OpenAS2 Server Application

Table of Contents

1. Introduction

The OpenAS2 application enables you to transmit and receive AS2 messages with EDI-X12, EDIFACT, XML, or binary payloads between trading partners. The AS2 implementation conforms with RFC4130.

This document describes how to install, configure and use OpenAS2. In this document a partner can be either your own company or a company you will be exchanging data with using AS2.

The sample configurations in this document are based on Unix type OS but in general the only significant difference is that it may be necessary to use “\” instead of “/” for folder name separators on Windows based machines but because the application is Java it should work fine leaving the “/” for the most part as Java will do the conversion if necessary.

This document is valid for version 1.3.5 and up.

2. Glossary

EDI – Electronic Data Interchange

MDN - Message Disposition Notification

3. Installing OpenAS2

To be able to run the OpenAS2, you will need:

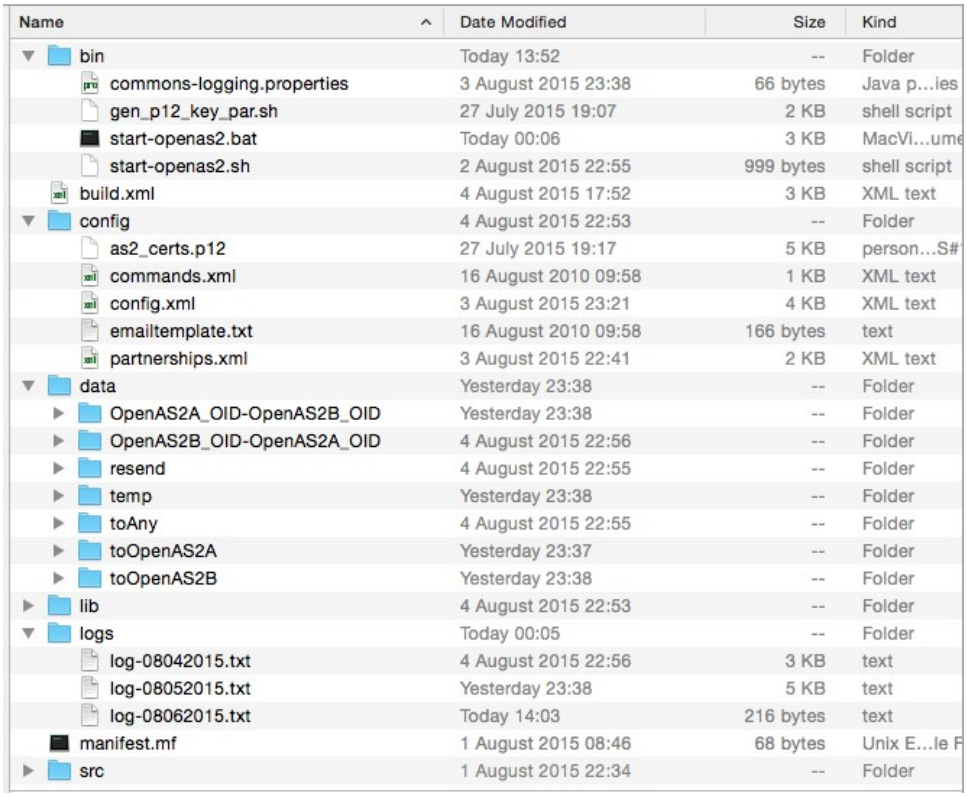
1. Java™ installed on the machine you intend to run the OpenAS2 server on – this document uses Java 1.6.
2. The OpenAS2 package version you wish to use. The downloadable packages can be found here: `https://sourceforge.net/projects/openas2/files`
3. Java Cryptography Extension (JCE) policy files - you can download the correct version from the Java website. Search “Java Cryptography Extension Unlimited Strength“ to find the right cryptography extension for your version of Java. The current link for Java8 is here.

The following steps will provide an installed app on a target machine:

1. Unzip the downloaded OpenAS2 package into a suitable location, which we will call `<install_dir>`.
   NOTE: Typical values for `<install_dir>` locations are `/opt/OpenAS2` under Linux®/Unix or `C:\OpenAS2` under Microsoft® Windows®.

2. For the encryption and certificate management to work correctly, you must have the proper JCE policy files installed in your version of Java. The downloaded zip archive contains the two files `local_policy.jar` and `US_export_policy.jar`. Install them into your Java location under `<JAVA_HOME>/lib/security`. Back up the existing files before installing these new ones. There are numerous detailed articles on the web for installing these files if you need more information.

The file structure will look something like the figure below without the data and logs folders which are created automatically by the server when it starts based on configuration if they do not exist.



4. Configuration

This section explains the details of the configuration files and how they link together.

The OpenAS2 server uses four files to configure and execute:

1. config.xml – configures the application
2. partnerships.xml – configures the partners
3. as2_certs.p12 – stores the PKCS12 certificates for all partners
4. commands.xml – stores the commands that the application will support. This file should not be modified

The folder containing the config.xml file defines the ***home*** configuration parameter that can be used to reference other files on the file system relative to a known base folder in the app. This is done by encapsulating ***home*** in percentage signs (***%home%***). All files can be referenced relative to this parameter and it is how the default config.xml file defines the location of other configuration and data file locations used by the OpenAS2 application.

4.1. Application Configuration

The file named “config.xml” configures the modules that will be activated by the AS2 server when it starts up. This file can be located anywhere within the disk subsystem on which the OpenAS2 application runs as it is passed into the application as a startup parameter.

Some of the key configuration settings in the config.xml file are:

- define the modules to be activated in the OpenAS2 application
- override module default classes in the AS2 code base
- enhance or change behaviour of modules and the inputs and outputs of the modules.
- define the location of the certificates keystore and password
- define the location of the partnerships configuration file
- specify the listening ports

See appendices for a detailed definition of the config.xml file structure.

There are 2 listening ports for inbound connections (see partnerships.xml config for outbound connections) used for:

1. receiving messages and synchronous MDN's – default port number 10080
2. receiving asynchronous MDN's - default port number 10081

The port numbers are arbitrary and defaulted to a number above 1024 that does not require root access to listen on (normally on Unix type systems any port below 1024 requires root access). The port values are important to the partner you will be communicating with if they will be sending AS2 messages to your system. For outbound only systems, it is only necessary to have a listener for asynchronous MDN's if using that mechanism for MDN's.

Each module has a number of attributes that can be configured on the module element to control and change how the module behaves.

4.1.1. Overriding Certificate Store Password

The certificate store password is stored as an XML attribute “password” on the <certificates> element. This can be overridden using the system property “***org.openas2.cert.Password***”. For improved security, it may not be desired to store the password in the XML file.

This can be passsed into the application by adding the following to the java command:

- ***-Dorg.openas2.cert.Password=myCertificateStorePassword***

This can be set by using an additional parameter to the batch script file so that it can be set as part of invoking the script. The UNIX shell script will support the password as a parameter. The Windows bat file will need to be enhanced.

4.1.2. Resend Retry Configuration

When failures occur transferring a message to a trading partner, the system will automatically try to resend the message. By default the system will retry indefinitely.

Restricting the retry attempts can be done at the processor level (applies to all partnerships configured on the server) and at the partnership level. Partnership configuration will override processor settings.

To define the processor level retry count, set the "**resend_max_retries**" attribute on the processor element to a valid integer.

Example snippet:

```
<processor classname="org.openas2.processor.DefaultProcessor"
   pendingMDN="%home%/../data/pendingMDN3"
   pendingMDNinfo="%home%/../data/pendinginfoMDN3"
resend_max_retries="10" >
```

To define the partnership level retry count, set an attribute element on the partnership with ***name*** attribute value as "**resend_max_retries**" and a ***value*** attribute element to a valid integer.

Example snippet:

```
<partnership name="OpenAS2A-to-OpenAS2B">
        <attribute name="resend_max_retries" value="3"/>
        <sender name="OpenAS2A"/>
```

4.2. Partner Configuration

The file named partnerships.xml configures all the information relating to the partners you will be exchanging data with. See the appendix for information on the structure of this file.

It is important to keep in mind that the word ***partner*** refers to any entity specified as a recipient or sender of AS2 messages and includes your own company that you might be configuring the application for.

Each partner will require the following entries in the file:

- a **<partner>** element – key information defining the partner
- a **<partnership>** element - key information for defining a partnership between 2 partners
  Separate **<partnership>** elements are required for inbound and outbound data for a specific partner pairing.
  NOTE:It is not necessary to have 2 elements if data transfer is unidirectional.

4.2.1. Partner Definition

The **<partner>** element requires 3 attributes to enable AS2 partner identification:

1. partner name – this is the key to connect partnerships to a partner definition
2. AS2 identifier – this is the key for identifying the target/source partner and is included in AS2 message headers to allow the receiving partner to identify the source of the message and verify the target partner for the AS2 message. It is also used by the general directory polling module to look up the partner names and hence the partnership definition where the as2_id of the sender and receiver are part of the transferred file name.

3. X.509 certificate alias – identifies the alis of the certificates for this partner in the keystore. The encryption and decryption of messages requires the partners public or private key as appropriate

4.2.2. Partnership Definition

The <partnership> element identifies a **specific direction** of AS2 message transfer **from** one partner **to** another. The “name” attribute on the <partnership> element is not important but should be used to clearly identify the intended use of the partnership definition. It is suggested the name value uses the names of the source and destination partners something like xxx-to-yyy.

The <partnership> element encapsulates a number of child elements that are necessary to properly configure a partnership:

- <sender name=”*xxx*”> - identifies the sending partner definition such that *xxx* must match the “name” attribute of a <partner> element
- <receiver name=”*yyy*”> - identifies the receiving partner definition such that *yyy* must match the “name” attribute of a <partner> element
- <as2_url> - a fully qualified URI that provides the connection string to the remote partner for sending AS2 messages. If sending to another OpenAS2 server then the port number must match the value configured in the config.xml file of the remote OpenAS2 server.
- <as2_mdn_to> - neccesary if an MDN response is required and can be any random string but is most commonly configured with an email address

4.2.3. Transfer Encoding

The default content transfer encoding uses “8bit” if not explicitly overwritten in the configuration. Many AS2 implementations use “binary” and this can be changed using the “***content_transfer_encoding”*** attribute in the partnership.xml file. If you experience issues with failing to verify a partners AS2 inbound message because the message contains CR/LF data in it then you should switch to using “binary” for the transfer encoding. The sample partnership file sets the transfer encoding to “binary” for both partners.

4.2.4. Supported Encoding Algorithms

The currently supported encoding algorithms are:

- MD5
- SHA1
- SHA224
- SHA256
- SHA384
- SHA512
- CAST5
- 3DES
- IDEA
- RC2_CBC

4.2.5. Message Compression

The application supports inbound compression automatically. There is no configuration for this option. To enable outbound compression requires setting "***compression_type***" attribute on the partnership definition for the outbound configuration. The only supported compression/decompression at this time is "***ZLIB***". The default is no compression of sent messages.

By default compression will occur on the message body part prior to signing. The compression can be configured to occur after signing using the "***compression_mode***" attribute on the partnership definition for the outbound configuration. Set the attribute to "***compress-after-signing***" to enable this.

See partnership.xml appendix for configuration details.

4.3. Certificate Configuration

The certificate store used by default is a PKCS12 key store and stores all X.509 certificates.
The key store must contain the private key of your own X.509 certificate and the public key for each of your trading partners X.509 certificates.
The certificates must be stored with the matching alias as specified in the partner definition of each partner in the partnership.xml file.

There is a shell file to help generating certificates: **bin/gen_p12_key_par.sh**
An excellent open source visual keystore manager that will run on any OS can be found here:
http://portecle.sourceforge.net/

4.4. Logging Configuration

The logging system supports the use of either or both the ***commons-logging.properties*** file or a file named ***openas2log.properties*** to control the logging level. Properties in openas2log.properties will override commons-logging.properties entries. There is a commons-logging.properties file in the ***bin*** directory which is part of the classpath specified in the script file described in the section on running the application.

The properties in the ***openas2log.properties*** file should be prefixed by "`org.openas2.logging.`"
The following are the logging levels supported by the application in order of lowest(finest) to highest:
"TRACE", "DEBUG", "INFO", "WARN", "ERROR", "FATAL"
The logging levels are turned off by specifying the level you want on and all other levels higher than that level will also be turned on.
The default level is INFO and therefore WARN, ERROR and FATAL are also turned on by default.
By adding a property level=DEBUG in the common-logging.properties file will result in DEBUG logging being enabled along with INFO, WARN, ERROR and FATAL
The same can be achieved by adding org.openas2.logging.openas2log.level=DEBUG in the openas2log.properties file.

4.5. MDN Configuration

MDN's can be sent synchronously or asynchronously. By default the system will use synchronous MDN mechanism. Per the AS2 specification, an MDN will only be sent on receipt of an AS2 message if the "**Disposition-Notification-To**" header is present in the received message with a non-

empty value. Although this value is specified to be configured with an email address, it is not utilized for any purpose in the AS2 protocol other than to indicate an MDN is required so can in fact be any random string. To set the "**Disposition-Notification-To**" header in an outbound message, the "**as2_mdn_to**" attribute must be set on the partnership.

The other attribute that must be set is the "**as2_mdn_options"**. This defines the encryption algorithm and other MDN settings as specified by the AS2 protocol and the value entered for this attribute will be sent in the "**Disposition-Notification-Options"** header of the AS2 message. Generally changing the encryption algorithm to suit the trading partner should be sufficient on this attribute.

4.5.1. Asynchronous MDN Receiver Configuration

In order to specify an asynchronous MDN response from a partner requires setting the following attribute on the partnership element in the partnership configuration:

- **as2_receipt_option** – set to the URL of the asynchronous MDN receiver to target the asynchronous MDN receiver module configured in the config file (ie. this is the sender partners MDN receiver). The value set in this attribute will be sent in the "**Receipt-Delivery-Option**" header of the AS2 message to the trading partner. For testing using the default config file that comes with the OpenAS2 installation package, set this to: http://localhost:10081

Receiving an asynchronous MDN requires the "***AS2MDNReceiverModule***" module. This module declaration requires a port parameter in addition to the class and can be entered as shown below as a child member of the processor node in the config file:

<module classname="org.openas2.processor.receiver.AS2MDNReceiverModule" port="10081" />

4.5.2. Asynchronous MDN Sender Configuration

Sending an asynchronous MDN requires the "***AsynchMDNSenderModule***" module. This module declaration does not require any parameters other than the class and can be entered as shown below as a child member of the processor node in the config file:

<module classname="org.openas2.processor.sender.AsynchMDNSenderModule" />

4.6. Configuring HTTPS Transport

HTTPS transport using SSL is configured separately for inbound and outbound connectivity.

4.6.1. Inbound Transfers

Configuration for inbound is in the config.xml file. The requirements for receiving AS2 files using HTTPS are:

- JKS keystore containing the SSL certificate
- an appropriately configured As2ReceiverModule module element

The key attributes that configure HTTPS are:

- `protocol="https"`
- `ssl_keystore="%home%/ssl_certs.jks"` – points to the JKS certificate keystore

- `ssl_keystore_password="<passwordforkeystorefile"`
- `ssl_protocol="TLS"`

See the appendix for details on the attributes.

4.6.2. Outbound Transfers

The partnership definition for the connection URL will also have to be set to the appropriate host name.

The key attributes that configure HTTPS are:

- `as2_url`
- `as2_mdn_to (only if MDN is required)`

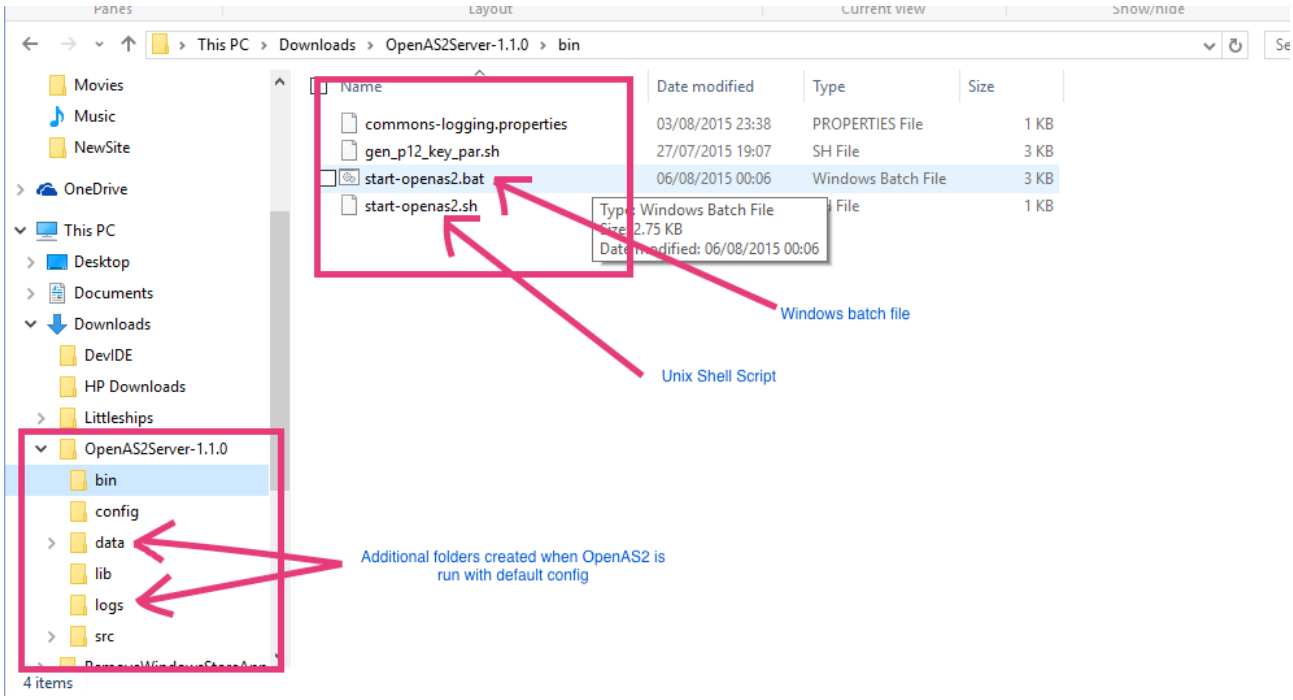
If asynchronous MDN is in use and requires HTTPS then a ***As2MDNReceiverModule*** module needs to be configured in the same way as for the As2ReceiverModule class above.

If the target system being connected to uses self signed certificates, the following system property will have to be passed to the application in the java command line with a comma separated list (no spaces before or after comma) of the “Common Name” (CN) in the self signed certificate that will be returned by the target system:

```
-Dorg.openas2.cert.TrustSelfSignedCN=<Common.Name1>,<Common.Name2>,...
```

5. Running OpenAS2

The default install of the application is as in the figure below from a windows PC.



There are 2 executable script files in the ***bin*** folder of the AS2 application root as indicated in the screenshot above:

1. start-openas2.sh – for UNIX based systems

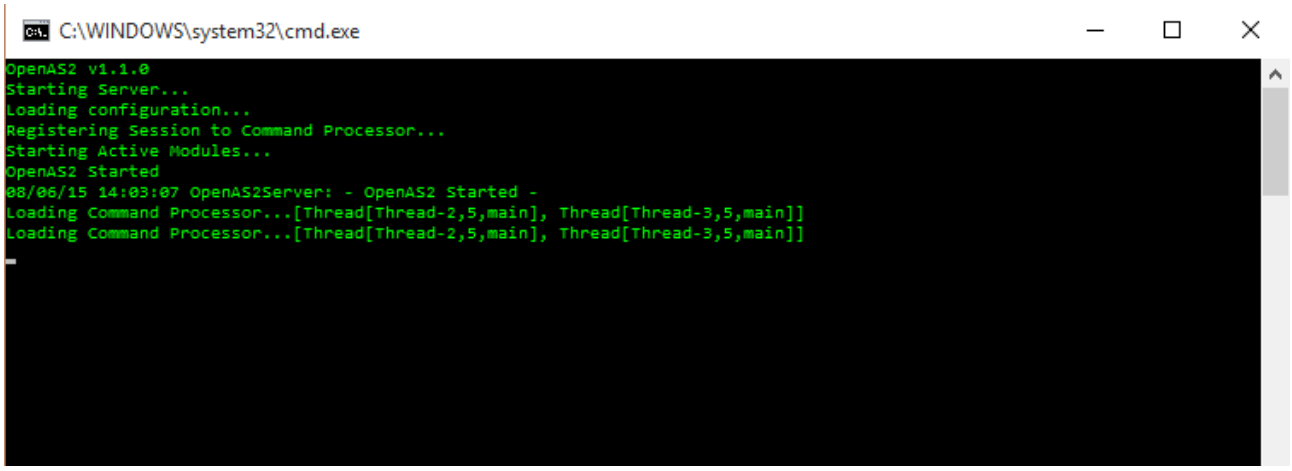
2. start-openas2.bat – for Microsoft Windows based system

It is not necessary to modify these files for the default install to work. If you choose to put the config.xml file in a different location than the default then you will need to edit the appropriate script file and set the path to the config.xml file appropriately.

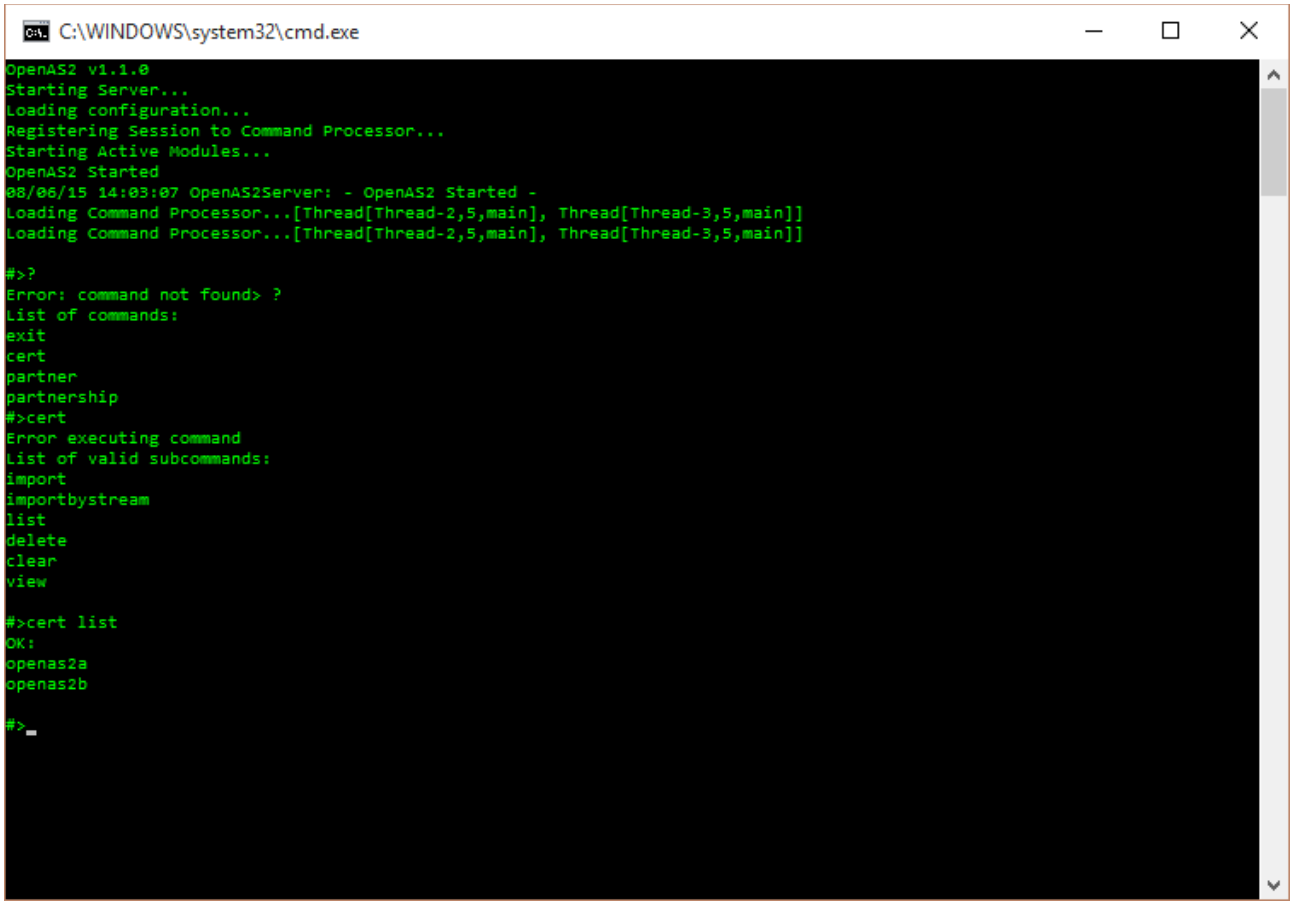
Simply execute the script file and an AS2 server will start up. It will create the following folders along with sub folders when it starts assuming no change to the default config:

- logs – contains the norml program logging
- data – contains all the transferred files and any AS2 specific headers associated with AS2 transfers. This folder will have a number of sub folders for outbound and inbound files for different partners

In Microsoft Windows you should be able to double click the start-openas2.bat file and a command window will open as below.



No command prompt is shown initially but you can enter a command or just press <ENTER> to get a visible prompt. Typing ? Will show possible commands. Each command will list sub commands they require if you try to enter them without the appropriate parameters. A sample is shown below.



There will be some logging as the application starts and it will then provide a command prompt (you may need to press the ENTER key to see it due to logging events.

You can enter commands after startup by typing in the console window.

For Unix based systems such as Linux and OSX, open a terminal window and change directory to the “bin” folder of the install. The start_openas2.sh file should have execute permissions in which case simply type the name and press enter. If no execute permissions are set, either set the execute permission as needed or use “sh” to run the script:

/opt/OpenAS2:>sh opensas2.sh

The output in a Unix based system will be odentical to that in a Windows based system.

6. Testing OpenAS2 Transfers

The default configuration of the OpenAS2 configuration is set up for two partners named “OpenAS2A” and “OpenAS2B”. The system will effectively send messages to itself between the 2 configured partners. You can simply start the OpenAS2 server without any changes and then copy a file into the appropriate outbox as defined by the relevant module using the org.openas2.processor.receiver.AS2DirectoryPollingModule classes “**outboxdir**” attribute to send the file to the desired partner.

The default configuration provides for 2 partners OPENAS2A and OPENAS2B and will create outbox folders ***<installDir>/data/toOpenAS2A*** and ***<installDir>/data/toOpenAS2B*** for explicitly

targeting a partner for any file dropped in one of those folders.

If you wish to run 2 OpenAS2 servers on the same machine then the ports on the 2nd instance of OpenAS2 as configured in the config.xml must be different to those configured on the first instance (see Application Configuration above). If using asynchronous MDN, the URL entry for the attribute "***as2_receipt_option***" in the partnerships.xml file for the 2nd instance must match the values configured in the 1st instances config.xml for hist name and port and vice-versa.

6.1. Using HTTPS Transport

To test on a local machine using the supplied sample self signed SSL certificate (config/ssl_certs.jks) you should create a localhost DNS entry. The sample certificate was generated for "www.openas2.localhost".

This site will help in how to set up a local DNS:
http://www.selfsignedcertificate.com/development_tips.php

The As2ReceiverModule module element should be configured correctly. The key attributes that will work with the supplied sample certificate are already in the sample config file and should just be uncommented:

- protocol="https"
- ssl_keystore="%home%/ssl_certs.jks"
- ssl_keystore_password="testas2"
- ssl_protocol="TLS"

The partnership definition for the connection URL will also have to be set to the appropriate host name and use "https" instead of "http":

```
        <attribute name="as2_url" value="https://www.openas2.localhost:10080"/>
```

If asynchronous MDN is used then the as2_receipt_option attribute must be configured for SSL as well:

```
        <attribute name="as2_receipt_option" value="https://www.openas2.localhost.com:10081"/>
```

The following system property will have to be passed to the application in the java command line:

```
-Dorg.openas2.cert.TrustSelfSignedCN=www.openas2.localhost
```

If you experience problems with SSL, try adding this to the startup command in the script file:
-Djavax.net.debug=SSL

7. Remote Control

By default the OpenAS2 server application will start up a command processor as a socket listener allowing remote connection to the OpenAS2 server to execute commands. The OpenAS2 remote application is part of the application package but is not necessary to use it if you have no remote access requirement and should be disabled in the config.xml file if not using it by removing or commenting out the **<commandProcessor>** element with classname value **org.openas2.cmd.processor.SocketCommandProcessor**

You can set the port that the command processor listens on using the **portId** parameter.

<commandProcessor classname="org.openas2.cmd.processor.SocketCommandProcessor" portId="14321" userid="userID" password="pWd"/>

The remote control application will need to connect to the specified port with the specified user ID and password.

8. Dynamic Variables

Variables can be used in configuration files for real time replacement of strings. Some variables are specific to certain processor modules. The variables used in the configuration files are as follows:

$date.xxx$ ::: for date parameters
where xxx is any valid character formatting string defined in java.text.SimpleDateFormat
for example: *$date.YYYY$* gets the four digit year

$msg.xxx.yyy$, accesses various information about the incoming message, used by MessageFileModule. The available options for this format of dynamic variable are:

1. $msg.sender.as2_id$ - retrieves the AS2 ID of the sender of the message
2. $msg.receiver.as2_id$ - retrieves the AS2 ID of the receiver of the message
3. $msg.attributes.***yyy***$ - used to access any attribute on the message where the attribute identifier is used in place of "***yyy***"
   for example
4. $msg.headers.***yyy***$ - used to access any header on the message where the header identifier is used in place of "***yyy***"
5. $msg.content-disposition.***yyy***$ - used to access any content-disposition attribute in the message content disposition where the attribute identifier is used in place of "***yyy***"
   Some attriutes commonly found in an AS2 message content disposition include
   - filename – the original name of the file that was sent
   -

$mdn.zzz$ for message mdn parameters, used by EmailLogger and MDNFileModule
where zzz can be any of the following values to get

- msg – requires "zzz" to be in the form "xxx.yyy" and can access data points as defined for $msg.xxx.yyy$ format dynamic variables above
- sender – gets the as2_id of the sender
- receiver – gets the as2_id of the receiver
- text - gets the text portion of the MDN
- attributes – requires "zzz" to be in the form "xxx.yyy" and can access data points as defined for $msg.xxx.yyy$ format dynamic variables above
- headers – requires "zzz" to be in the form "xxx.yyy" and can access data points as defined for $msg.xxx.yyy$ format dynamic variables above

for example: *$mdn.text$* gets the text portion of the MDN

$exception.xxx$, used by EmailLogger
where xxx can be any of the follow ing values to get

- name
- message
- trace
- terminated

for example: *$exception.trace$* gets the trace log of the exception

9. Appendix: config.xml file structure

- Node: **openas2**
  - Node: **certificates**

    Attributes

    classname
    describes the Java class to process the certificate file.
    for example: *org.openas2.cert.PKCS12CertificateFactory*
    filename
    defines the file name containing the certificates
    for example: *%home%/certs.p12*
    password
    opens the file using this password
    for example: *test*
    NOTE: this can be overriden using a java system property when starting the application:
    -Dorg.openas2.cert.Password=<somePassword>
    interval
    describes how often the file should be check up for updates. Specified in seconds.
    for example: *300*
  - Node: **partnerships**

    Describes the OpenAS2 classes to handle the trading partner identifications.

    Attributes

    classname
    describes the Java class to process the partnerships file
    for example: *org.openas2.partner.XMLPartnershipFactory*
    defines the file name containing the partnerships definitions
    describes
    for example: *%home%/partnerships.xml*
  - Node: **loggers**

    Describes the OpenAS2 logging classes to use. **You must include -Dorg.apache.commons.logging.Log=org.openas2.logging.Log in your startup call or as a property in the commons-logging.properties file. See http://commons.apache.org/logging/guide.html#commons-logging-api.jar for more information.**

    Do not use this node when using other logging packages (e.g. log4j) with the

OpenAS2 package.

- Node: **logger** (for E-mail logging)
  Optional, if not specified no E-mail logging is performed.

  Attributes

  classname
  describes the Java class to process E-mail logging
  for example: *org.openas2.logging.EmailLogger*
  show (Optional)
  describes what level of logging to handle
  Possible values
  - all = all exceptions (terminated or not) and info
  - terminated = all terminated exceptions **Default value**
  - exceptions = all non-terminated exceptions
  - info = all info log entries

  for example: *terminated*
  from
  describes
  for example: *openas2*
  to
  describes
  for example: *your e-mail address*
  smtpserver
  describes the SMTP server to process outgoing e-mail
  for example: *mySillyMailerDot.com*
  subject
  describes the e-mail to the receiving party
  for example: *$exception.name$: $exception.message$*
  bodytemplate
  defines the file that contains the body of the message
  for example: *%home%/emailtemplate.txt*
- Node: **logger** (for file logging)
  Optional, if not specified no file logging is performed.

  Attributes

  classname
  describes the Java class to log messages
  for example: *org.openas2.logging.FileLogger*
  filename
  defines the name of the output log file.
  for example: *%home%/log-$date.MMddyyyy$.txt*
  show (Optional)
  describes what level of logging to handle
  Possible values
  - all = all exceptions (terminated or not) and info **Default value**
  - terminated = all terminated exceptions

- exceptions = all non-terminated exceptions
- info = all info log entries

for example: *terminated*

- Node: **logger** (for Console logging, writes to System.out)

  Optional, if not specified no console logging is performed.

  Attributes

  classname
  describes the Java class to log messages
  for example: *org.openas2.logging.ConsoleLogger*
  show (Optional)
  describes what level of logging to handle
  Possible values
  - all = all exceptions (terminated or not) and info **Default value**
  - terminated = all terminated exceptions
  - exceptions = all non-terminated exceptions
  - info = all info log entries

  for example: *info*

- Node: **commands**

  Describes the OpenAS2 command classes to use

  Attributes

  classname
  describes the Java class to process the command file
  for more information see Command File
  for example: *org.openas2.app.XMLCommandRegistry*
  filename
  defines the name of the file command all possible commands
  for example: *%home%/commands.xml*

- Node: **processor**

  Describes the OpenAS2 class to handle the message processors.

  Attributes

  classname
  describes the default Java class to handle outgoing message
  for example: *org.openas2.processor.DefaultProcessor*

- Node: **module**

  Module that sends out AS2 messages.

  Attributes

  classname
  describes the Java class to send outgoing Messages
  for example: *org.openas2.processor.sender.AS2SenderModule*

retry
: defines the number of attempts for sending a message,default is -1 aka infinite.
for example *retries="3"* will stop sending the message after 3 failures.

connecttimeout
: defines the millisecond count before a connection times out. default value is 30000 or 30 seconds.
for example *connecttimeout="60000"* will time out after 60 seconds.

readtimeout
: defines the millisecond count before a read times out. default value is 30000 or 30 seconds.
for example *readtimeout="60000"* will time out after 60 seconds.

- Node: **module**

  Module that sends out AS2 MDNs asynchronously.

  Attributes

  classname
  : describes the Java class to send asynch MDN
  for example:
  org.openas2.processor.sender.AsynchMDNSenderModule

  retry
  : defines the number of attempts for sending a message, default value is -1 (infinite.)
  for example *retries="3"* will stop sending the message after 3 failures.

  connecttimeout
  : defines the millisecond count before a connection times out. default value is 30000 or 30 seconds.
  for example *connecttimeout="60000"* will time out after 60 seconds.

  readtimeout
  : defines the millisecond count before a read times out. default value is 30000 or 30 seconds.
  for example *readtimeout="60000"* will time out after 60 seconds.

- Node: **module**

  The following will describe a module to process outgoing message placed in a generic directory. The module determines the receiver and send from the file name placed in the directory (see format attribute). This module will look for files in specified directory and file names to send to the default message processor.

  Attributes

  classname
  : describes the Java class to process files to be sent to the AS2SenderModule for its delivery process.

for example:
org.openas2.processor.receiver.AS2DirectoryPollingModule

outboxdir
: defines the directory where files are to be found.
for example: *%home%/toAny*

fileextensionfilter
: defines the extension of the file name if file filtering is required. The system will prefix the text entered in this attribute with a period and only files matching that extension will be picked up by the polling module
for example: txt - *this will only find files like test.txt but not mytxt*

errordir
: defines directory where files containing errors are redirected to.
for example: *%home%/toAny/error*

interval
: describes how often the directory is to be checked for work. Specified in seconds. Default is 30 seconds.
for example: *5*

delimiters
: defines the characters used to parse the incoming file name. Characters are separate the tokens: sender, receiver and file id.
for example: -.

format
: describes the file name by the tokens sender, receiver and file id. May be in any order. Sender id and receiver id are as defined in the partnership.xml file.
for example: *sender.as2_id, receiver.as2_id, attributes.fileid* or *attributes.mimetype, attributes.mimesubtype, sender.name, receiver.name*

mimetype
: describes the outgoing message mime message type.
for example: *application/EDI-X12*

- Node: **module**

Attributes

classname
: describes the Java class to process files for a particular trading partner that are sent to the AS2SenderModule for its delivery process.
for example:
org.openas2.processor.receiver.AS2DirectoryPollingModule

outboxdir
: defines the directory where outgoing message are defined.
for example: *%home%/toOpenAS2A/*

errordir
: defines the directory where erroneous messages are left.
for example: *%home%/toOpenAS2A/error*

interval
: describes how often the incoming directory is searched. Defined in seconds, default is 30 seconds.

for example: *5*

defaults
: describes the AS2 sender and receiver ids as defined in the partnership.xml file.
for example: *defaults="sender.as2_id=OpenAS2A_OID, receiver.as2_id=OpenAS2B_OID"*

protocol
: describes the AS2 protocol, which is AS2.
for example: *as2*

mimetype
: describes the outgoing message mime message type.
for example: *application/EDI-X12*

- Node: **module**

Attributes

classname
: describes the Java class to process incoming MDNs
for example: *org.openas2.processor.storage.MDNFileModule*

filename
: describes
for example: *%home%/mdn/$date.yyyy$/$date.MM$/$mdn.msg.sender.as2_id$-$mdn.msg.receiver.as2_id$-$mdn.msg.headers.message-id$*

protocol
: describes
for example: *as2*

tempdir
: describes
for example: *%home%/temp*

- Node: **module** Defines the module to handle messages.

Attributes

classname
: describes the Java class to process and store incoming messages
for example: *org.openas2.processor.storage.MessageFileModule*

filename
: describes the location and formatted filename of the stored MDNs.
for example: *%home%/inbox/$msg.sender.as2_id$-$msg.receiver.as2_id$-$msg.headers.message-id$*

protocol
: describes the AS2 protocol
for example: *as2*

tempdir (Optional)
: defines temporary directory used to store MDNs during message processing.
for example: *%home%/temp*

- Node: **module**

Attributes

classname
: describes the Java class to process handle incoming transfers
for example:
org.openas2.processor.receiver.AS2ReceiverModule

port
: defines the port the server listens on.
for example: *10080*

errordir
: defines directory where invalid incoming messages are stored.
for example: *%home%/inbox/error*

errorformat
: defines the format of filenames for invalid incoming messages.
for example: *sender.as2_id*, *receiver.as2_id*, *headers.message-id*

protocol
: optional and defaults to “http” if not present
set to “*https”* for SSL transport protocol

ssl_protocol
: optional and defaults to “TLS” if not present
set to preferred SSL transport protocol
for example: SSLv3

ssl_keystore
: The name of the file including path containing SSL certificate
only required for “protocol” attribute set to “https”
for example: *%home%/ssl_certs.jks*

ssl_keystore_password
: The password to open the SSL keystore
only required for “protocol” attribute set to “https”
for example: *mySecretPassword*
NOTE: this can be overriden using a java system property when starting the application:
-Dorg.openas2.sslPassword=<somePassword>

- Node: **module**

Attributes

classname
: describes the Java class to send asynchronous MDN response
for example:
org.openas2.processor.receiver.AS2MDNReceiverModule

port
: defines the port the server listens on.
for example: *10080*

protocol
: optional and defaults to “http” if not present
set to “*https”* for SSL transport protocol

ssl_protocol
: optional and defaults to “TLS” if not present
set to preferred SSL transport protocol
for example: SSLv3

ssl_keystore

The name of the file including path containing SSL certificate
only required for “protocol” attribute set to “https”
for example: *%home%/ssl_certs.jks*

ssl_keystore_password

The password to open the SSL keystore
only required for “protocol” attribute set to “https”
for example: *mySecretPassword*
NOTE: this can be overriden using a java system property when starting the application:
-Dorg.openas2.sslPassword=<somePassword>

- Node: **module**

Attributes

classname

describes the Java class to rehandle messages
for example:
org.openas2.processor.resender.DirectoryResenderModule

resenddir

defines the directory to find message to resend
for example: *%home%/resend*

errordir

defines the director to store resend messages that are in error.
for example: *%home%/resend/error*

resenddelay

defines the wait time between resends. Defined in seconds.
Default is 60.
for example: *600*

10. *Appendix: partnership.xml file structure*

This file describes your company and your trading partners. This file requires modification to work with your application

- Node: **partnerships**
  The root node.
  - Node: **partner**
    partner definition
    Attributes

    name

    partner name as defined in OpenAS2 configuration file.
    OpenAS2A

    as2_id

    partner name as defined in partnership node
    OpenAS2A

    x509_alias

    Alias as defined in certificate file
    o*penas2a*

email
: E-mail address of partner
as2a@MySillyMailerServer.com

- Node: **partnership**
  defines partner relationships between sender and receiver
  - Node: **partnership**
    Attributes

    name
    : Unique name of partnership relation. See filename parsing above.
    OpenAS2A-OpenAS2B
  - Node: **sender**
    Attributes

    name
    : Unique name of Sender
    OpenAS2A
  - Node: **receiver**
    Attributes

    name
    : Unique name of receiver
    OpenAS2B

    *The following is a list of nodes that use the node name of **attribute**. The subnodes of **attribute** use a name/value node naming pair structure.*

  - Node: **attribute**
    name is **protocol** defines the protocol to use with this partner.
    value is **as2**
    name="protocol" value="as2"
  - Node: **attribute**
    name is **subject** defines text used in E-mail subject line
    value
    name="subject" value="From OpenAS2A to OpenAS2B"
  - Node: **attribute**
    name is **as2_url** defines partners AS2 server's URL
    value
    name="as2_url" value="http://www.MyPartnerAS2Machine.com:10080"/>
  - Node: **attribute**
    name is **as2_mdn_to** when set this specifies that an MDN response is required and defines value of the "`"Disposition-Notification-To"` header in the AS2 message sent to the partner. It is normally an email address but can be any string that is meaningful
    value
    name="as2_mdn_to" value="datamanager@mypartner.com"
  - Node: **attribute**

name is **as2_receipt_option** defines asynchronous MDN server's URL
value
name="as2_receipt_option" value="http://www.MyAS2Machine.com:10081"

- Node: **attribute**
  name is **as2_mdn_options** defines MDN option values for E-mail header
  value
  name="as2_mdn_options" value="signed-receipt-protocol=optional, pkcs7-signature; signed-receipt-micalg=optional, sha1"
- Node: **attribute**
  name is **encrypt** defines encrypting algorithm name for E-mail header
  value
  name="encrypt" value="3des"
- *Node:* ***attribute (optional)***
  name *is* ***content_transfer_encoding*** *defines what the header field should display*
  value *8bit (default), binary, ...*
  name="content_transfer_encoding" value="binary"

- *Node:* ***attribute (optional)***
  name *is* ***compression_type*** *if defined it determines what the type of compression to use. Leave this attribute out if no compression is required*
  value *ZLIB (default) – no other supported options*
  name="compression_type" value="ZLIB"

- *Node:* ***attribute (optional)***
  name *is* ***compression_mode*** *if defined it determines when compression occurs. If this attribute is not specified then compression occurs before signing.*
  value *– "compress-after-signing"*
  name="compression_mode" value="compress-after-signing"

11. Appendix: command.xml file structure

List of commands available to the OpenAS2 server Application.

- Node: **commands** the root node
  - Node: **multicommand**

    attribute

    name
    value "cert|part", certificate commands or partnership commands
    description
    value is some useful text
  - Node: **command**

    attribute

classname
: value is a OpenAS2 classname that will process a command