Size:	256		
Algorithm Suite:	Basic 256bit 💌		
Security Header Layout:	Lax 💌		
Require Derived Keys I	or <u>X</u> 509 Token		
Require Derived Keys I	For <u>I</u> ssued Token		
Establish Secure Session	n (Secure Conversation)		
Require Derived Keys I	or Secure Session		
🛃 Reguire Signature Con	firmation		
Encrypt Signature			
Encrypt Before Signing			
		OK	Cancel
STS Issued Endorsin	j Token	X	
Issuer Address:	me/services/trust/14/usern	ame	
Iss <u>u</u> er Metadata Address:	I.dk/runtime/services/trust/	mex	
Token Type:	1.1		
Кеу Туре:	Symmetric Key		
Key Size:	256		
Algorithm Suite:	Basic 256bit		
Security Header Layout:	Lax		
🔽 Require Derived Keys	for <u>X</u> 509 Token		
🔽 Require Derived Keys	For <u>I</u> ssued Token		
🔲 Establish Secure Sessi	on (Secure Conversation)		
Require Derived Keys	For Secure Session		
Reguire Signature Cor	firmation		
Encrypt Signature			
Encrypt Betore Signing	1		

13. Tryk på Truststore, verificer at truststore peger ned på "cacerts.jks" under default Glassfish og tryk OK	domain fo
Truststore Configuration	

Location:	c:\glassfishv3\glassfish\domains\domain1\config\cacerts.jks	Browse
Truststore Password:	••••••	
Alias:	Load <u>A</u> liases	
Certificate Selector:		<u>B</u> rowse
	ок	Cancel
👕 Truststore Confid	uration	>
I K		
Location:	<pre></pre>	Browse
Truststore Password:	*****	
Alias:	Load <u>Al</u> iases	
Alias: Certificate Selector:	Load Aliases	Browse
Alias: Certificate Selector:	Load Aliases	Browse
Alias: Certificate Selector:	Load Aliases	Browse

14. Tryk på Keystore..., verificer at keystore peger ned på "keystore.jks" under default domain for Glassfish (åassword til både keystore og key password er i denne sample: "changeit"), vælg "javasampleservice-encryption" under Alias og tryk OK

Keystore Confi	guration
Location:	shv3\glassfish\domains\domain1\config\keystore.jks
Keystore Password:	•••••
Alias:	javasampleservice-encryption 💌 Load <u>A</u> liases
Key Password:	•••••
Alias Selector Class:	Browse
	OK Cancel
TKeystore Config	uration X
<b>() Keystore Config</b> Location:	uration X
<b>Keystore Config</b> Location: Keystore Password:	uration ×
Keystore Config Location: Keystore Password: Alias:	uration plassfish\domains\domain1\config\samplekeystore.jks Browse ******* ****** ****** ******* ******
Keystore Config Location: Keystore Password: Alias: Key Password:	uration     Image: State Sta
Keystore Config Location: Keystore Password: Alias: Key Password: Alias Selector Class:	uration Jassfish\domains\domain1\config\samplekeystore.jks Browse ******** Ivasampleservice-encryption.dk  Load Aliases Browse
Keystore Config Location: Keystore Password: Alias: Key Password: Alias Selector Class:	uration Jlassfish\domains\domain1\config\samplekeystore.jks Browse ******** Ivasampleservice-encryption.dk  Load Allases Browse

15. Dobbelklik på sevicen "JavaSamples" og indsæt følgende kodestump. Bemærk i highlight, at der skal bruges SOAP 1.2 på servicen:



Globeteam A/S  $\cdot$  Virumgårdsvej 17A  $\cdot$  2830 Virum  $\cdot$  Telefon +45 7026 2970  $\cdot$  www.globeteam.com

Formatted: Danish

<u>{</u>	Formatted: English (United States)
return "Hello world!";	
}	
}	
16. Der skal nu importeres certifikater certifikater til cacerts.jks-filen under default domain på	
GIBSSIISN.	
1 1C:\alsocfichu2, og default domain derfor hor i C:\Program Files\glassfish-	
4.1 c. (Frogrammer og deradit domain der for born <u>C. (Frogrammer (gassins)</u>	
4.1 (glassifsinger, glassifsinger, glassifisher) (domains (domains), Alle Certifikaterile der skal importeres	
ligger i den mediølgende visual studio 2010 solution under External References . Vi bruger Java	
Reytool (en del ar Java SDK en) til at importere certifikaterne:	
<ul> <li>DWP AD +5 220 identity Signing Certification (PRODUCTION <u>TEST</u>):</li> </ul>	Formatted: English (United States)
keytool -import -ailas dmp- <del>aarsz<u>identiny</u>-signing -tile <u>tokensigninglog-</u></del>	
in.test.miljoeportal.dk.cer -keystore	
C:\ <u>glassfishv3glassfishv4</u> \glassfish\domain1\config\cacerts.jks	
DMP AD FS 2.0 Signing certifikat (TEST):	Formatted: English (United States)
keytool-import-alias dmp-adts2 signing test-file tokensigning test.miljoeportal.dk.cer-	
keystore C:\glassfishv3\glassfish\domains\domain1\config\cacerts.jks	
<del>○ TDC OCES CA certifikat:</del>	
keytool-import-alias ocesca-file ocesca.cer-keystore	
C:\glassfishv3\glassfish\domains\domain1\config\cacerts.jks	
keytool-import-alias tdcocessystemtestii-file ocessystemtestca.cer-keystore	
C:\glassfishv3\glassfish\domains\domain1\config\cacerts.jks	
47. Desistat terrenilaren en destaure	
17. Projektet kompileres og deployes Classfich gyara i sig lag at samisen er deployeret. Benærk, at UBI (en skel være præsis som	
Glassifish svarer i sin log, at servicen er deployeret. Bemærk, at OKL en skal være præcis som	
angivet her før at der kan udstedes tokens til servicen. Hvis du følger gulden slavisk vil servicen	
komme ud på følgende adresse:	



18. Gå over i .NET solution'en og kør unit tests'ne for Java servicen (bemærk, unit tests for Java er foldet ud på skærmbilledet)



# Sådan kobles Web Services klienter op mod Web Services der anvender DMP

Forudsætningerne for at koble en Java-baseret Web Services klient op mod en Service under DMPs AD FS 2.0 er følgende.

- 1) Du er blevet udleveret public key certifikatet for servicens krypteringscertifikat
- 2) Du er blevet udleveret med en WSDL-adresse for den service du kobler en klient op mod
- 3) Du er i besiddelse af de medfølgende .NET samples til fagsystemejere som indeholder de nødvendige certifikater til DMP's AD FS 2.0-løsning

Som nævnt i forudsætninger for tilkobling øverst i dokumentet er kravene for at sætte en Javabaseret klient i luften mod en service under DMP, at der anvendes Glassfish 3.1 og Metro 2.1 i seneste promoted builds.

# Step-by-step eksempel på tilkoblingen af en Java-baseret web services klient

Følgende step-by-step guide beskriver, hvordan du opsætter og konfigurerer en Java-baseret Web Services klient, der er baseret på Netbeans.

Beskrivelsen tager delvist udgangspunkt i den .Net-baserede solution (DmpAdfs2DotNetSamples.sln), der er udarbejdet til brug for vejledningen omkring tilkobling af en .Net-baseret web service, i og med at den benytter certifikaterne der følger med i samples'ne.

Når disse trin er udført vil du have en kørende Java-baseret Web Services klient på din egen maskine, der rekvirerer et token fra DMPs AD FS 2.0 og påhæfter det et kald til Web Service under DMP.

- 1. Åbn Netbeans og vælg New Project
- 2. Vælg Java Web -> Web Application:

New Project		X
Steps 1. Choose Project 2	Choose Project Categories: Java Web Java EE Java Card Java ME Maven Groovy NetBeans Modules $\Theta - 0$ Samples	Projects:
	Description: Creates an empty Web application in IDE-generated build script to build, ru	n a standard IDE project. A standard project uses an In, and debug your project.



3. Navngiv projektet

Steps	Name and Loca	tion	
1. Choose Project	Project <u>N</u> ame:	DmpAdfs2JavaSample	
3. Server and Settings	Project Location:	C:\Users\Jesper\Documents\NetBeansProjects	Browse
Traineworks	Project <u>F</u> older:	2:\Users\Jesper\Documents\NetBeansProjects\DmpAdfs2JavaSample	
	Use <u>D</u> edicated	d Folder for Storing Libraries	
	Libraries Folder:		Browse
		Different users and projects can share the same compilation libraries (see Help for details).	
	🔽 <u>S</u> et as Main Pi	roject	
		Cancel	Help

scep	)5	Name and Loca	tion	
l.	Choose Project Name and Location	Project <u>N</u> ame:	DmpIdentifyJavaSample	
3.	Server and Settings Frameworks	Project Location:	C:\Users\Administrator.MBSDKINT\Documents\NetBeansProjects	Browse
	Transhorro	Project <u>F</u> older:	$\label{eq:mbsdkint} MBSDKINT \ boundary \ $	
		Use <u>D</u> edicate	d Folder for Storing Libraries	
		Libraries Folder:		Browse
			Uirrerent users and projects can share the same compliation libraries (see Help for details).	

4. Vælg Glassfish 3.1 sServeren hvor web applikationen der huser klienten skal hostes på

1

New Web Application	
Steps	Server and Settings
<ol> <li>Choose Project</li> <li>Name and Location</li> </ol>	Add to Enterprise Application: <pre> </pre>
3. Server and Settings 4. Frameworks	Server: GlassFish Server Add
	Java EE Version: Java EE 7 Web 💌
	Context Path: //DmpIdentifyJavaSample
	< <u>Back</u> Next > <u>Einish</u> Cancel <u>H</u> elp
New Web Application	xx
New Web Application	Server and Settings
New Web Application  Steps  Choose Project 2. Name and Location	Server and Settings Add to Enterprise Application: <pre></pre>
New Web Application  Steps  . Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <a href="https://www.enterprises.applications-server-sizes-applications-server-server-server-sizes-applications-server-sizes-applications-server-sizes-applications-server-sizes-applications-server-serv&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;New Web Application Steps 1. Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks&lt;/td&gt;&lt;td&gt;Server and Settings Add to Enterprise Application: &lt;a href=" https:="" www.serverstationscore"="">None&gt; Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web •]</a>
New Web Application  Steps  . Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <none> Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web  Enable Contexts and Dependency Injection Contexts Dath Depend 46 Dependency</none>
New Web Application  Steps  . Choose Project  . Name and Location  . Server and Settings  4. Frameworks	Server and Settings Add to Enterprise Application: <none> Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web  Enable Contexts and Dependency Injection Context Path: /DmpAdfs2JavaSample</none>
New Web Application Steps  Choose Project Choose Project Server and Settings Frameworks	Server and Settings         Add to Enterprise Application:         Server:       GlassFish Server 3.1         Java EE Version:       Java EE 6 Web         Enable Contexts and Dependency Injection         Context Path:       /DmpAdfs2JavaSample
New Web Application Steps  . Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <a href="https://www.serverscore.com">www.serverscore.com</a> Server: GlassFish Server 3.1 Sava EE Version: Java EE 6 Web <a href="https://www.serverscore.com">Add</a> Java EE Version: Java EE 6 Web <a href="https://www.serverscore.com">www.serverscore.com</a> Context gath: DmpAdfs2JavaSample
New Web Application Steps 1. Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <none> Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web  Enable Contexts and Dependency Injection Context Path: /DmpAdfs2JavaSample</none>
New Web Application  Steps  . Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <pre> Add to Enterprise Application: <pre> Server: GlassFish Server 3.1</pre></pre>
New Web Application  Steps  . Choose Project  . Name and Location  . Server and Settings  4. Frameworks	Server and Settings Add to Enterprise Application: <a href="https://www.settings.add">www.settings.add</a> Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web <a href="https://www.settings.add">www.settings.add</a> E Version: Java EE 6 Web <a href="https://www.settings.add">www.settings.add</a> Context Path: DmpAdfs2JavaSample
New Web Application Steps 1. Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <inone> Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web  Enable Contexts and Dependency Injection Context Path: //DmpAdfs2JavaSample</inone>
New Web Application Steps 1. Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <a href="https://www.settingamma.com">www.settingamma.com</a> Server: GlassFish Server 3.1 Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web   Enable Contexts and Dependency Injection Context Path: DmpAdfs2JavaSample
New Web Application  Steps  Choose Project  Name and Location  Server and Settings  Frameworks	Server and Settings Add to Enterprise Application: <a href="https://www.settinga.com">www.settinga.com</a> Server: GlassFish Server 3.1 Java EE Version: Java EE 6 Web <a href="https://www.settinga.com">www.settinga.com</a> Context and Dependency Injection Context Path: DmpAdfs2JavaSample
New Web Application Steps  1. Choose Project 2. Name and Location 3. Server and Settings 4. Frameworks	Server and Settings Add to Enterprise Application: <a href="https://www.settingamma.com">www.settingamma.com</a> Server: GlassFish Server 3.1 • Add Java EE Version: Java EE 6 Web • Enable Contexts and Dependency Injection Context Path: //DmpAdfs2JavaSample <a href="https://www.settingamma.com">www.settingamma.com</a> Context Path: //DmpAdfs2JavaSample

Side	43	af	53
Side	43	af	53

5. Klik Finish

6. Højreklik på projektet og vælg New Web Service Client. Indtast her et evt. package navn for klienten og WSDL-adressen til servicen

New Web Service Client			×
Steps	WSDL and Clie	nt Location	
<ol> <li>Choose File Type</li> <li>WSDL and Client Location</li> </ol>	Specify the WSD	L file of the Web Service.	
	Project:		Browse
	<u>L</u> ocal File:		Browse
	WSDL URL:	leservice:8080/DmpAdfs2JavaSamples/JavaSamplesService?wsdl	Set Proxy
	Specify a packag	e name where the client java artifacts will be generated:	
	Project:	DmpAdfs2JavaSamples	
	P <u>a</u> ckage:	myclient	•
	Client <u>S</u> tyle:	JAX-WS Style	•
	🦳 Generate Di	spatch code	
		<back next=""> Finish Cance</back>	el <u>H</u> elp

- 7. Klik Finish og Netbeans vil generere en klient til servicen
  - Web Services

     Web Service References

     Image: Service References

8. Højreklik nu igen på projektet og vælg New Web Service Client. Indtast WSDL-url'en til enten DMPs produktions- eller testmiljø. Bemærk, der skal IKKE tastes noget i package name, da dette kan give name clashes.

-	TEST: <u>https://log-in.test.miljoeportal.dk/adfsruntime/services/trust/mex</u>	Field Code Changed
-	Produktion: <u>https://log-in.miljoeportal.dk/<del>adfs</del>runtime/services/trust/mex</u>	Field Code Changed

Steps	WSDL and Clier	nt Location	
1. Choose File Type	Specify the WSDL	L file of the Web Service.	
2. WSDL and Client Location	Project:		Browse
	<ul> <li>Local File:</li> </ul>		Browse
	WSDL URL:	https://login.test.miljoeportal.dk/adfs/services/trust/mex	Set Proxy
	-		
	Specify a package	e name where the client java artifacts will be generated:	
	Project: Package:	DmpAdfs2JavaSamples	
	- <u>a</u> ctoget		•
	Client Style:	JAX-WS Style	•
	🔲 Generate Dis	apatch code	
<u></u>			
		<back next=""> Finish Cance</back>	I <u>H</u> elp
New Web Service Client			
New Web Service Client Steps	WSDL and Cli	ient Location	
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	<b>WSDL and Cli</b> Specify the WS	i <b>ent Location</b> DL file of the Web Service.	
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS C Project:	ient Location DL file of the Web Service.	Brows <u>e</u> ,
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS C Project: C Local File:	ient Location DL file of the Web Service.	Browsg
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS O Project: O Local File: O WSDL LIRL:	ient Location DL file of the Web Service.	Browsg
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS O Project: O Local File: O WSDL LIRL: O LIDE Register	ient Location DL file of the Web Service.	Browse, Browse, Browse,
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS C Project: C Local File: C Local File: C IDE Register Specify a packa	IENT Location UL file of the Web Service.  Intest.miljoeportal.dk/runtime/services/trust/mex ered:  age name where the client java artifacts will be generated:	Browsg Browse Browse
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS O Project: O Local File: O WSDL URL: O IDE Registe Specify a packa Project:	ient Location DL file of the Web Service.  in.test.miljoeportal.dk/runtime/services/trust/mex ered:  age name where the client java artifacts will be generated: DmpIdentifyJavaSample	Brows <u>e</u> , B <u>r</u> owse, Browse,
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS Project: Uccal File: WSDL URL: UDE Register Specify a packa Project: Package:	Int Location  DL file of the Web Service.  in.test.miljoeportal.dk/runtime/services/trust/mex ered:  age name where the client java artifacts will be generated: DmpIdentifyJavaSample	Browse Browse
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS O Project: O Local File: O USDL LIRL: O LDE Registe Specify a packa Project: Package:	ient Location DL file of the Web Service.  in.test.miljoeportal.dk/runtime/services/trust/mex ered:  age name where the client java artifacts will be generated: DmpIdentifyJavaSample	Browse, Browse, Browse,
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS C Project: C Local File: WSDL URL: C IDE Register Specify a packa Project: Package:	ient Location DL file of the Web Service.  Implementation DL file of the Web Service.  Implementation DurpIdentifyJavaSample Dispatch code	Browse, Browse
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS O Project: O Local File: O WSDL LRL: O LDE Registe Specify a packa Project: Package:	ient Location DL file of the Web Service.	Browse,,, Browse,,, Browse,,,
New Web Service Client Steps 1. Choose File Type 2. WSDL and Client Location	WSDL and Cli Specify the WS Project: WSDL URL: WSDL URL: IDE Register Specify a packa Project: Package:	ient Location DL file of the Web Service.  in.test.miljoeportal.dk/runtime/services/trust/mex ered:  age name where the client java artifacts will be generated: DmpIdentifyJavaSample Dispatch code	Browse, Browse,

- - mex
     SecurityTokenService
     SecurityTokenService
     SecurityTokenService
     SecurityTokenService
     SecurityTokenService
     SecurityTokenService
     SecurityTokenService
     SecurityTokenService
     SecurityTokenService

- 10. Det er nu tid til at importere certifikater i trust stores på klienten. Der skal importeres følgende to certifikater inklusive chains:
  - Public key af krypteringscertifikatet til DMPs AD FS 2.0
  - Public key af krypteringscertifikatet til servicen

Begge certifikater inklusive chains skal importeres til cacerts.jks'en i det glassfish domain løsningen er hosted i. I dette eksempel vælges default domain i en Glassfish installeret under C:\Glassfish3, altså bliver stien til cacerts.jks:

c:\glassfish3\glassfish\domains\domain1\config\cacerts.jks

Certifikaterne til DMP følger med til de .NET-baserede samples, og er markeret her:



Alle fire certifikater importeres til cacerts.jks evt. via KeyStore explorer -> Tools -> Imported Trusted Certificate.

Certifikatet til servicen importeres på samme måde, men verificer at <u>hele kæden</u> til certifikatet kommer med ind i keystore't.

11. Det er nu tid til at konfigurere Web Services klienten samt klienten til AD FS 2.0'en. Højreklik på Web Services klienten og vælg Edit Web Service Attributes. Under Security vælges Truststore... og alias'et for servicens public key certifikat vælges:

Truststore Config	uration		×
Location:	C:\glassfish3\glassfish\domains\domain1\config\cacerts.jks		Browse
Truststore Password:	•••••		
Alias:	javasampleservice-encryption 👻 Load Aliases		
Certificate Selector:	[		Browse
		OK	Cancel
		UK	Caricer

### 12. Klik OK. Fold nu Secure Token Service noden ud og fyld ind som anvist.

uality Of Service	WSDL Customization Wsimport Options	
Default <u>U</u> ser	rname:	
Default Pass	sword:	
SAML Collba	di Handlari	
limestamp	imeout (s): 300	
Key Obtention	1terations: 1000	
Key Obtention	I Service	
Key Obtention	I service	
Key Obtention Secure Token Endpoint:	http://login.test.miljoeportal.dk/adfs/services/trust/13/username	
Key Obtention Secure Token Endpoint: <u>W</u> SDL Location:	Iterations:       1000         Service         http://login.test.miljoeportal.dk/adfs/services/trust/13/username         https://login.test.miljoeportal.dk/adfs/services/trust/mex	
Key Obtention Secure Token Endpoint: WSDL Location: Metadata:	Iterations:       1000         Service         http://login.test.miljoeportal.dk/adfs/services/trust/13/username         https://login.test.miljoeportal.dk/adfs/services/trust/mex         https://login.test.miljoeportal.dk/adfs/services/trust/mex	
Key Obtention Secure Token Endpoint: WSDL Location: Metadata: Service Name:	Iterations:       1000         Service         http://login.test.miljoeportal.dk/adfs/services/trust/13/username         https://login.test.miljoeportal.dk/adfs/services/trust/mex         https://login.test.miljoeportal.dk/adfs/services/trust/mex         SecurityTokenService	
Key Obtention Secure Token Endpoint: <u>W</u> SDL Location: <u>M</u> etadata: Service Name: Port Name:	Iterations:       1000         Service         http://login.test.miljoeportal.dk/adfs/services/trust/13/username         https://login.test.miljoeportal.dk/adfs/services/trust/mex         https://login.test.miljoeportal.dk/adfs/services/trust/mex         SecurityTokenService         UserNameWSTrustBinding_IWSTrust13Async	
Key Obtention Secure Token Endpoint: WSDL Location: Metadata: Service Name: Port Name: Namespace:	Iterations:       1000         Service         http://login.test.miljoeportal.dk/adfs/services/trust/13/username         https://login.test.miljoeportal.dk/adfs/services/trust/mex         https://login.test.miljoeportal.dk/adfs/services/trust/mex         SecurityTokenService         UserNameWSTrustBinding_IWSTrust13Async	
Key Obtention Secure Token Endpoint: WSDL Location: Metadata: Service Name: Port Name: Namespace: WS Tauet Variation	Iterations:       1000         Service         http://login.test.miljoeportal.dk/adfs/services/trust/13/username         https://login.test.miljoeportal.dk/adfs/services/trust/mex         https://login.test.miljoeportal.dk/adfs/services/trust/mex         SecurityTokenService         UserNameWSTrustBinding_IWSTrust13Async	

Bemærk, såfremt det er produktionsmiljøet der anvendes bruges adresserne:

- http://login.miljoeportal.dk/adfs/services/trust/13/username
- https://login.miljoeportal.dk/adfs/services/trust/mex

13. Klik OK. Web Services klienten er nu konfigureret.

14. Højreklik på klienten til AD FS 2.0'en (mex) og vælg Edit Web Service Attributes. Fold noden "UserNameWSTrustBinding\_IWSTrust13Async" og indtast brugernavn og adgangskode til DMP i

felterne:
mex 🛛
Configure security, reliability and other WS-* features in the 'Quality Of Service' tab.Use the WSDL Customization tab to customize WSDL to Java binding.Use the Wsimport Options to set certain JAXWS and JAXB code generation options. Press F1 on a header for details specific to its section.
Quality Of Service WSDL Customization Wsimport Options
CertificateWSTrustBinding_IWSTrust13Async Binding
Image: Sector Stress   UserNameWSTrustBinding_IWSTrust13Async Binding
Transport
Security
Use development defaults
Keystore Truststore Kerberos Validators
Authentication Credentials: Static 🔻
Default Username: DMPSTStest
Default Password:
SAML Callback Handler: Browse
Timestamp Timeout (s): 300
Key Obtention Iterations: 1000
OK Cancel <u>H</u> elp

15. Klik på Truststore... og vælg public key af AD FS 2.0'ens servicecertifikatet – altså enten: servicecommunication.miljoeportal.dk.cer (produktion)

eller

Truststore Configu	iration	X
Location:	C: \glassfish3\glassfish\domains\domain1\config\cacerts.jks	<u>B</u> rowse
Truststore Password:	•••••	
Alias:	sts-test-public   Load Aliases	
Certificate Selector:		Browse
		OK Cancel

- 16. Klik OK. Klienten til AD FS 2.0'en er nu færdigkonfigureret
- 17. For at teste klienten kan man evt. dragge en serviceoperation ind i den medfølgende index.jsp i web applikationen i Netbeans som her:

<h< th=""><th>tml&gt;</th></h<>	tml>
	<head></head>
	<pre><meta content="text/html; charset=utf-8" http-equiv="Content-Type"/></pre>
	<body></body>
	<h1>Hello World!</h1>
	<hr/>
	<% start web service invocation%> <hr/>
Ę	<\$
	try {
	<pre>client.JavaSamplesService service = new client.JavaSamplesService();</pre>
	client.JavaSamples port = service.getJavaSamplesPort();
	// TODO process result here
	java.lang.String
	out.println("Result = "+ <mark>result</mark> );
	<pre>} catch (Exception ex) {</pre>
	<pre>// TODO handle custom exceptions here</pre>
	<pre>ex.printStackTrace();</pre>
	}
L	8>
	<% end web service invocation%>
	<hr/>
I _	
</td <td>html&gt;</td>	html>