e-AS2 SMTP

User Manual for Version 8.10.0

Esker EDI Services

e-AS2 SMTP

Calor-Emag-Straße 3 · 40878 Ratingen
Phone: 02102/479-0 · Fax: 02102/479-109

Document history

Vers.	Date	Auth.	Comment
3.0	10.08.2020	JK	First translation to English. Revised for version 8.0 of e-AS2.
3.1	15.04.2021	JK	Added information on how to turn of connection caching in Postfix. Added information on how to send HTML mails.
3.2	31.03.2022	JK	Updated information on HTML mails.
3.3	06.09.2022	JK	Added information on multipart/alternative mails and attachements.

Table of Contents

1 Introduction

What is e-AS2 SMTP?

With e-AS2 a flexible tool is available for handling file transfers via EDIINT/AS2. The basis for AS2 is the representation of the contents to be transmitted as S/MIME messages, whereby cryptography (encryption and signature) and compression of the data can be used. The transport method for AS2 is HTTP[1].

With e-AS2 SMTP we use the existing S/MIME capabilities of e-AS2 and replace HTTP as transport protocol by SMTP and POP3. In this way, e-AS2 is enabled to send and receive e-mails. On the opposite side, standard mail clients like MS Outlook or Mozilla Thunderbird, but also other automated mail processing systems can be used. The cryptographic methods in e-AS2 are compatible with all common mail clients due to the use of the S/MIME standard, so that the same level of security is available for sending and receiving mail as with AS2. PGP cryptography is available as an alternative to S/MIME, which further extends the range of possible uses.

e-AS2 SMTP is not intended as a general mail system as a basis for personal mails, but is specifically designed for the secure exchange of business data.

To use e-AS2 SMTP no additional software installation is necessary. SMTP/POP3 is simply activated as a feature via license file. AS2 and SMTP/POP3 can be handled by the same e-AS2 server. If desired, however, a separate installation of a pure e-AS2 SMTP is also possible, in which AS2 is not used.

The e-AS2 SMTP feature is only available for e-AS2 Enterprise. There is no SMTP extension for e-AS2 Connect. We assume that you have read the user manual for e-AS2 Enterprise. As a rule, we will not repeat anything in this manual that is already written there. Occasionally, reference is made to the e-AS2 Enterprise user manual for further reading.

Chapter 2 (*IT integration*) describes how to integrate e-AS2 SMTP into your existing mail infrastructure. This chapter should also be read by the system administrators responsible for IT in your company.

Chapter 3 (*e-AS2 SMTP as an email client*) deals with the operation of e-AS2 SMTP as a mail client. Here you will learn how to connect e-AS2 SMTP to existing mailboxes to send and receive mails via SMTP/POP3.

In Chapter 4 (*e-AS2 SMTP as mail server*) an alternative approach is shown where you configure e-AS2 SMTP as mail server. The POP3 protocol is not used in this configuration.

How to configure partner profiles for use for e-mail exchange is described in Chapter 5 (*Configuring partner profiles*).

In Chapter 6 (*PGP Cryptography*) we explain how you can use PGP instead of S/MIME for encryption and signature of e-mails.

[1] Alternatively HTTP/S, if SSL encryption is activated.

2 IT integration

How does e-AS2 SMTP fit into the existing infrastructure in your company?

We assume that the existing IT in your company already enables you to send and receive e-mails. This means that you use a standard e-mail client such as Outlook or Thunderbird to send and receive e-mails from your workstation PC.

To make this possible, your IT infrastructure has an MTA[2] for SMTP, a program that is responsible for distributing mails. In an IT based on Unix/Linux this is usually Postfix or Sendmail. With an MS Windows-based IT, MS Exchange is often used for this purpose. IBM Lotus Domino is also a possible candidate.

Your network also runs an IMAP or POP3 service that allows clients to retrieve e-mail from a central repository. Such a service can be implemented using separate software such as Cyrus IMAP or it can already be integrated as a component in the MTA used.

The following picture shows the integration of e-AS2 SMTP into the existing infrastructure.

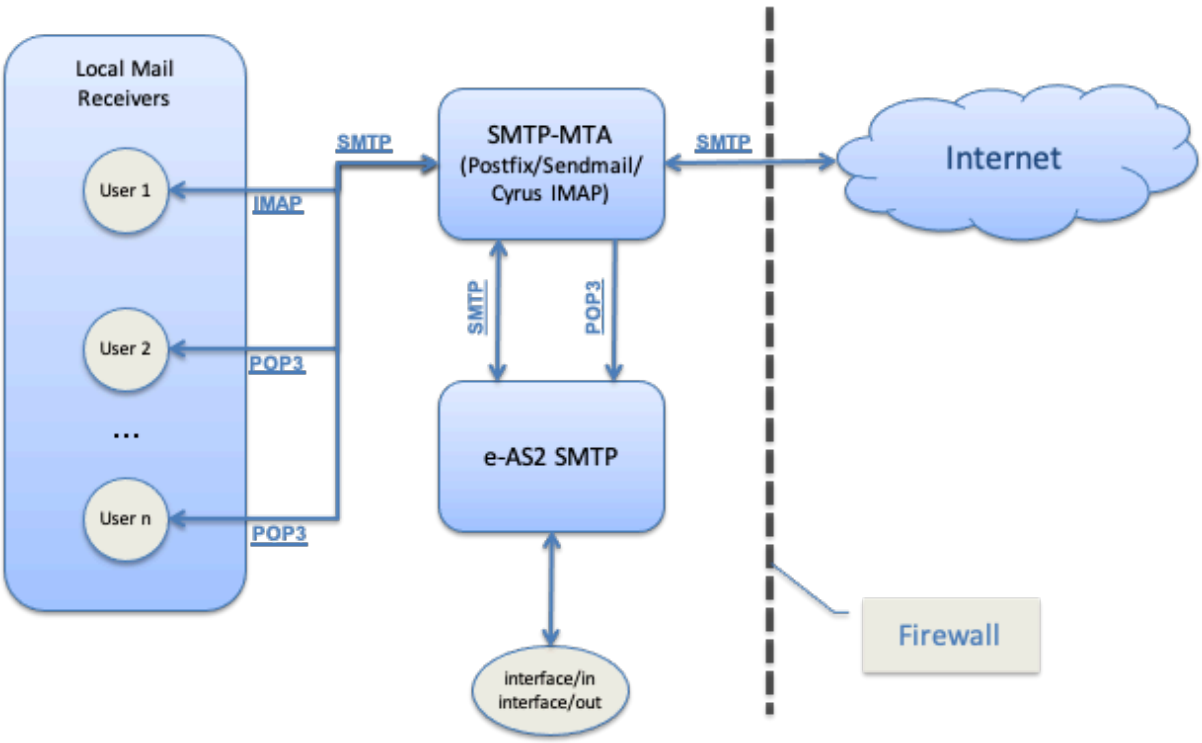

Figure 2.1. Integration of e-AS2 SMTP into the existing infrastructure

e-AS2 SMTP can be connected to the MTA like an e-mail client via SMTP/POP3[3]. We recommend this form of connection. Alternatively, e-AS2 SMTP can also act like an e-mail server and accept incoming SMTP connections. This enables the MTA to forward received e-mails directly to e-AS2. Both variants are documented in the rest of this manual.

[2] Mail Transfer Agent
[3] IMAP is not supported by e-AS2 SMTP.

3 e-AS2 SMTP as an email client

How can e-AS2 SMTP be used as an email client?

Prerequisite for the operation of e-AS2 SMTP as an email client is the existence of an MTA, which can be instructed to send mails via SMTP. Furthermore, a POP3 server is required from which received mails can be retrieved. The prerequisites and configuration are therefore basically comparable to the configuration of an IPM client such as Outlook.

For each of the two protocols (STMP and POP3) you need the following set of parameters to configure the connection to the respective server:

Host	The SMTP server (MTA) or POP3 server can be reached under this name (or IP address).
Port	The server is ready to accept connections via this port. This is port 25 by default for SMTP and port 110 by default for POP3, but may differ in individual cases.
User	User name for the login to the server. (Connections to SMTP servers can optionally be secured by login with user name and password. Connections to POP3 servers always require user name and password).
Password	Password for the login to the server. (Connections to SMTP servers can optionally be secured by login with user name and password. Connections to POP3 servers always require user name and password).
SSL parameters	SSL/TLS can be enabled for both SMTP and POP3. When using the STARTTLS method, the connection is established via the default port. When using the SSL method, a protocol-dependent different port is used. We recommend that you always use STARTTLS if this is supported by the server in question. If the connection to the STMP/POP3 server in the LAN is established, it is not normally necessary to secure the connection by encrypting it. We recommend that you do not use SSL in this case.

In addition, the following parameter is only relevant for POP3:

Retrieval interval	When using POP3, the client must connect to the mail server at regular intervals to retrieve any e-mails received on that server. For this purpose, a time interval must be configured for regular retrieval. Unlike the parameters mentioned above, this is not part of the POP3 protocol. It is only used to control the POP3 client integrated in e-AS2 SMTP.

In the further course of this chapter we will at first show how to create mail server profiles in e-AS2 SMTP where these connection parameters are configured. After that you will see how to configure partner profiles to send and receive e-mails.

3.1 Creating mail server profiles

If you have licensed the SMTP feature, two additional tabs appear in the e-AS2-GUI, “PGP keys” and “Mail servers”. In the “Mail servers” tab you can manage any number of SMTP and POP3 servers.[4] If you only want to connect to the internal email servers in your company, your

[4] You know such a possibility also from email clients like Outlook or Thunderbird, where you can create and use several mail accounts for different mail providers.

do not enter more than one set of SMTP and POP3 parameters here. However, you have the flexibility to address additional – external – mail servers and thus appear to your communication partners under different identities.

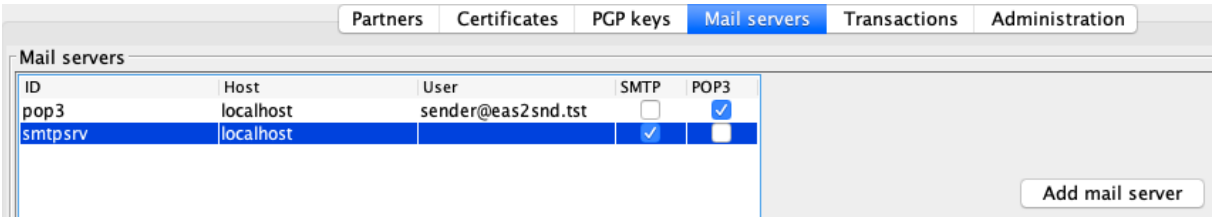

Figure 3.1. Additional menu items

To create a new server profile, press the button “Add mail server”. The following input dialog appears.

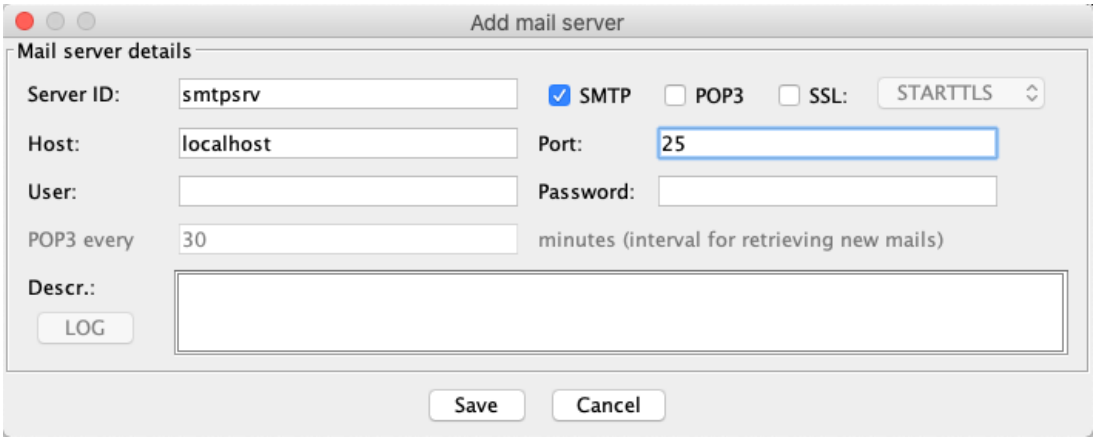

Figure 3.2. Add mail server

You assign an internal ID for the respective server. It will appear in the list under this ID after you save the profile. You then enter the parameters for the connection to this server (as explained at the beginning of this chapter). You can enter a free comment about this profile in the field “Description”.

By default, you use it to create an SMTP connection. If you want to configure a POP3 connection instead, uncheck “SMTP” and set it to “POP3”. Note that the field “Port” can also be left empty. In this case, the software uses the default port[5] for establishing the connection. If you leave the field “Port” empty and all other access parameters for your STMP and POP3 server are identical, then you can also set both check marks at “SMTP” and “POP3” in the profile. You have then configured both connections with one server profile in e-AS2.

For POP3, you also enter a value for the polling interval (in minutes). Adjust the pre-entered value of 30 minutes as required. For very time-critical applications, more frequent calls may be useful or necessary. In other cases, a much less frequent mail retrieval may be acceptable.

3.1.1 Testing an SMTP profile

To test a profile for SMTP, select the profile in the list and then click the “Test SMTP server” button.

[5] protocol dependent: 25 for SMTP, 110 for POP3

Figure 3.3. Testing an SMTP server

A dialog is displayed in which you can enter an email address for the test. After you have clicked on “Send”, a test mail will be sent to this address.

Should there be a problem connecting to the MTA, you will receive an error message directly in the GUI. You can find more information about the process in the log. After the test, check whether the e-mail has actually reached the desired recipient.

3.1.2 Testing a POP3 profile

To test a profile for POP3, select the profile in the list and then click the “Test POP3 server” button.

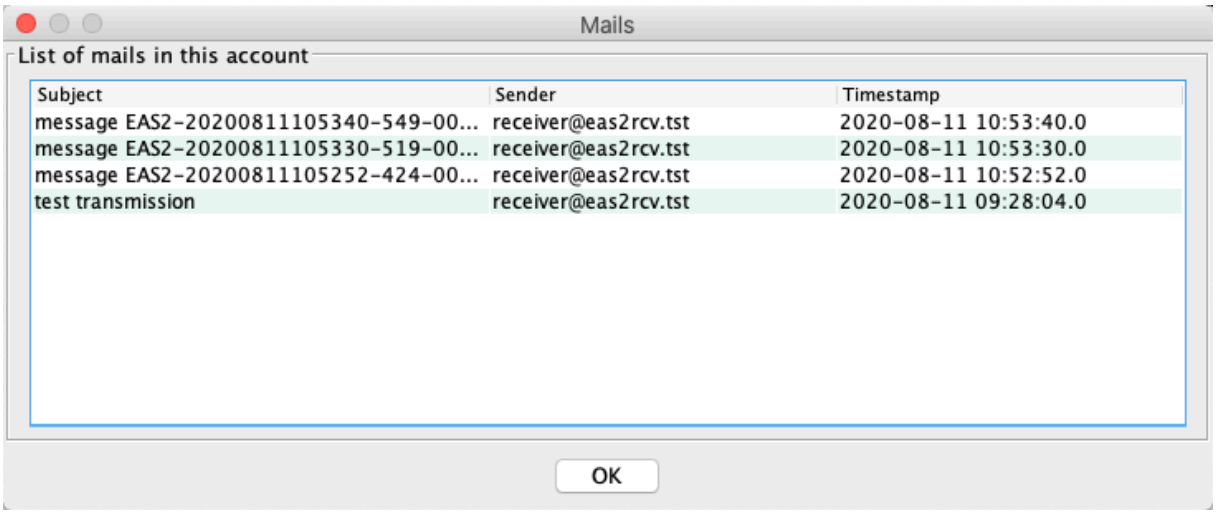

Figure 3.4. Testing a POP3 server

A connection to the configured POP3 server is then immediately established. The subject lines of the e-mails currently on that server are retrieved and displayed in a list together with sender and time of receipt. The mails themselves are not retrieved in the process and remain on the server untouched.

Should there be a problem connecting to the mail server, you will receive an error message directly in the GUI. You can find more information about this process in the log.

3.2 Setting an SMTP server in the partner profile

After you have configured one or more SMTP servers, you can select them for use in partner profiles. To do this, open the tab “Mail” in the partner profile. On that tab you can select one of the configured SMTP servers.

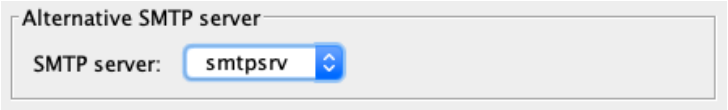

Figure 3.5. Choose SMTP server

After you have assigned the partner profile to an SMTP server in this way, all outgoing mails directed to that partner profile will be processed exclusively via this server from now on. If you leave the field empty and do not select an SMTP server from the list, the mail server configured in EAS2`.properties` for handling operator mails will be also addressed for outgoing emails.[6]

For general information on how to configure partner profiles for e-mail exchange, please refer to Chapter 5 (*Configuring partner profiles*). There you can read all further details about partner configuration.

3.3 POP3 retrieval

The e-AS2-server starts without further measures with the regular retrieval of mails via POP3 as soon as corresponding profiles are available in the configuration. The configured polling interval refers to the current time, not to the time when the mail server profile was saved. If the retrieval interval is every 30 minutes, the retrievals will always take place on the full and half hour.

Watch the log file after setting up new POP3 profiles to see if the connection is successful and if emails are retrieved.

Unlike SMTP, there is no fixed assignment between a mail server profile for POP3 and one or more partner profiles. After retrieving e-mails from the POP3 account, the assignment to the partner profile is based solely on the sender and recipient addresses of the respective mail. This topic is discussed in more detail in Chapter 5 (*Configuring partner profiles*).

To temporarily exclude a POP3 server from the polling cycle, change the associated server profile by setting the polling interval to 0. This makes the profile inactive (for the POP3 retrieval). You can reactivate it later at any time by entering a positive value for the polling interval.

[6] Refer to the manual for e-AS2 Enterprise for details on configuring the mail server for operator mails.

4 e-AS2 SMTP as mail server

How can e-AS2 SMTP be configured as an e-mail server?

As an alternative to POP3 retrieval for incoming e-mails, the use of e-AS2 as an SMTP server is possible. On the one hand, e-AS2 must be configured accordingly. On the other hand, the MTA in your network must be set up in such a way that it selects incoming e-mails according to certain criteria and forwards them to e-AS2 SMTP.

4.1 Configuring e-AS2

To make e-AS2 SMTP ready to accept incoming connections via SMTP, configure the port for SMTP in `EAS2.properties`.

```
connection.smtp.port = 5025
```

In principle, you can choose any port. However, we do not recommend using the standard SMTP port 25 for this purpose, for the following reasons:

- You could then run e-AS2 SMTP not on the same machine as the standard MTA, since the port can only be used once.
- You would need to run e-AS2 SMTP with root privileges, since port 25 is a privileged port.
- You would suggest to clients using port 25 that e-AS2 SMTP is a fully-fledged SMTP MTA, which, as noted above, is not the case.

Once the port is configured for SMTP in `EAS2.properties`, an additional thread is started when e-AS2 is started, which handles incoming SMTP connections.

4.2 MTA configuration (Postfix)

We cannot cover all possible mail systems in this manual. The configuration of the MTA is basically a matter for your system administrator. However, it will be documented using the example of Postfix, which is widely used under Linux. This should also provide sufficient information for the configuration of other mail systems. Figure 4.1, “Routing incoming emails” illustrates the procedure for mail routing.

We recommend routing of received mails to e-AS2 based on a dedicated sub-domain. We assume that the Internet domain of your company is **mydomain.com**. (Your websites are accessible via **www.mydomain.com**.) You define an additional sub-domain, e.g. **eas2.mydomain.com**.[7]

You request your Internet provider to forward emails to the respective sub-domain. (For this purpose a so-called "MX Record" must be created).

You then configure your MTA so that mails addressed to the sub-domain are forwarded to e-AS2. The following sections explain how to do this for Postfix using examples.

[7] Alternatively, you can define one or more sub-domains with application reference, e.g. **orders.mydomain.com** or **edi.mydomain.com**.

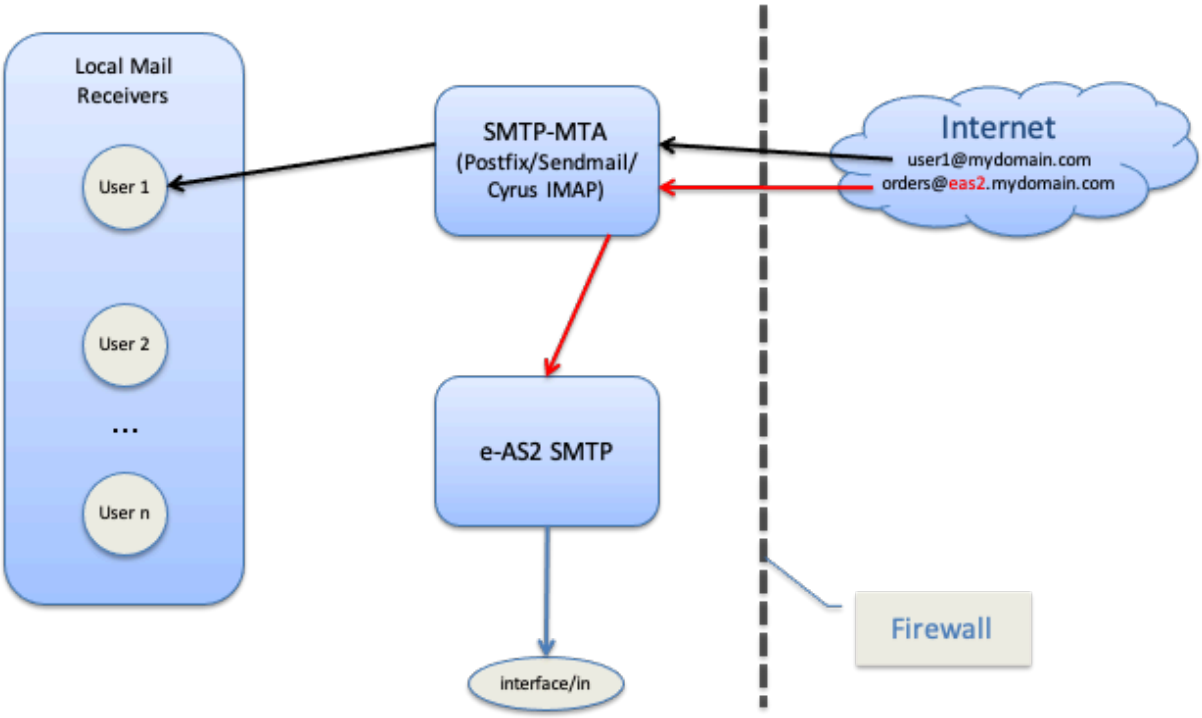

Figure 4.1. Routing incoming emails

4.2.1 Adding service to `/etc/postfix/master.cf`

Define a new service names smtp-eas2 in `master.cf` as follows:

```
smtp      unix  -    -    n    -    -    smtp
smtp-eas2 unix  -    -    n    -    -    smtp -o smtp_connection_cache_on_demand=no
```

The `stmp` line is already present in `master.cf`. Place the second line defining `smtp-eas2` right below the existing line.

With this configuration you turn connection caching off, which is important, because e-AS2 is not capable of doing this.

4.2.2 Adding rule to `/etc/postfix/transport`

Add the following line to the file:

```
eas2.mydomain.com  smtp-eas2:[localhost]:5025
```

Replace `localhost` with the name of the host on which e-AS2 is running, if it is not the same system on which the MTA is running.

This ensures that incoming mails for the sub-domain “eas2” are forwarded to e-AS2 by SMTP protocol via port 5025 without connection caching.

4.2.3 Activating transport rules in `/etc/postfix/main.cf`

Add the following line to the file:

```
transport_maps = hash:/etc/postfix/transport
```

This causes the entries in `/etc/postfix/transport` to be considered my the MTA during mail processing.

This basically completes the configuration. If you want to test the routing towards e-AS2 locally before an MX record is available for the sub-domain, or if you want to use the routing without a dedicated externally addressable sub-domain, you can map any email addresses in your domain to one or more addresses in the sub-domain using an alias entry.

4.2.4 Adding an alias to `/etc/aliases` (optional)

For example, add the following entry to the file:

```
orders.eas2: orders@eas2
```

This causes Postfix to map the mail address <`orders.eas2@mydomain.com`> to the address <`orders@eas2.mydomain.com`> and then run into the defined forwarding towards e-AS2 due to the sub-domain routing.

A locally sent mail to this address should then arrive at e-AS2 SMTP accordingly.

5 Configuring partner profiles

How are partner profiles configured for sending and receiving emails?

The configuration of partner profiles for e-mail is basically independent of whether e-AS2 is configured as an e-mail client (with POP3 retrieval for reception) or as a mail server (SMTP in both directions).[8] Where there are differences in detail, this is explicitly pointed out. In this chapter we assume at first that you use S/MIME for the cryptographic aspects. The configuration for using PGP is covered in Chapter 6 (*PGP Cryptography*).

5.1 Sending emails

To set up a partner profile in e-AS2 for sending emails, create a new profile as documented in the user manual of e-AS2 Enterprise. Assign an internal identifier and select "SMTP (S/MIME)" in the drop-down list to the right. Then enter the desired sender address and the desired recipient address and save the new profile.

Figure 5.1. Creating a new partner for email

In this example, you will be able to send emails to the mail address <john.doe@acme.com> using the internal partner ID jd_acme, where <orders@mydomain.com> is used as the sender address.[9]

We assume here a typical configuration when using e-AS2 as a mail client. In your network there is then a POP3 mailbox for the user “orders”. Mails addressed to <orders@mydomain.com> are stored in this mailbox and are retrieved from there by e-AS2 via POP3. If e-AS2 is configured as a mail server and a sub-domain has been set up as described in Section 4.2 (*MTA configuration (Postfix)*), you would configure <orders@eas2.mydomain.com> in the partner profile as your own address in e-AS2 instead.

Immediately after creating the new partner profile you can send a test mail via this profile using the button “Send file”. Apart from this, use the interface area of e-AS2 in the usual way. Both the directory interface and the INF interface are supported for sending e-mails.

If a test file is sent via the GUI, you will receive the following message if it is successful:

[8] Mixed operation with both methods is also possible.
[9] Note, that after having chosen SMTP quite a few fields of the partner profile dialog are automatically being disabled, because they are not relevant for email transfers.

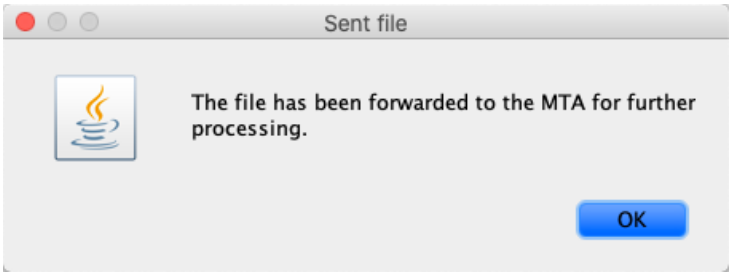

Figure 5.2. Test data sent

Otherwise you get an error message like this one:

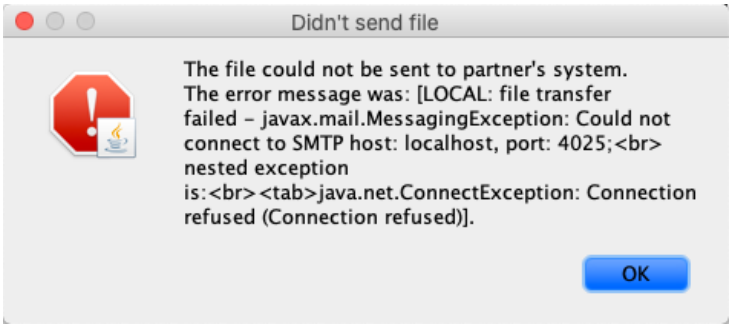

Figure 5.3. Sending test data failed

If you like to send HTML formatted mails, then prepare the payload file as an HTML file, that would be correctly rendered in an Internet browser. Then set the content type for the transaction to “text/html”. You can do this interactively in the GUI as follows.

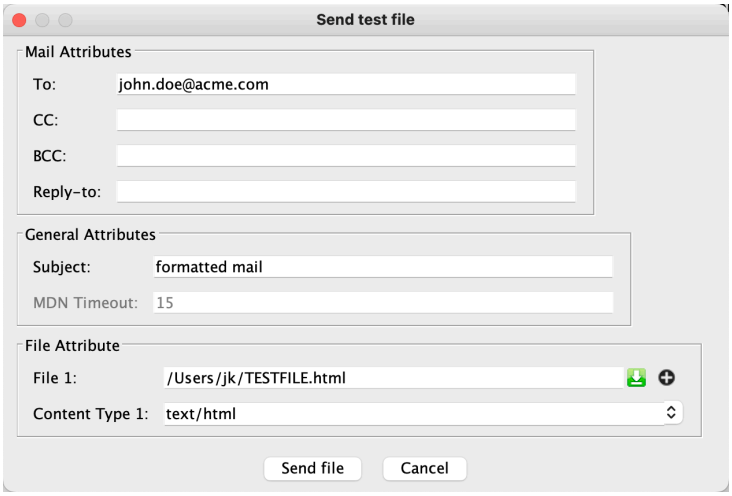

Figure 5.4. Sending HTML formatted mail

When sending HTML mails, you can also add attachments. When the first file is “text/html”, then this will be displayed as the mail body at the receiver's side. All further files will be sent as attachments. You can do this interactively in the GUI as follows.

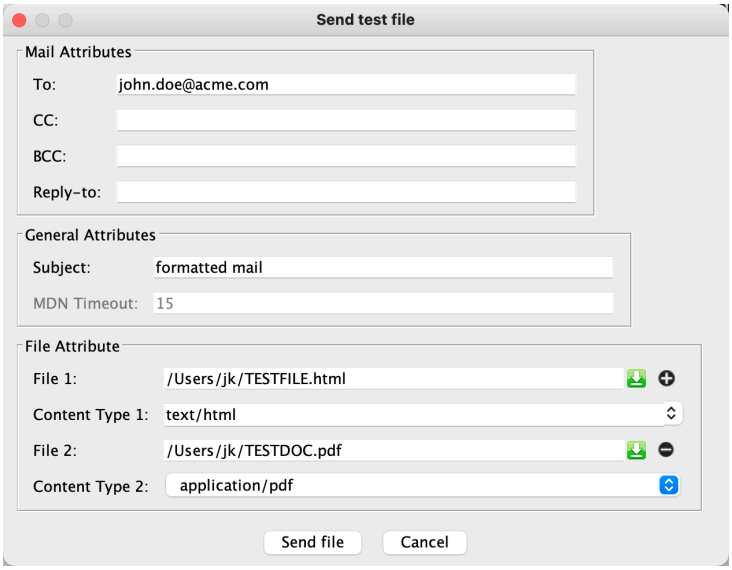

Figure 5.5. Sending HTML formatted mail with attachments

Last, but not least, you can also create “multipart/alternative” mails with e-AS2 SMTP. When the first two files are of type “text/html” and “text/plain” or the other way around, then a “multipart/alternative” mail will automatically be constructed. All further files will be sent as attachments. You can do this interactively in the GUI as follows.

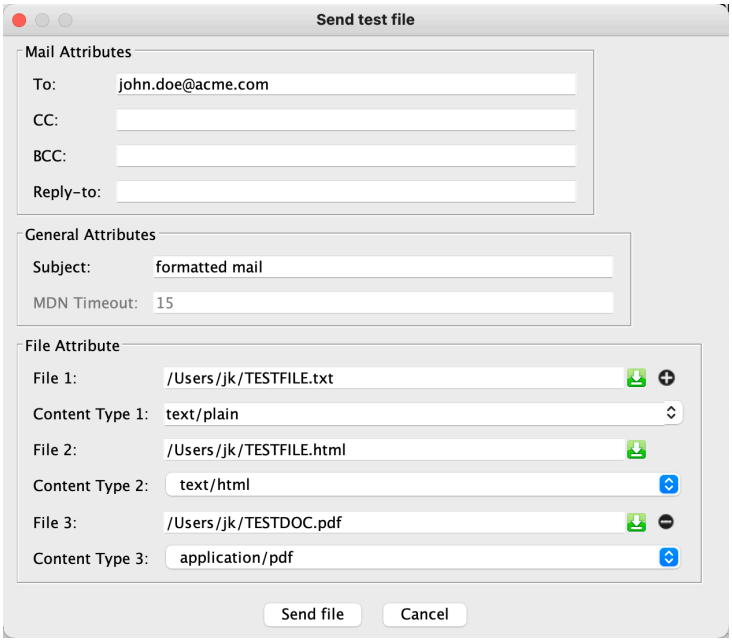

Figure 5.6. Sending multipart/alternative mail with attachments

Please note that - unlike communication via AS2 - with SMTP no end-to-end connection is established between the sender and the intended recipient of the mail. The success message says no more and no less than that the transfer to the MTA has been successful. This does not mean that the mail can be delivered and reaches the intended recipient. Even e-AS2 cannot help against the well-known imponderabilities when sending e-mails.

If there are difficulties in the delivery of the email passed to the MTA, e-AS2 will receive a Non-Delivery-Report (NDR) after a while. Unfortunately, it cannot always be guaranteed that NDR

can be assigned to the original send transactions.[10] If it is possible, e-AS2 SMTP will do so, so that the error message can then be viewed directly via the GUI in the transaction record.

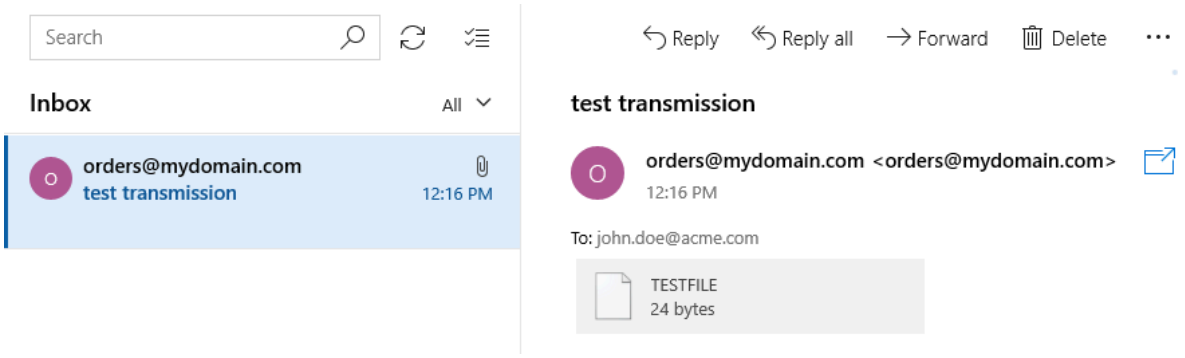

Figure 5.7. Receiving email with Windows 10 Mail

The picture above shows the view of the recipient of your test mail. Here, Windows 10 Mail is used as an example as an email client. Please note that the email does not contain any text, but consists of a single attachment, in the example the file `TESTFILE`.

5.2 Receiving emails

The partner profile that you have just set up also allows e-AS2 to receive emails sent from `<john.doe@acme.com>` to `<orders@mydomain.com>`.

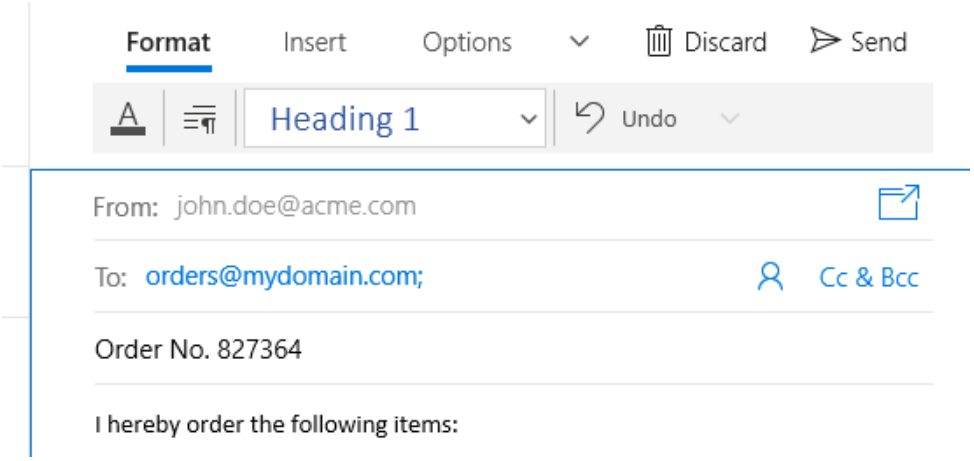

Figure 5.8. Sending email with Windows 10 Mail

Such emails are stored in `interface/in` after receipt by e-AS2 together with a corresponding result file. Emails from other senders cannot be assigned to a partner profile and end up in `interface/orphan`.

Note that in the configuration – exactly as with AS2 – the specifications From and To are always entered as sender from the view of e-AS2. When you receive mails, From and To are swapped in these mails with respect to the partner profile.

[10] This is due to the fact that there are no clear rules or standards for the construction of such negative receipts. The variety is great and the structure varies greatly depending on the mail servers involved. Technically speaking, e-AS2 depends on the message ID of the originally sent mail being cited recognizably in the negative acknowledgement. If this is not the case, it cannot be assigned to the transaction.

In the transaction list you can find email transactions like AS2 transactions.

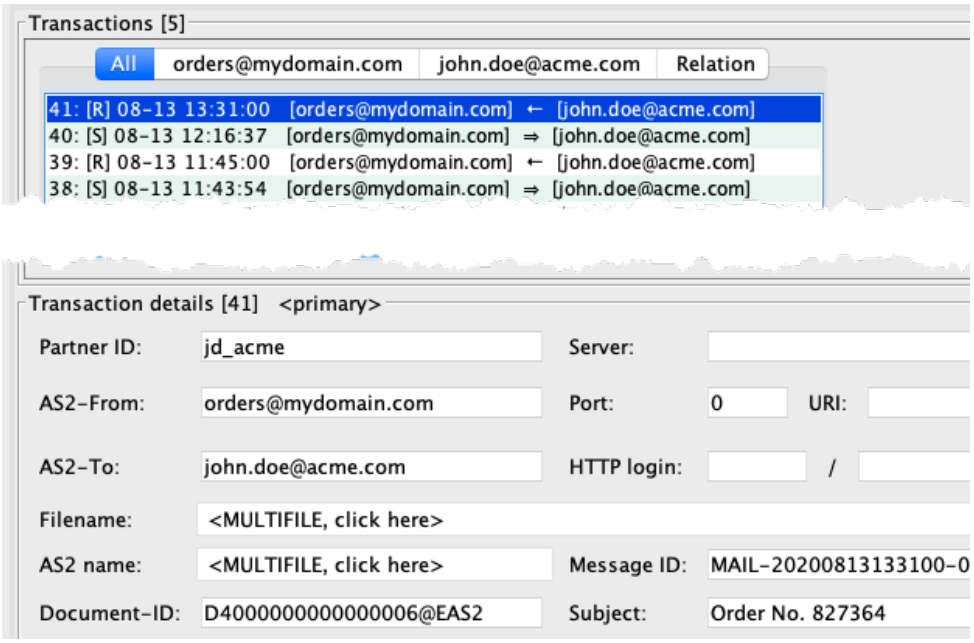

Figure 5.9. Transaction list

The example shows the sending of the test data (transaction 40) and the receipt of the order (transaction 41).

5.3 Interface files

In connection with the processing of emails, the multifile mode of e-AS2 is of great importance. Please refer to the manual for e-AS2 Enterprise for the corresponding section.

If the sender of an email received with e-AS2 SMTP used a typical desktop mail client, then most probably the internal structure of the email is as follows:

- The mail text, unformatted
- The mail text, formatted in HTML
- Optional: one or more attachments

All these components are called “body parts”. A mail with one unformatted text, one HTML text and two attachments thus consists of four body parts.

If the mail is received with a desktop mail client, the client can choose whether to display the unformatted text version or the HTML version. Both are equal in content. In addition to the mail text, the attachments are presented in some form, often as links and/or icons, and offered to the user for saving to disk or opening directly in the assigned application.

When receiving such a multipart mail, e-AS2 SMTP treats all body parts equally. So you will find all body parts, even the two versions of the mail text, equally valued next to each other in the `in` directory. The corresponding result file will show the file names of attachments and content types. The following listing shows an example of a possible result file after receiving a multipart mail.

```
INST_NAME      [null]
RECEIVED       [2020-08-13 13:58:00.063]
```

```
ACKNOWLEDGED  [2020-08-13 13:58:00.064]
AS2FROM       [john.doe@acme.com]
AS2TO         [orders@mydomain.com]
MAIL_TO       [orders@mydomain.com]
MAIL_REPLY_TO [john.doe@acme.com]
FILENAME      [null]
FILENAME      [null]
FILENAME      [order_827364.pdf.pdf]
FILENAME      [tech-specs.xml]
MESSAGE_ID    [MAIL-20200813135800-034-000007]
SUBJECT       [Order No. 827364]
CERT_SERIAL   [null]
CERT_ALIAS    [null]
P_INT_ID      [jd_acme]
TRANS_ID      [42]
DOC_ID        [D4000000000000007@EAS2]
ORG_DOC_ID    [D4000000000000007@EAS2]
STATUS        [1]
ERRORCODE     [0]
DESCRIPTION   [null]
CONTENT_TYPE  [text/plain; charset=utf-8]
CONTENT_TYPE  [text/html; charset=utf-8]
CONTENT_TYPE  [application/pdf; name=order_827364.pdf.pdf]
CONTENT_TYPE  [application/xml; name=tech-specs.xml]
MDN_REQUEST   [false]
```

You will find four FILENAME entries for four received body parts and further down the four corresponding CONTENT_TYPE entries. The first two entries without file names and with Contype Type “text/plain” and “text/html” respectively relate to the mail text. The other two entries belong to two attachments (a PDF file and an XML file) that were sent with this mail.

To send the INF file, use the multifile interface when creating the INF file. Use the specification of file types via CONTENT_TYPE-lines. By default, e-AS2 sends mails with an empty mail text and only attachments. However, if you specify a plain text file via the INF file as the first attachment and also declare this via the mime-type assignment `text/plain` in the CONTENT_TYPE line, the contents of this file are used as mail text. All other specified files become attachments. Here is an example of an INF file constructed in this way:

```
P_INT_ID        [jd_acme]
SUBJECT         [EDI data]
DOC_ID          [1371]
REQUEST_DR      [true]
FILENAME        [FILE.1371]
AS2NAME         [BODY]
CONTENT_TYPE    [text/plain]
FILENAME_2      [FILE.1371.2]
AS2NAME_2       [INVOICE NO. 4711]
CONTENT_TYPE_2  [application/edifact]
```

Based on this INF file, e-AS2 SMTP would create an email with a mail text (from the file FILE.1371) and an EDIFACT attachment (from the file FILE.1371.2) and send it to the desired recipient.

If required, you can also specify the encoding for the mail text. To do this, use a CONTENT_TYPE line as follows (example)

```
CONTENT_TYPE  [text/plain; charset=utf-8]
```

5.4 Using wild-card addresses

If you have a business relationship with a company with several employees who potentially send you emails, it can be very time-consuming to configure each relationship individually. In this case you have the possibility to work with wild-cards.

Figure 5.10. A partner profile with a wild-card address

For the To address, replace the part before the @ sign with *. This allows the receipt of mails from any sender from the domain <acme.com>. All mails are assigned to the same partner profile. However, the actual sender of the data is always indicated in the result file. The actual sender is also always displayed in the transaction list in the GUI.

Such a profile covers the reception of mails from a domain quite elegantly, but now brings difficulties in sending them. Mails sent via the internal partner ID no longer reach a meaningful recipient. Using the INF interface, however, you can still send mails to specific recipients in the domain.

Here is an example of such an INF file.

```
AS2FROM          [orders@mydomain.com]
AS2TO            [john.doe@acme.com]
M_CCADR          [richard.row@acme.com]
M_BCCADR         [copy@mydomain.com]
M_REPLY          [support@mydomain.com]
SUBJECT          [EDI data]
DOC_ID           [1371]
REQUEST_DR       [true]
FILENAME         [FILE.1371]
AS2NAME          [BODY]
CONTENT_TYPE     [text/plain]
FILENAME_2       [FILE.1371.2]
AS2NAME_2        [INVOICE NO. 4711]
CONTENT_TYPE_2   [application/edifact]
```

The mail arrives accordingly, also with the given subject, at the respective recipient. The specification of sender address (AS2FROM) and recipient address (AS2TO) is mandatory for this form of INF file. The specifications M_CCADR, M_BCCADR and M_REPLY are optional and can be used if a CC address, a BCC address and/or a reply-to address are to be included in the mail.

5.4.1 World wild-card addresses

If you also want to save yourself the trouble of configuring each individual domain, you can also enter a world wild-card address as a To address. You do this by entering

```
*@*
```

into the respective field in the partner dialog. This enables you to send to any e-mail address as well as receive from any e-mail address. Your own address remains explicitly defined by the From specification in the partner dialog.

Activating world wild-card addresses

The consideration of World-Wildcard addresses is switched off by default on the server side for security reasons. It is only recommended in exceptional cases. Especially accepting any sender addresses when receiving mails potentially opens a gateway for spam and other unwanted emails.

You can activate the feature separately for send and receive operations. To do this, use the following settings in EAS2.properties:

```
smtp.send.wildcard.world.enable = 0
smtp.recv.wildcard.world.enable = 0
```

Set the respective value to 1 to activate the desired feature. After a restart of the server the feature is available.

5.5 Multiple own identities

The previous section dealt in detail with the assignment of received e-mails to partner profiles based on the sender address of the mail. With e-AS2 SMTP it is easily possible to manage several own identities. You simply create additional partner profiles with different own addresses. The addresses must be fully qualified. A wild-card mechanism is not available at this point.

When using POP3 retrieval, there are two ways to ensure that mails to different target addresses all arrive at e-AS2 You can retrieve several POP3 mailboxes, each with its own identity assigned. You could also configure the mail system in your domain so that mails to different destination addresses are delivered to a single POP3 mailbox.

If you prefer a configuration with e-AS2 as SMTP server using a sub-domain, as described in Chapter 4 (*e-AS2 SMTP as mail server*), then all mails addressed to this sub-domain will be delivered to e-AS2. By means of appropriately set up partner profiles, you ensure the necessary further processing within e-AS2.

For assignment to a partner profile, the recipient address according to the MIME envelope is always evaluated in addition to the sender address for received mails. All TO addresses are considered at first, followed by all CC addresses, in the order in which they are listed in the MIME envelope. When the first hit occurs, the procedure is terminated and the e-mail is assigned to the corresponding partner profile. It is therefore not possible for an email addressed to multiple recipients to be assigned to multiple partner profiles within e-AS2.

Note that an assignment can only be made using the TO or CC address. Any BCC addressing used by the sender cannot be used for the assignment for technical reasons.

5.6 Mail receipts

The way e-AS2 deals with the subject of email receipts deserves separate consideration. On the one hand there is the question of receipts when sending mails. On the other hand, the question of receiving mails is even more complex. We will deal with both areas in the following.

Before doing so, however, it should be pointed out that – unlike AS2 – there is no obligation to send receipts when exchanging e-mails, even if the sender explicitly requests this. Nor is a specific receipt format in any way specified or prescribed. In particular, there are no generally

valid methods that would allow a receipt to be uniquely associated with a previous mailing. Generally, receipts are treated like normal mails, but with special contents.

In practice, however, most mail systems in use today generate receipts that can be used in automated processes. So when the other side responds to a receipt request, e-AS2 SMTP will try to assign the received receipt to the corresponding send transaction and change the status there accordingly.

But as already mentioned: neither can we guarantee that the other party will send receipts at all, nor can we guarantee that receipts received by e-AS2 will be automatically utilizable. If you want to use mail receipts productively, you should discuss this with your business partner to ensure that you have a common view on the matter. Extensive testing is recommended.

5.6.1 Receipt request on send

By default, e-AS2 SMTP does not request receipts when sending mails. However, you can add a receipt request by setting the Ack mode to email in the partner profile.

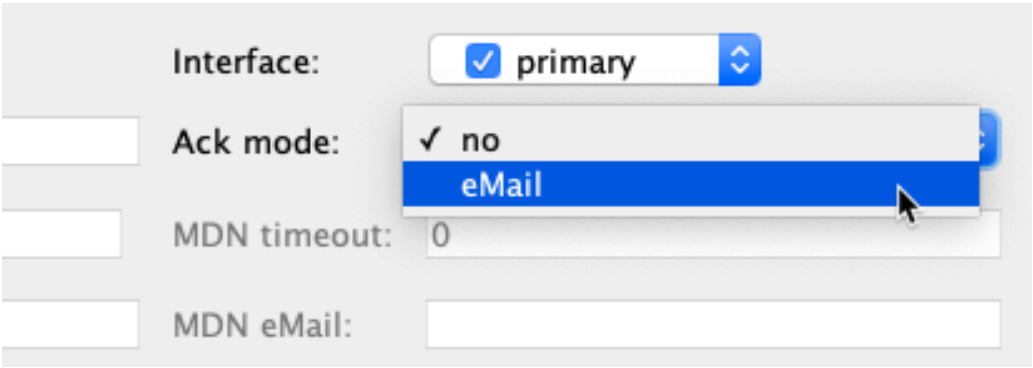

Figure 5.11. Requesting a receipt

This ensures that when sending emails to the respective communication partner, a receipt is requested to the sender address. If you want a receipt to be sent to an address that differs from the sender address, you can enter this different receipt address in the E-mail field.

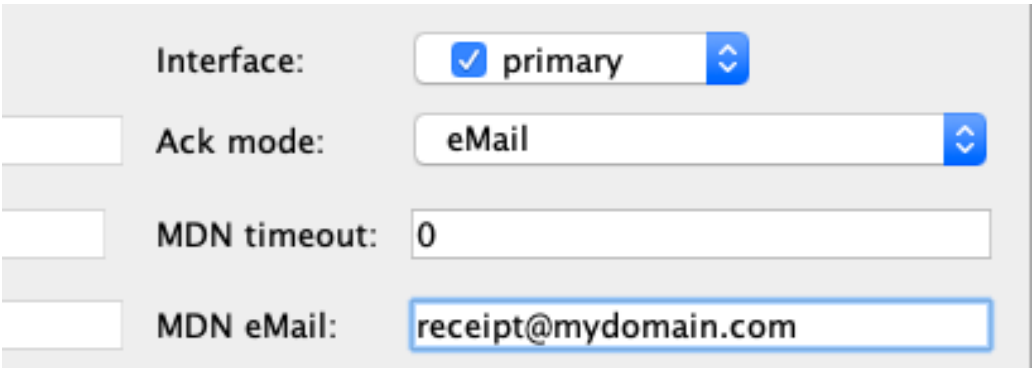

Figure 5.12. Request a receipt to a different email address

Please note that under no circumstances are you guaranteed to receive the receipt. Whether a receipt request is respected is at the discretion of the mail recipient. Many mail clients do not generate a receipt, especially if the receipt address differs from the sender address. Some mail clients ask the user whether a receipt should be generated or not for each individual mail received.

If the receiving mail client generates an acknowledgement containing the original message ID, e-AS2 SMTP can uniquely assign the acknowledgement to the sent message. The status of this message in the transaction list will then change from "sent" to "MDN received", just as you are used to in AS2 communication. The acknowledgement message itself is stored, together with a result file, in the directory `interface/in_mdn`.

If the receiving email client generates receipts that do not contain the original message ID, e-AS2 SMTP cannot tell from the receipt that it is one. The receipt is thus treated like an incoming mail, possibly leading to an additional transaction and to saving the receipt text in the directory `interface/in` or `interface/orphan`.[11]

When sending mails, you must expect to receive receipts even if you have not requested any. This happens when the email can be submitted to the MTA, but a subsequent delivery error occurs. Such delivery errors can occur, for example, due to incorrectly written and therefore invalid email addresses or if the mail server in the target domain is temporarily unavailable.

Unfortunately, the internal structure of such non-delivery reports is also very diverse and the above-mentioned applies accordingly. If e-AS2 SMTP can find a Message-ID in the receipt, it will try to assign it to the respective dispatch transaction. There is no guarantee of success. If a non-delivery report cannot be assigned, it is stored without comment in `interface/orphan`. It is therefore always a good idea to monitor this directory.

5.6.2 Generation of receipts when receiving mails

The default setting of e-AS2 SMTP regarding receipts for received mails is as follows

- A receipt is generated for mails that can be assigned to a partner profile, provided the sender has requested this.
- No receipt is generated for mails that cannot be assigned.

At first we will take a closer look at the case of unassigned mails. Many mail servers generate negative receipts in this case, which say that the respective destination address does not exist. However, when using e-AS2 SMTP it can be assumed that there is a relatively small, closed circle of users. You do not want to open e-AS2 for any sender on the Internet, but only for those users with whom you have business relations. This is always done by prior arrangement. In such a situation it is advisable to keep senders of unwanted emails in the dark about what happened to their emails. Therefore, e-AS2 does not send negative receipts back to the sender by default.

However, if you explicitly want negative receipts to be sent, you can activate this in `EAS2.properties` as follows:

```
mail.non-delivery.bounce = 1
```

The default value for this property is 0, which disables the receipts. With the value 1, they are switched on. The e-AS2 server must be restarted for a change to this property to take effect. Negative receipts are generated with a fixed text in English.

If a received mail could be assigned to a partner profile, a positive receipt with a general text is generated by default if the sender has requested a receipt. The behavior can be controlled by configuration via the e-AS2 GUI. To do this, open the “Mail” tab.

[11] Some desktop email clients try to assign receipts based on the subject. However, this method is considered too fragile in the context of exchanging business transactions. For this reason, this method has not been implemented.

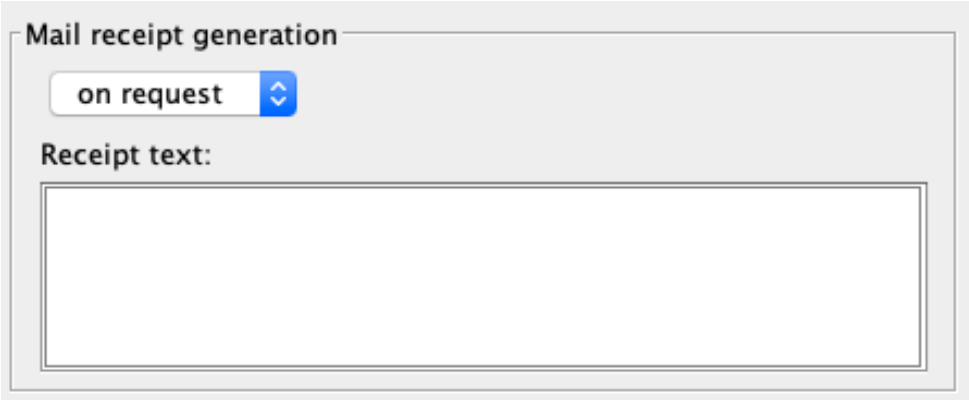

Figure 5.13. Configuring mail receipts

In the upper right corner you can set the behavior regarding email receipts. In the default setting “on request” e-AS2 SMTP generates receipts only if the sender has requested them.

Using the dropdown box, "never" or "always" can be selected as an alternative to "on request". The effects of these settings are self-explanatory. With "never" a receipt is never generated, even if the sender has requested it. With "always" a receipt is always generated, even if the sender has not requested it.

Normally a standard text in English is sent as a receipt. However, you have the option of entering an alternative receipt text in the "Receipt text" field for each partner.

5.6.3 Cryptography and Compression

When exchanging mail with e-AS2 SMTP you have the usual AS2 encryption and signature options at your disposal. The configuration does not differ in any way from the procedure with AS2. Please refer to the user manual of e-AS2 Enterprise for the relevant chapters to familiarize yourself with the topic.

All current email clients support cryptography via S/MIME. This means that you can, for example, work with a business partner who uses Outlook or Thunderbird in both directions with both encryption and signature, also in combination.

It should be noted, however, that email clients - unlike e-AS2 - normally do not accept self generated, self-signed certificates. In this case, they are dependent on using official certificates issued by a well-known trust center.[12]

Of course you can also send emails from e-AS2 to another e-AS2 which is installed at your business partner. In this case, you can also work with self-signed certificates without any problems and without any further ado.

The ZLIB compression used with AS2 is not supported by current email clients. Therefore this option is inactive in the partner configuration for e-mail with S/MIME and cannot be used.[13]

[12] The presentation of the configuration of different email clients for cryptography is beyond the scope of this document. Please refer to the respective program documentation of the email clients used.
[13] However, e-mail with compression is available when PGP is used as a cryptographic technique. You can learn more about this in Chapter 6 (*PGP Cryptography*).

6 PGP Cryptography

How can PGP be used for encryption and signature?

In connection with the secure sending of emails, PGP[14] has established itself as an alternative standard for cryptography. Like S/MIME, PGP is based on asymmetric encryption methods and offers the same level of security. In e-AS2 SMTP you will find PGP fully[15] supported, both for sending and receiving mails.

6.1 PGP key management

Prerequisite for the use of PGP in e-AS2 is the PGP key management. You can find it in the tab “PGP keys”. Right after initial software installation, the list is empty at first.

To use PGP you must

- generate a secret key for each own identity and
- Import a public key per partner identity.

It is important to know that with PGP, keys are identified by an assigned e-mail address. The e-mail address must match the e-mail address of the respective party used in the mail exchange exactly. So please check carefully whether the email addresses noted in the PGP keys match those in the partner profiles and in the emails actually exchanged. If this is not the case somewhere, then the procedure for the affected communication relationship will not or not completely work.

6.1.1 Generate secret key

A secret key must be generated for each own identity, i.e. for each own email address that you want to use with PGP. If you click on the button labeled accordingly, a dialog for entering the key details is displayed.

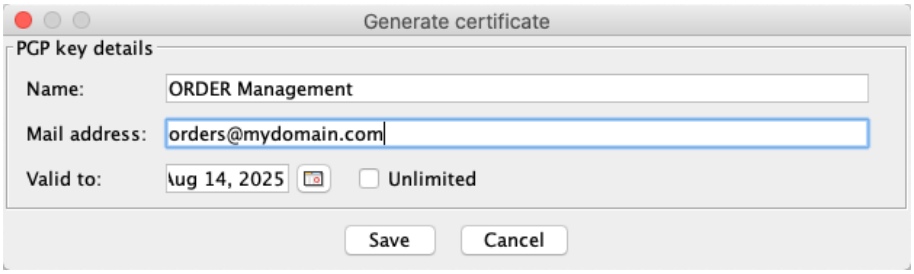

Figure 6.1. Enter PGP key details

You enter a freely selectable name for the key and the respective own e-mail address. Below this, you have the option of limiting the validity period for the new key. The software suggests a validity period of five years here. You can change this at will or you can activate “unlimited” if you want the key to never become invalid.

If you click on “Save”, another message is displayed, which you confirm with “OK”. The new key is then generated. This process may take some time. As soon as the generation of the new key is completed, the input dialog disappears and the new entry is displayed in the list.

[14] Pretty Good Privacy - s. http://www.ietf.org/rfc/rfc4880.txt

[15] It should be mentioned here that the implementation in e-AS2 SMTP is based on “PGP/MIME”. So “fully” means that all PGP features that are possible with PGP/MIME mails are supported. Some mail clients with a PGP plugin also offer proprietary PGP-based encoding. This is not supported in e-AS2 SMTP.

Your email partners need the public part belonging to the new key in order to encrypt emails to you. Export the public key and transfer it to all communication partners who are to send you encrypted emails.

Mails that you send to your email partners can be signed with the new key. Again, your partners need the public part of the key to verify your signatures.

6.1.2 Import public key

After clicking this button a file open dialog opens. You select a file that contains a PGP key. Everything else happens automatically. The identity associated with the PGP public key, i.e. the email address, is stored in the file and will be imported unchanged. The same applies to any expiry date that may have been set. After the import, a new entry is displayed in the list.

You can now encrypt e-mails that you want to send to this address with this public key. If your communication partner sends you signed e-mails, this key is automatically used for signature verification.

6.1.3 Export public key

The public part can be exported for each key in the management. You click on the corresponding button and specify the storage location and file name in the dialog that opens. The exported file is compatible with other PGP solutions and can be imported there. In addition to the cryptographic core properties, the User ID and the period of validity are a fixed component of the exported key.

6.1.4 Delete key

Keys that are no longer needed can be removed using this button.

6.2 Partner Configuration

When you create a new partner profile, decide whether you want to create a profile for AS2 or for email. In the case of email, you have the two options S/MIME and PGP to choose from.

Figure 6.2. Choosing PGP for cryptography

Select “SMTP (PGP)” to create a profile for email with PGP cryptography. As long as the cryptographic functions remain disabled, such a profile is equivalent to a profile for S/MIME. As soon as the cryptography is switched on, the internal algorithms run on the basis of PGP.

For PGP profiles you can switch on signature and encryption independently of each other. If encryption is switched on – and only then – compression can also be switched on.

Please note that in contrast to S/MIME there is no fixed assignment of keys to partner profiles in the case of PGP. The PGP keys for processing are selected exclusively on the basis of the email addresses anchored as user ID in the keys.