

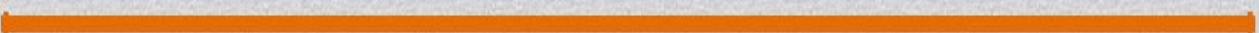


# ESD WEB SERVICE DOCUMENTATION

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## *ESD Web Service Documentation*

This documentation covers everything you need to know about the custom ESD Web Service



## Contents

Introduction .....	2
System Overview .....	2
Advantages of using the Web Service System .....	3
Installation .....	3
Prerequisites.....	3
Installation instructions .....	3
Startup .....	4
Signing Invoices .....	5
Query Invoice .....	5
Glossary .....	6

## Introduction

The custom made ESD Web service is a system based on the REST (Representational State Transfer) Architecture, and is used to sign invoices sent over the network. It also provides an interface for querying a previously signed invoice given the invoice number.

## System Overview

The custom made ESD Web service is designed to work over the internet implementing REST Protocol. To sign invoices, you simply need to send the specific invoice details to the web service, after which the ESD Web service processes them and responds with a signature.

An invoice query function is also included in the functionality whereby, given an invoice number, you can query previously signed invoices, and get back the signature for the particular invoice.

Once the signature is received, it can be saved or displayed on any other necessary interface as required by the client.



**Diagrammatic System Overview**

## Advantages of using the Web Service System

1. Speed –it's fast and secure in processing invoice
2. Modular –It is independent and can be used by any department that needs to sign invoices. Different departments can have different invoice types and templates, all utilizing the same ESD web service.
3. Secure –Secured with credentials during invoice signing and invoice signature querying.
4. Cost Effective –the same system can be used by different departments to sign invoices.

## Installation

### Prerequisites

The following environment is required before installation of the Web Service;

1. Windows operating system (XP, Server 2003, Windows Vista, Win 7/8/10)
2. Java Runtime Environment (Latest or at least v1.8)
3. Electronic Signature Interface (ESI) version 3.16 or higher
4. Electronic Signature Device
5. Wildfly Application Server Version 8.2.0
6. Laborex Custom ESD Web Service deployment file

### Installation instructions

1. Install Java
2. Extract Wildfly Server zip file under the Windows C:/ws Directory
3. Install ESI
4. Setup Batch Processing with folder selection as ;  
Input:C:\ESD\_DOCUMENTS\Input  
Output:C:\ESD\_DOCUMENTS\Output  
ESD\_Input:C:\ESD\_DOCUMENTS\ESD\_Input  
ESD\_Output:C:\ESD\_DOCUMENTS\ESD\_Output  
(Or leave the default)
5. Install SOAP UI Application for Web Service Testing
6. Parse an invoice for signing using SOAP UI
7. Train the invoice template that will be created under ESD\_Input folder
8. Parse invoice for signing again, test the query invoice functionality as well.

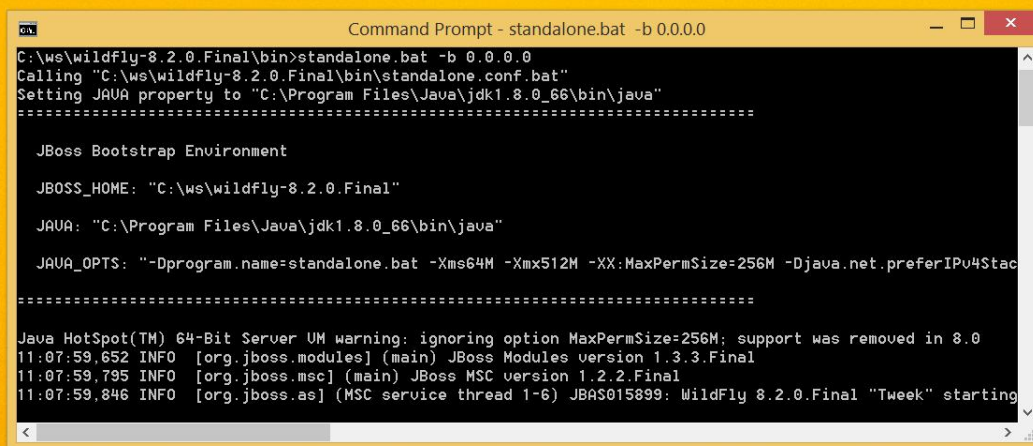


## Startup

To start up the web service, navigate to the Wildfly folder copied under the C:/ws directory. Navigate to the bin folder under the wildfly directory. You will find the following file that is used for startup : standalone.bat.

Open a terminal / command prompt, and navigate to the above folder and use the below command to startup the web service and press enter;

standalone.bat -b 0.0.0.0



```
Command Prompt - standalone.bat -b 0.0.0.0

C:\ws\wildfly-8.2.0.Final\bin>standalone.bat -b 0.0.0.0
Calling "C:\ws\wildfly-8.2.0.Final\bin\standalone.conf.bat"
Setting JAVA property to "C:\Program Files\Java\jdk1.8.0_66\bin\java"
=====

JBoss Bootstrap Environment

JBoss HOME: "C:\ws\wildfly-8.2.0.Final"

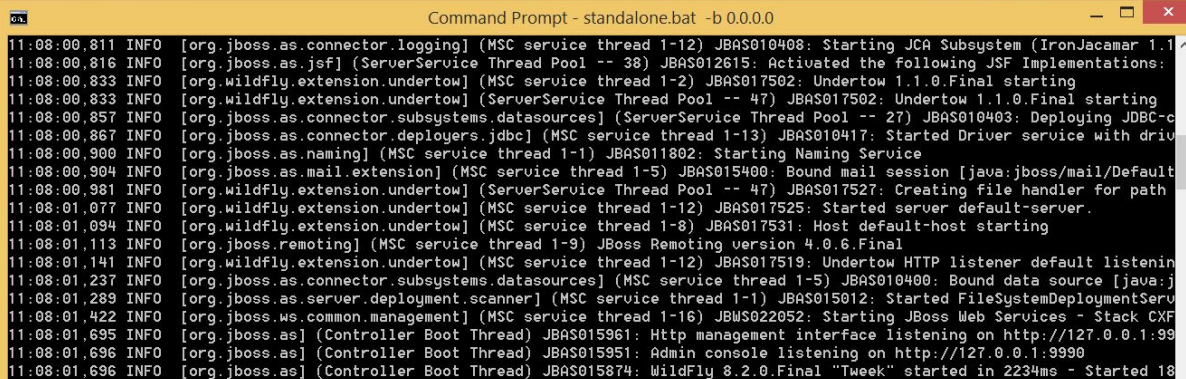
JAVA: "C:\Program Files\Java\jdk1.8.0_66\bin\java"

JAVA_OPTS: "-Dprogram.name=standalone.bat -Xms64M -Xmx512M -XX:MaxPermSize=256M -Djava.net.preferIPv4Stack"
=====

Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=256M; support was removed in 8.0
11:07:59,652 INFO [org.jboss.modules] (main) JBoss Modules version 1.3.3.Final
11:07:59,795 INFO [org.jboss.msc] (main) JBoss MSC version 1.2.2.Final
11:07:59,846 INFO [org.jboss.as] (MSC service thread 1-6) JBAS015899: WildFly 8.2.0.Final "Tweek" starting
```

### Starting up the web service application

The application will print out the above in format



```
Command Prompt - standalone.bat -b 0.0.0.0

11:08:00,811 INFO [org.jboss.as.connector.logging] (MSC service thread 1-12) JBAS010408: Starting JCA Subsystem (IronJacamar 1.1
11:08:00,816 INFO [org.jboss.as.jsf] (ServerService Thread Pool -- 38) JBAS012615: Activated the following JSF Implementations:
11:08:00,833 INFO [org.wildfly.extension.undertow] (MSC service thread 1-2) JBAS017502: Undertow 1.1.0.Final starting
11:08:00,833 INFO [org.wildfly.extension.undertow] (ServerService Thread Pool -- 47) JBAS017502: Undertow 1.1.0.Final starting
11:08:00,857 INFO [org.jboss.as.connector.subsystems.datasources] (ServerService Thread Pool -- 27) JBAS010403: Deploying JDBC-c
11:08:00,867 INFO [org.jboss.as.connector.deployers.jdbc] (MSC service thread 1-13) JBAS010417: Started Driver service with driv
11:08:00,900 INFO [org.jboss.as.naming] (MSC service thread 1-1) JBAS011802: Starting Naming Service
11:08:00,904 INFO [org.jboss.as.mail.extension] (MSC service thread 1-5) JBAS015400: Bound mail session [java:jboss/mail/Default
11:08:00,981 INFO [org.wildfly.extension.undertow] (ServerService Thread Pool -- 47) JBAS017527: Creating file handler for path
11:08:01,077 INFO [org.wildfly.extension.undertow] (MSC service thread 1-12) JBAS017525: Started server default-server.
11:08:01,094 INFO [org.wildfly.extension.undertow] (MSC service thread 1-8) JBAS017531: Host default-host starting
11:08:01,113 INFO [org.jboss.remoting] (MSC service thread 1-9) JBoss Remoting version 4.0.6.Final
11:08:01,141 INFO [org.wildfly.extension.undertow] (MSC service thread 1-12) JBAS017519: Undertow HTTP listener default listenin
11:08:01,237 INFO [org.jboss.as.connector.subsystems.datasources] (MSC service thread 1-5) JBAS010400: Bound data source [java:]
11:08:01,289 INFO [org.jboss.as.server.deployment.scanner] (MSC service thread 1-1) JBAS015012: Started FileSystemDeploymentServ
11:08:01,422 INFO [org.jboss.ws.common.management] (MSC service thread 1-16) JBWS022052: Starting JBoss Web Services - Stack CXF
11:08:01,695 INFO [org.jboss.as] (Controller Boot Thread) JBAS015961: Http management interface listening on http://127.0.0.1:99
11:08:01,696 INFO [org.jboss.as] (Controller Boot Thread) JBAS015951: Admin console listening on http://127.0.0.1:9990
11:08:01,696 INFO [org.jboss.as] (Controller Boot Thread) JBAS015874: WildFly 8.2.0.Final "Tweek" started in 2234ms - Started 18
```

## Signing Invoices

### Sample request for signing an invoice

[http://localhost:8084/esd/signinvoice\\_rest?invoice\\_date=10\\_06\\_2017&invoice\\_number=1026&vat\\_a  
mount=18&gross\\_amount=100&invoice\\_total=118&username=esduser&password=esdpwd123](http://localhost:8084/esd/signinvoice_rest?invoice_date=10_06_2017&invoice_number=1026&vat_amount=18&gross_amount=100&invoice_total=118&username=esduser&password=esdpwd123)

**Endpoint:** <http://localhost:8084/esd/signinvoice>

```
{
  "invoice_date": "10/06/2017",
  "invoice_number": "876788",
  "vat_amount": "18",
  "gross_amount": "100",
  "invoice_total": "118",
  "username": "esduser",
  "password": "esdpwd123"
}
```

### Sample Response

=====

```
{
  "signature":
"FD23643F89C8D009FC4A822CDC5E162D99E1ED50/0001/00072635/2908121020/xxx#177000.00",
  "status": "00",
  "description": "Document signed successfully."
}
```

## Query Invoice

To query an invoice signature, you will need to provide the invoice number, along with the web service credentials. The following is the REST Request

<http://localhost:8084/esd/queryinvoice/1026?username=esduser&password=esdpwd123>

**Endpoint :** [http://localhost:8080/esd\\_rest\\_ws/](http://localhost:8080/esd_rest_ws/) getsignature

Username: admin

Password : esdadmin2016

Invoice Number : 12345

## Sample Response

```
{  
  "signature":  
"FD23643F89C8D009FC4A822CDC5E162D99E1ED50/0001/00072635/2908121020/xxx#17700  
0.00",  
  "status": "00",  
  "description": "Document signed successfully."  
}
```

## Glossary

EFD –Electronic Fiscal Devices

ESD –Electronic Signature Device

REST –Representation State Transfer

WSDL –Web Service Definition Language

ESI –Electronic Signature Interface