BusinessMail X.400 - AS2-Gateway

For years X.400 has been the preferred protocol for reliably transmitting EDI data. The deciding factors for this include standardized reports and tracing every mail. Using X.400 client software it is possible to establish automated communication directly between customer applications. Companies with especially high security requirements trust the closed system BusinessMail X.400 to exchange business correspondence.

What is AS2?

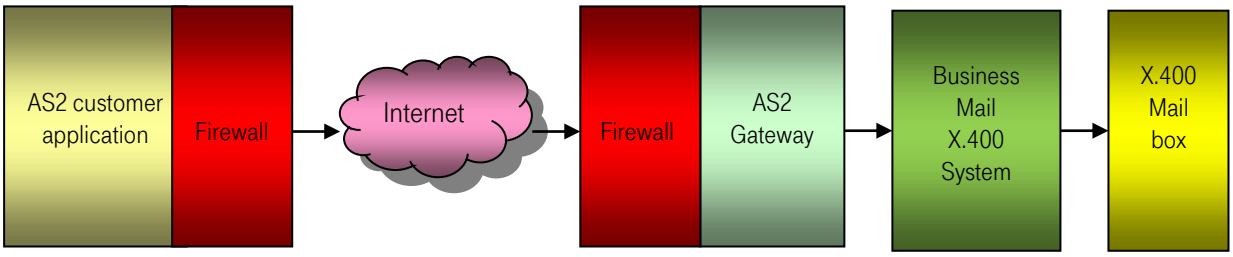
AS2 (Applicability Statement 2) is the EDI data exchange based on secured permanent Internet access. Security is ensured by digital signatures and encryption. The data content is neither checked nor validated meaning that AS2 can transmit all types of document. The partners themselves manage the connections as point-to-point connections without needing to involve a VAN service provider.

Apart from a permanent Internet connection, partners only require AS2 software with the appropriate number of licenses. The Drummond Group offers the possibility to certify the software and to guarantee interoperability between different software manufacturers, but a certificate is not requirement while using the AS2 Gateway of BusinessMail X.400.

BusinessMail X.400 AS2 Gateway

Exchanging data between X.400 and AS2 partners can only be performed via a gateway solution which connects both technologies. Telekom Deutschland provides a suitable link with BusinessMail X.400 AS2 Gateway. BusinessMail X.400 AS2 Gateway enables AS2 applications to exchange (EDI) data with X.400 partners within and outside the BusinessMail X.400 system. BusinessMail X.400 AS2 Gateway is a fully fledged AS2 solution certified by the Drummond Group (April 1, 2006). The gateway transforms data into a X.400 message and creates MDN (message disposition notification) based on the X.400 conform delivery and receipt notifications. In this way, there is a continuous reporting from the AS2 partner to the X.400 mailbox and vice versa. This means that X.400 delivery and receipt notifications are converted into MDN (message disposition notification) (and vice versa). The AS2 Gateway will handle all transaction in a database relation called Trace-Tab. A process called Purger will delete the entries in Trace-Tab based on their “life time”. This “life time” (Purge time) is a parameter in properties of AS2 account and the default value is 240 hours (10 days). If there is an entry in Trace-Tab it is possible to request information about a transaction using Status reports.

Technical information



- Message formats supported by X.400:
  P2 (84 standard), P22 (88/92 standard), P35 (PEDI, only for partners outside the BusinessMail X.400 mailbox service and in conjunction with central EDI function)
- Supported MIME formats:
  The AS2 Gateway supports different MIME formats (text/plain, application/EDIFACT, application/EDI X12, application/EDI consent, application/octet string) and depending on the profile of the partner input equivalent converts it to a corresponding X.400 body part or independently of the delivered MIME document converts it to a prescribed type of body part (ASCII, Isolatin1, BP14). The body parts of X.400 messages are converted into an equivalent MIME format (e.g. Isolatin1 in text/plain, Charset Isolatin1). The gateway also supports multipart/mixed with up to 50 body parts. With

enabled End-to-End security the S/MIME content of the AS2 message will be mapped into a single BP15/ FTAM body part in the X.400 message.

- Maximum message size: 100 MByte

Encryption and certificates

- For the AS2 user the BusinessMail X.400 AS2-Gateway is a solution that is conform to AS2 application standards (RFC4130). It offers an option to encrypt either the content of messages and/or the http connection. Depending on the configured AS2/X.400 relation the AS2 gateway will decrypted an encrypted AS2 message and remove after successful validation the signature so that the X.400 partner will be able to directly process the user data in the X.400 message. If the End-to-End security has been enabled for this relation the gateway will send the secured content of the AS2 message (S/MIME) within a single BP15/ FTAM body part (CMS object) in the X.400 message and the X.400 partner needs adequate tools to process this S/MIME content. In such a case the encryption of the AS2 message must be done using the individual certificate of the X.400 partner and not the general certificate of AS2 gateway (service).
- When sending AS2 messages there is an option within the AS2/X.400 relation database entry whether to encrypt them and to define the algorithm that should be used (3DES, AES*256-CBC*). The exception regarding End-to-End security is described above.
- In the AS2/X.400 relation database entry there are also options that define whether a AS2 messages will be signed and which algorithm (SHA1, SHA2, SHA3 ...) should be used or whether a signed MDN should be requested (including the algorithm). Messages from X.400 partners to the AS2 partner by default will be signed using the general certificate of the AS2 gateway (service). If the End-to-End security has been enabled in the AS2/X.400 relation the AS2 gateway will unchanged map the secured content (signed and/or encrypted) of the X.400 message (FTAM Body part with CMS object) into the S/MIME content of the AS2 message. If this content is unsecured or signed only and the AS2 message must be encrypted the AS2 gateway will perform this encryption.
- If the customer must replace the certificate/key of his AS2 application he may use his WebConfig account (see also Management of AS2 Gateway later in this document) to upload the certificate manually at same time (replace existing) or configure there an automatically exchange of this certificate (Day, Time, Locking period). If the customer's AS2 application supports this feature, he may use the CEM (Certificate Exchange Messaging) to send the new certificate.

Exchanging data AS2 partner → BusinessMail X.400

- The AS2 partner becomes a BusinessMail X.400 customer and establishes traffic flows from his AS2 solution to BusinessMail X.400 AS2 Gateway. Or the X.400 partner place an order to establish the AS2 connection and pays for it.
- The AS2 partner states the AS2 ID with which he would like to reach the respective X.400 partner. To facilitate identification, by default the AS2 ID specified is extended to include the X.400 user ID (4-5 numbers). Based on this AS2 ID and the individual ID of the AS2 partner, the data is entered into and connected to the AS2 partner database at BusinessMail X.400.
  Alternative addressing procedure for sending EDIFACT documents via the central EDI function:
  If the X.400 mailboxes concerned are entered in the EDI trading partner database, the address in UNB of the EDIFACT document can be used for X.400 addressing. In this case, it suffices to address all transactions to the agreed AS2 ID of the central EDI functionality.
- The AS2 partner will sign all sent AS2 messages using the certificate stored in the database of BusinessMail X.400.
- Upon request, the AS2 partner receives a standard confirmation as specified in his AS2 message which is generated and transmitted asynchronously by the AS2 gateway from the X.400 delivery or receipt notifications. He can choose from the following options:
  0 → immediately after receipt of AS2 message
  1 → after submission of X.400 message (providing X.400 P1 Message ID → MPDUID in MDN)
  2 → the MDN is generated from the X.400 delivery/non-delivery notification (DN/NDN)
  3 → the MDN is generated from the X.400 receipt/non-receipt notification (RN/NRN)
  Please consider only to request RN if the X.400 partner is able to send RN in time. If the Purger will delete the entry of this transaction in the relation Trace_Tab (Properties: Purgetime: Default = 240 hours) a delayed RN will not result the submission of an asynchronous MDN!

- The subject transmitted in the AS2 message is mapped by the AS2 gateway in the subject of the X.400 message.
- For each trading partnership it can be established how the document packed in MIME is mapped by the gateway in the X.400 message:
  * Using the "ASCII" setting, the document is always sent as text body irrespective of the type of MIME (character set IA5 IRV ->7 Bit) (IPM84 or IPM88)
  * Using the "Isolatin 1" setting, the document is always sent as text body irrespective of the type of MIME (BP 15, General Text, Iso8859-1) (IPM84 or IPM88)
  * Using the "BP14" setting, the document is always sent as binary body irrespective of the type of MIME (BP 14, no file information) (IPM84 or IPM88)
  * Using the "variable" setting, the type of MIME is shown in the X.400 body part:

Text/plain	In BP15/ General text ISO8859-1 (IPM88) or IA5 (IPM84)
Application/EDIFACT	In BP15/ General text ISO8859-1 (IPM88) or IA5 (IPM84)
Application/EDI X12	In BP15/ General text ISO8859-1 (IPM88) or IA5 (IPM84)
Application/EDI consent	In BP15/ General text ISO8859-1 (IPM88) or IA5 (IPM84)
Application/octet stream	In BP14 (IPM84 or IPM88)
Application/octet stream with filename in content disposition	In BP15/ FTAM body part (FTBP: binary body with file information) (IPM88)

The AS2 Gateway also supports multipart/mixed MIME content and for the mapping of the included MIME body parts into X.400 body parts the rules described above will be used. With enabled End-to-End security the whole S/MIME content of the AS2 message will be mapped unchanged (only in case of encrypted content the content-transfer-encoding "BASE64" will be converted into "Binary") into a single BP15/ FTAM body part in the X.400 message.

Exchanging data BusinessMail X.400 → AS2 partner

- The requirements for this kind of communication flow are:
  → The AS2 partner must have his AS2 solution connected to the BusinessMail X.400 AS2 Gateway
  → The BusinessMail X.400 partner is activated for communication with the AS2 partner
- To communicate with an AS2 partner who is connected to the BusinessMail X.400 AS2 Gateway, the X.400 partner sends message to the virtual X.400 address of his AS2 partner. The address is in the X.400 domain: C=DE, A= VIAT-AS2
- Delivery or receipt notifications requested with the message are generated from the following events:
  Delivery/non-delivery notification (DN/NDN) → Transfer of the X.400 message to the AS2 communication module of Gateway
  Receipt/non-receipt notification (RN/NRN) → Evaluation of the MDN
- The subject given in the X.400 message is mapped in the subject of the MIME header
- The gateway converts the document sent in the X.400 message to the following types of MIME:

* IA5 IRV or general text Iso8859-1	in text/plain
* *Exception: Content of the document is EDIFACT*	*application/EDIFACT*
* BP14	in application/octet stream
* BP14 with file name in CDIF body	in application/octet stream, content disposition: attachment; file name = " "
* FTBP	in application/octet stream, content disposition: attachment; file name = " "

The S/MIME content in a BP15/ FTAM body part of the X.400 message will be unchanged mapped for enabled End-to-End security into the content of the AS2 message. Only in case of encrypted content the content-transfer-encoding "Binary" will be converted based on the relation parameter "Encode binary data" into "BASE64" or not.

Management of AS2 Gateway

- To manage the trading relations and the communication properties the AS2 user may use a Web based Management tool called WebConfig (https://webconfig.viat.de/webconfig in conjunction with client certificate).
- In WebConfig the AS2 user may configure how long the gateway will try to deliver messages and MDN to user's AS2 application and how to handle the problem that user's AS2 application will not send requested asynchronous MDN in time. If transaction timed out the status of entries will be set to failed and the data of AS2 messages will be stored in Overflow

directory. Via WebConfig the user has the possibility to access Overflow and to download the pay load of stored messages, to delete or to enable the AS2 delivery another time.

- Information about status of transaction will be available via WebConfig (view or download Status reports in CSV file) or send via AS2 to user's AS2 application.

If user's AS2 application has a problem/downtime is it possible to temporary suppress the message delivery or to bypass the messages directly to Overflow and have access to pay load of such messages. As described above the user may enable the delivery of that messages/MDN via AS2 if required**. Please consider, that only those transactions will be available in Overflow and in Status report that have an entry in Trace_Tab (check Purge time).**

Business / price model

AS2 partner

- A monthly flat rate is charged for communication with X.400 customers inside and outside the BusinessMail X.400 system. This includes a free monthly volume and conversion costs.
- The cost of this package is agreed individually and depends on the free volume agreed and the accessible destination X.400 systems (domestic and international).
- When the agreed quota is exceeded, a supplementary charge is levied for each extra megabyte.
- The charges for connection to the BusinessMail X.400 system or change in trading partner are calculated on a costs and material basis and currently amount to € 25 per quarter of an hour or part thereof (plus value added tax).
- Individual offers can be requested from BusinessMail X.400 product management.

BusinessMail X.400 partner

- Connection and volume packages are charged in accordance with current price lists for addressing virtual X.400 mail boxes of AS2 partners (C=de; A=VIAT-AS2).

Advantages and disadvantages for the customer

Advantages of the AS2:

- AS2 transmits EDI data quickly and directly without being connected to a X.400 VAN mailbox.
- No VAN charges (value added network)
- No time is lost storing data temporarily
- No polling necessary

Disadvantages of the AS2:

- Certified AS2 software is required on both sides of an AS2 flow and the cost of the licenses often depends on the number of partners involved.
- Connecting communication flow and maintaining certificates is carried out separately for each partner and is therefore very time consuming where there are multiple connections.
- Maintaining and operating AS2 connections requires more know-how and more staff.
- Increased operating costs e.g. for faults; direct contact is required with several partners
- The application must run 24 hours a day
- A constant Internet connection with a fixed IP address is required with high levels of security.
- For small volumes of data, the costs for software and certificates are greater than the costs for BusinessMail X.400

Advantages of using the BusinessMail X.400 Gateway
... for the AS2 partner

- All BusinessMail X.400 customers and X.400 connections worldwide can be reached over the existing AS2 infrastructure.

- By using the central EDI function only one AS2 partnership (→BusinessMail X.400 AS2 Gateway) needs to be set up and maintained.
- AS2 standard MDN (message disposition notification) also available for exchanging data with X.400 partners.

... for BusinessMail X.400 partners

- AS2 partners can be reached without having to invest more in the own infrastructure.
- X.400 conform delivery and receipt notifications can also be generated for data exchange to AS2 partners.

Forms / orders:

- Order sheet AS2

Note: Before ordering a connection to the AS2 Gateway, please obtain an individual package proposal from product management.

Contact:

Hotline: +49 800 5 229230 → reference AS2 Gateway,
E-mail: helpdesk.businessmailx400@telekom.de