Supplier's Guide for SP14 of SAP ERP Connectivity with Ariba Network
Ariba Network Integration 1.0 for SAP Business Suite
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1 Overview of Ariba Network Integration 1.0 for SAP Business Suite

1.1 Introduction

Ariba Network Integration 1.0 for SAP Business Suite contains non-modifying add-ons for SAP Business Suite systems. It is required if you want to connect SAP Business Suite systems to the Ariba Network. Ariba Network Integration 1.0 for SAP Business Suite enables your SAP system to send and receive messages in a format supported by Ariba, that is, cXML.

This guide describes the Ariba Network integration of SAP ERP for suppliers (vendors / sellers), using an add-on that enables your SAP ERP system for vendor collaboration on the Ariba Network. For the integration of buyers, a similar guide is available. You can find the guide along with the supplier’s guide on SAP Help Portal at http://help.sap.com/se4aribanet10.

Note

If you require further help beyond this guide regarding setup, implementation, or customization of the Ariba Network Integration add-on for SAP ERP, turn to your local SAP contact for support.

Please refrain from consulting SAP Ariba Seller Integrators in terms of setup support. They are responsible for coordinating seller integration on SAP Ariba Network with buyers and sellers and provide assistance regarding electronic data exchange formats (cXML, EDI, etc.), testing, and troubleshooting.

SAP Ariba Seller Integrators are not in charge of setting up the supplier’s IT system (including the Ariba Network Integration add-on for SAP ERP) to integrate the respective input message from Ariba Network. This is ownership of the supplier.

The add-on supports the integration of a single SAP Business Suite system or of several SAP Business Suite systems with the Ariba Network. The systems can be integrated directly or using a middleware. For detailed information, see the SAP Community Network at http://scn.sap.com/docs/DOC-51873, System Landscape Recommendations for Ariba Network Integration 1.0 for SAP Business Suite.
The following figure shows the system landscape for connecting a SAP Business Suite system to the Ariba Network:

![System Landscape Diagram](image)

**Figure 1: System Landscape for Ariba Network Integration 1.0 for SAP Business Suite**

### 1.2 Prerequisites

#### SAP ERP Systems

Ariba Network Integration 1.0 for SAP Business Suite is available for the following releases and minimum support package levels of SAP ERP Systems:

- SAP ERP 6.0 SPS15 (SAP APPL 6.00 SP15 and SAP BASIS 7.00 SP18)
- EHP2 for SAP ERP 6.0 SPS06 (SAP APPL 6.02 SP06 and SAP BASIS 7.00 SP18)
- EHP3 for SAP ERP 6.0 SPS05 (SAP APPL 6.03 SP05 and SAP BASIS 7.00 SP18)
- EHP4 for SAP ERP 6.0 SPS05 (SAP APPL 6.04 SP05 and SAP BASIS 7.01 SP05)
- EHP5 for SAP ERP 6.0 SPS03 (SAP APPL 6.05 SP03 and SAP BASIS 7.02 SP02)
- EHP6 for SAP ERP 6.0 SPS01 (SAP APPL 6.06 SP01 and SAP BASIS 7.31 SP01)
- EHP6 for SAP ERP 6.0 on HANA SPS01 (SAP APPL 6.16 SP01 and SAP BASIS 7.40 SP01)
- EHP7 for SAP ERP 6.0 SPS01 (SAP APPL 6.17 SP01 and SAP BASIS 7.40 SP03)
- EHP8 for SAP ERP 6.0 SPS01 (SAP APPL 6.18 SP01 and SAP BASIS 7.50 SP01)

#### Process Integration (Optional)

For mediated connectivity, the Ariba Network Adapter for SAP NetWeaver is required. For information about which version is relevant for the functions you want to use, see SAP Note 1991088.
1.3  Software Requirements for Ariba Network Integration

General instructions for the installation of add-ons can be found in SAP Note 1841471.

The installation information for Ariba Integration for SAP Business Suite is available in SAP Notes 1915255, 1991087, 1991088, and 1991537.

Note

SP14 and SP15 of the add-on enabling SAP ERP Connectivity with Ariba Network are the only versions that are currently in maintenance.

Ariba Network Integration 1.0 for SAP Business Suite consists of 3 components. Download these components and install them on your SAP ERP system. The components are:

- **ARBFNDI1**
- **ARBERPI1**
- **ARBFNDI2**

  This component is only required if your SAP ERP system is on EhP4 or higher.

Also download all Attribute Change Packages (ACPs) for this product.

Note

Only cXML elements listed in the mapping documentation are supported. This documentation is available as attachments to SAP Note 1918732.

1.4  Supported Ariba Network Processes

Ariba Network Integration for SAP ERP SD (Sell Side)

A SAP vendor (seller) who has an account and interacts with buyers on the Ariba network now has a standard seller-side ERP Sales and Distribution (SD) integration with the help of this add-on component. The underlying Ariba foundation layer meets the basic integration requirements while the ERP SD system provides application-specific and process-specific integration.

Processes involving the following documents are supported by the add-on component:

- **Sales Orders**
  Create, change, or cancel sales orders.
- **Order Confirmation**
  Create order confirmation and transmit to the Ariba Network.
- **Outbound Deliveries**
  Create outbound deliveries and transmit to the Ariba Network.
- **Billing Documents**
  Create billing documents and transmit to the Ariba Network.
Integration of SAP ERP with Ariba Collaborative Commerce

**OrderRequest (Inbound)**

This cXML message enables the transfer of purchase orders (PO) created or updated from the Ariba Network to the SAP ERP SD vendor system. This results in the creation, update or cancellation of sales orders. The purchase order cXML may be triggered and sent by a SAP ERP buyer system. These purchase orders can be viewed in a vendor’s inbox in the Ariba Network.

Some application-specific configuration is necessary to enable the creation, update or cancellation of a sales order. These include:

- Identify the Ariba partner in the SAP ERP SD system
- Map the Ariba partner type descriptions to SAP ERP SD partner functions
- Maintain the sales area(s)
- Define sales order document types
- Maintain a block to enable creation of sales orders in case errors occur

For more information about configuration, see Customizing.

The supported order type on the Ariba network is ‘REGULAR’. This means that ‘REGULAR’ purchase orders from the cXML are consumed to create the sales order whereas the ‘BLANKET’ and ‘RELEASE’ types are not supported. Service items contained in the purchase order cXML are currently not supported either.
When a buyer chooses to update or cancel items in a purchase order, this translates as an update or cancellation of sales order items of the sales order in the vendor’s system. Therefore, the cXML on the Ariba Network comes with a specific request (to create, update or change) and the respective action is taken on the sales order.

Standard BAPIs (Business Application Programming Interfaces) are used for the create, update/change, and cancel processes. The cancellation of items is possible based on the status of the item. Hence, the business process integration behavior is close to the standard SAP ERP SD system behavior. The action (create, update or cancel) succeeds or fails based on the input and status of the sales order. This is similar to a standard sales order behavior.

**ConfirmationRequest (Outbound)**

An order confirmation created in the SAP ERP SD system is transferred to the Ariba network. A standard sales order that references a purchase order is supported. To enable automatic confirmation of the changes to a sales order, you must enable the Multiple Issuing option for the output type used for issuing the order confirmation output. You must also enter FM06AEND in the Program field, and CHANGE_FLAG in the FORM Routine field in the Change Output section to support multiple issuing.

A supplier can choose to Update or Cancel items in a sales order to trigger an update to the existing order confirmation. The updated or cancelled items will be transferred back to the purchase order in the buyers system with the corresponding ConfirmationRequest.

**ShipNoticeRequest (Outbound)**

An outbound delivery created in the SAP ERP SD system is transferred to the Ariba Network. For this, you have to configure the customer and the sales organization in the Customizing activity Define Message Output Control (using Application V2, Standard Output Type LD00, and cXML message type SHIP). For more information, see Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba Application Specific Settings SAP ERP Integration Component for Ariba Define Message Output Control.

Note that only outbound deliveries that reference a sales order are currently supported.

You can check the outbound delivery in your outbox on Ariba Network, under Ship Notices.

**InvoiceDetailRequest (Outbound)**

A billing document created in the SAP ERP SD system is transferred to the Ariba Network. For this, the vendor must configure the customer and sales organizations in the Customizing activity Define Message Output Control (using Application V3, Standard Output Type RD00 and cXML message type INVC). For more information, see Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba Application Specific Settings SAP ERP Integration Component for Ariba Define Message Output Control.

The tax code in the SAP ERP SD system must also be mapped to the tax category for the Ariba Network invoice and is configured per bill-to-party.

Supported billing documents are:

- Invoice
- Invoice cancellation
- Credit memo
- Credit memo cancellation
- Non-purchase order invoice or credit memo
Note

- Only billing documents that have been released to accounting are supported.
- Only order-related and delivery-related billing categories are supported.
- Only the standard item type is supported in the above billing documents.

You can create the billing document explicitly or use the batch job to send the billing document to the buyer on Ariba Network. It is also possible to check for the invoice in your outbox on the Ariba Network.

**PaymentRemittanceRequest (Inbound)**

This cXML message enables the you to receive payment advices from the customer via the Ariba Network.

As a prerequisite, you have to map the customer name together with the Ariba Network ID and customer role (as transmitted in the cXML message) to the name of the customer as it exists in the SAP ERP Sales and Distribution system. You do this in Customizing for SAP Business Suite Integration Component for Ariba under [SAP ERP Integration Component for Ariba > Integration for Vendors > Define Mapping Settings for Payment Advices > Map cXML Partner to SAP ERP SD Customer in Payment Advice](#).
2 Configuration Settings

This chapter describes the settings you have to make in your SAP ERP system for communication with Ariba Network. It also describes the Customizing details for Ariba Network Integration 1.0 for SAP Business Suite.

2.1 Prerequisites for Connecting SAP ERP to Ariba Network

The following prerequisites apply:

- You have signed up for an Ariba Network membership.
- You have received one or several IDs, known as Ariba Network IDs (ANID). You use either a password (shared secret) or a client certificate with each ANID. Each credential represents a unique entity on Ariba Network, that is, your appearance to the vendors on Ariba Network.
- Ariba has provided you with a list of your vendors who have already signed up to the network, so you can start collaboration immediately. To connect with the vendors on the network, get support from your Ariba contact.

**Note**

As company code and plant address data is transferred to Ariba Network, ensure the complete address data is maintained in the SAP ERP system.

2.1.1 Required Notes in SAP ERP

Depending on your SAP ERP release, the following SAP notes are required:

- **SAP Note** [1535132](#) is required for the application log. This SAP Note is relevant for the following releases:
  - SAP_BASIS release 7.0 lower than SP27
  - SAP_BASIS release 7.01 lower than SP11
  - SAP_BASIS release 7.02 lower than SP07
  - SAP_BASIS release 7.31 lower than SP02
- **SAP Note** [1669829](#) is required if you use client certificate as your authentication method. This SAP Note is relevant for the following releases:
  - SAP_BASIS release 7.0 lower than SP27
  - SAP_BASIS release 7.01 lower than SP12
  - SAP_BASIS release 7.02 lower than SP11
  - SAP_BASIS release 7.31 lower than SP03
- **SAP Notes** [1984803](#) and [1987211](#) are required for Forward Error Handling. They enable the navigation to the business object and to the application log.
These SAP Note are relevant for the following releases:

- SAP_ABA release 7.02 lower than SP1
- SAP_ABA release 7.30 lower than SP1
- SAP_ABA release 7.31 lower than SP12
- SAP_ABA release 7.40 lower than SP7

- First, SAP Note 2357871 and SAP Note 2358164 must be implemented. Note that SAP Note 2358164 is only relevant for the following releases:
  - SAP_APPL release 600
  - SAP_APPL release 601
  - SAP_APPL release 602
  - SAP_APPL release 603

- Subsequently SAP Note 2359902 must be implemented:

- SAP Note 1918732 provides a documentation of mapping between the SAP ERP application interfaces and Ariba cXML.
- SAP Note 2142748 contains answers to frequently asked questions (FAQ) and known issues and their solutions.

### 2.1.2 Establishing the Technical Connection to Ariba Network

As described in the introduction, you can connect your SAP ERP system(s) either directly or through SAP NetWeaver PI to the Ariba Network. A mixture is not recommended. This decision is a prerequisite for choosing the relevant customizing activities later.
The following figure shows an overall picture of the interfaces used for direct connectivity:

Sending Messages to/from Ariba Network
Direct Connectivity with Synchronous WS call

Figure 2: Technical Settings for Direct Connectivity
The following figure shows the technical settings of this connection:

Sending Messages to/from Ariba Network Mediated Connectivity

Even though it is not technically required, we recommend that you establish a SM59 connection to the Ariba Network so that you can ping the network and check its technical availability.
The following figure shows the logon and security details of this connection:

![Logon and Security Settings for Direct Connectivity](image)

**Figure 4: Logon and Security Settings for Direct Connectivity**

**Note**

For HTTPS SSL encryption, you must first obtain the server certificate from the Ariba Network and then import it into the SAP ERP system using the Trust Manager (transaction `STRUST`). For more information about security, see chapter Security [page 22].

For HTTPS communication, the HTTPS service must be active in your SAP ERP system. To display active services, on the `ICM Monitor` screen (transaction `SMICM`), double-click the `Services` button in the menu bar.
2.2 Framework Customizing for Connecting SAP Business Suite to Ariba Network

To connect SAP Business Suite systems to Ariba Network, choose Integration with Other SAP Components SAP Business Suite Integration Component for Ariba Framework Settings, and make settings in the following Customizing activities:

**General**

- **Define Credentials and End Points for Ariba Network:**
  - Enter your Ariba credentials, that is, ANID(s) and the corresponding password(s).
  - Leave the Shared Secret blank if you authenticate with client certificate on Ariba Network.
  - If you have not yet switched your system to productive use, select the Test Account checkbox.
  - Select one of the following options for Enable End Points
    - **End points not enabled**
      Use this option if the endpoints are not activated on Ariba Network.
    - **Enable end points for authentication**
      Use this option if you use endpoints only for authentication.
    - **Enable end points for authentication and polling**
      Use this option if you use endpoints for authentication and polling.

If you have decided to configure endpoints on Ariba Network, the credentials must only be specified on the subscreen End Points for Ariba Network. Proceed as follows:

- **SAP-Internal Key**
  This is an SAP-internal name for the endpoint; it must be unique in your SAP Business Suite system.
  This key value is used later in the Customizing activity Define Settings for Polling Agent for using endpoints in polling.

- **Ariba End Point ID**
  This is the endpoint name defined on Ariba Network for your SAP system.

- **Enter Shared Secret**
  Provide your shared secret value if you use a password for the communication between the SAP system and Ariba Network.

For more information about endpoints, see the Appendix.

**Direct Connectivity**

- **Define Basic Message Settings**
  Specify which Ariba cXML message types you intend to send and receive, and fill the corresponding Object Type, Message Type, Direction, Mapping Version and cXML version fields.
As of SP04, cXML version 1.2.025 is supported. The mapping version V002 supports new functions: It includes additional mappings for the cXML message types OrderRequest and InvoiceDetailRequest.

The indicator **Send cXML StatusUpdateRequest Message** is only valid for **inbound** cXML messages; it informs Ariba Network about successful or erroneous processing of your messages in the backend. Note that the error status is restricted to SAP Business Suite systems based on **SAP_BS_FND 701** and higher that support active Forward Error Handling (FEH).

Based on your system architecture and connectivity decision, make settings in Customizing for either direct connectivity or mediated connectivity.

For direct connectivity, choose **Integration with Other SAP Components** ➤ **SAP Business Suite Integration Component for Ariba** ➤ **Framework Settings** ➤ **Direct Connectivity Settings** and make settings in the following Customizing activities:

○ **Manage and Test Enterprise Services**

The Web services used for communication with Ariba Network (AN) have to be configured in the SOA Manager. A detailed configuration guide can be found in the chapter.

**Note**

After the SOA configuration steps you have to execute the technical configuration of Simple Object Access Protocol (SOAP) runtime (transaction **SRT_TOOLS**). For more information, search for the keyword **Configuring the Web Service Runtime** in the documentation of SAP NetWeaver under [http://help.sap.com](http://help.sap.com) and SAP Note **1043195**.

**• Maintain Certificate**

As the connection is established through HTTPS, a certificate for authentication is required. For more information, see chapter **SAP Business Suite System Acting as a Client** [page 22].

**• Define Settings for Polling Agent**

A polling mechanism is used for retrieving messages. For each Ariba Network ID you can specify which message types are expected to be received from the network. If you use endpoints in polling, specify the SAP-internal key value of the endpoint ID. You can also define the maximum number of messages that can be retrieved within one call to the network (no more than 100 messages is recommended). All pending messages are retrieved, but if they exceed the defined maximum, additional calls are performed. The logical port name has to match the one you have defined in the SOA Manager in the chapter.

**• Define bgRFC Supervisor Destination**

You define a supervisor destination for the background RFC (bgRFC) in this Customizing activity. For more information, see Customizing for **Integration with Other SAP Components** under **SAP Business Suite Integration Component for Ariba** ➤ **Framework Settings** ➤ **Direct Connectivity Settings** ➤ **Define bgRFC Supervisor Destination**.

You can also implement the BAdI **Notification About Communication Errors** ( ARBFND_INTEGRATION) to trigger actions in situations where errors occur during the communication between your SAP ERP system and Ariba Network. This BAdI is called if a cXML message cannot be transferred to Ariba Network (outbound direction), or a cXML message is received but cannot be processed (inbound direction). For more information, see Customizing for **Integration with Other SAP Components** under **SAP Business Suite Integration Component for Ariba** ➤ **Framework Settings** ➤ **Business Add-Ins (BAdIs)** ➤ **BAdI: Notification About Communication Errors**.
Mediated Connectivity

For mediated connectivity, make settings in Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba Framework Settings Mediated Connectivity Settings Integration Engine Administration.

Your SAP NetWeaver PI system must be set up and connected to all relevant SAP ERP systems. The Integration Engine configuration should already contain global configuration data. If this is not the case, check the set-up guides for your SAP NetWeaver PI system.

You can also implement the BAdI Notification About Communication Errors (ARBFND_INTEGRATION). This BAdI is called if a cXML message cannot be created (outbound direction), or if a cXML message is received from SAP NetWeaver PI but cannot be processed (inbound direction). Note that if the message cannot be transferred to SAP NetWeaver PI, the BAdI is not triggered. For more information, see Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba Framework Settings Business Add-Ins (BAdIs) BAdI: Notification About Communication Errors.

Direct and Mediated Connectivity

For both direct and mediated connectivity, the Notification About Communication Errors (ARBFND_INTEGRATION) BAdI is only called when there are errors in cXML message communication between your SAP ERP system and Ariba network. In this BAdI, you can implement the actions (for example, an email notification) that you want to trigger if errors occur. A sample implementation is available. For more information, see Customizing for SAP Business Suite Integration Component for Ariba under Framework Settings Business Add-Ins (BAdIs) BAdI: Notification About Communication Errors.

2.3 SAP ERP-Specific Customizing for Connecting SAP Business Suite to Ariba Network

In Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba Application Specific Settings SAP ERP Integration Component for Ariba, make settings in the following customizing activities:

- Assign Ariba Network ID to Company Code
  Assign your ANID(s) to the respective company codes that you want to be connected to AN. It is possible to make further refinements. For example, you can assign several ANIDs within one company code and one to each purchasing organization. In this case, you must specify which ANID must be used and for which purpose by implementing the BAdI method ASSIGN_SENDER_ANID method in the BAdI: Outbound Mapping (ARBERP_OUTBOUND_MAPPING).

- Activate Business Transaction Events to Trigger Messages
  This activates a set of Business Transaction Events (BTEs) which currently collect changes made to an invoice document. As changes are recorded, the InvoiceStatusUpdate cXML message is sent to the Ariba Network. To activate the BTEs, select the Active checkbox for the application indicator ARBERP.
- **Define Message Output Control**
  This allows you to define output conditions, fine-tune the output control, and map the billing document output type in SAP ERP to a cXML message type for Ariba Network. For more information, see Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba Application Specific Settings SAP ERP Integration Component for Ariba Define Message Output Control.

- **Define Document Specific Message Customizing**
  This allows you to decide on attachment transfers from Generic Object Services (GOS) or storage to GOS. Also, for incoming messages, you have the option of attaching the original cXML message to the created object.

- **Map Texts of SAP ERP and Ariba Network**
  It is possible to send texts from SAP ERP using outbound cXML messages and receive texts in SAP ERP using inbound cXML messages. To enable this, you make settings to map cXML text elements to SAP ERP text objects and text IDs. Use the customizing activities Define Text Mapping for Outbound Messages and Define Text Mapping for Inbound Messages.

If cXML comment types are used, they can be defined in SAP ERP and used in the text mapping for outbound and inbound messages. You can define different mappings for different comment types. To map texts independent of comment types, an asterisk (*) is entered as a wildcard in the SAP ERP-Internal ID of cXML Comment Type column in the activity Define cXML Comment Types for Text Mapping.

**Customizing Settings for the Integration for Vendors**

Specific settings can also be made in the following:

**Define Mapping Settings for Sales Orders and Order Confirmation**

- **Map cXML Partner to SAP ERP SD Customer**
  This allows you to map the name of a partner in the cXML to a SAP Sales and Distribution (SD) partner based on the partner function and Ariba Network ID.

- **Map cXML Order Type to SAP ERP SD Document Settings**
  This allows you to map Ariba order types to SAP ERP SD order types for a customer. When an error occurs during the creation of a sales order from the cXML, it applies a block which is specified in the “Applicable Delivery Block” column.

- **Maintain Sales Area for SAP ERP SD Customer**
  This allows you to map a customer to a sales area for the creation of a sales order in your SAP ERP SD system.

**Define Mapping Settings for Payment Advices**

- **Map cXML Partner to SAP ERP SD Customer in Payment Advice**
  Map the name of a customer (as transmitted in the cXML message) together with the Ariba Network ID and the customer role in the cXML message to the customer in the SAP ERP Sales and Distribution system.

**Define Mapping Settings for Outbound Deliveries**

- **Assign Shipping Point to Ariba Network ID**
  Map the relevant shipping points that exist in the SAP ERP Sales and Distribution system to an Ariba Network ID.

**Define Mapping Settings for Billing Documents**
• **Maintain Ariba Network ID for SAP ERP SD Customer**
  This allows you to maintain the Ariba Network ID for the Sales and Distribution customer. Additionally, you can define a default bill-to address ID, which is used to route invoices without order reference (Ariba Network non-PO invoices) by the customer.

• **Map SAP ERP SD Tax Code to cXML Tax Category**
  This allows you to map the tax code in your SAP ERP SD system to the tax category for the Ariba Network invoice.

### Business Add-Ins (BAdIs)

You can also implement the following BAdIs by choosing [Integration with Other SAP Components](Integration with Other SAP Components) > [SAP Business Suite Integration Component for Ariba](SAP Business Suite Integration Component for Ariba) > [Application Specific Settings](Application Specific Settings) > [SAP ERP Integration Component for Ariba](SAP ERP Integration Component for Ariba) > [Business Add-Ins (BAdIs)]:

• **BAdI: Outbound Mapping**
  For example, you can do the following:
  ○ You can substitute the logic for all outgoing cXML messages by implementing the `DEFINE_CUST_SPEC_MAPPING` method. The cXML message has not yet been created at this time, and you can decide to build the cXML message yourself. At any time in the BAdI, you can decide to go back to the standard implementation by setting the `CV_PROCEED_WITH_APPL_PROC` indicator.

  For `InvoiceDetailRequest` cXML messages the standard mapping can be enriched, filtered and exchanged by implementing the `MAP_VBRK_TO_INVC_OUT` method. For further BAdl methods, see Customizing.

• **BAdI: Inbound Mapping**
  For all incoming messages, pre-mapping and post-mapping methods are available. The pre-mapping methods are meant to enrich, filter, and exchange the data passed to the application interface, while the post-mapping ones make it possible to enrich the already created business documents.

  The processing of incoming cXML messages can be generically substituted by implementing the `DEFINE_CUST_SPEC_PROCESSING` method. At any time in the BAdI, you can decide to go back to the standard implementation by setting the `CV_PROCEED_WITH_APPL_PROC` indicator.

#### 2.4 Jobs to Be Scheduled

The following report is available and needs to be scheduled as a regular job:

• **Fetch cXML messages for different message types from the Ariba Network** (`ARBFND_FETCH_CXML_MESSAGES_NEW`)
  This report polls pending messages from the Ariba Network and is only relevant for direct connectivity. It has to be scheduled as a variant in which you select all cXML messages types that you want to receive and process in your SAP ERP system.

For more information about the above described report, see the report documentation available in the system.

• **Cleanup serialization tables for Ariba integration** (`ARBERP_CLEANUP_DB_TABLES`)
The basic message header data (for example, payload ID, timestamp) of all cXML messages to and from the Ariba Network are stored in database tables in order to guarantee serialization and duplication checks. Schedule this report to archive these entries when they are no longer needed to keep the database tables to a reasonable size.

Note
We recommend that you do not schedule this job too often.

If the connection to the Ariba Network is not working for a certain period and many cXML messages in SAP ERP cannot be transmitted, a mass restart of messages that have errors is helpful. Once the connection is working again, you can run the report and start a mass re-sending of messages with errors.

Depending on your connectivity options, run the following reports to re-send mass messages with errors:

- **Restart Messages with Errors** (*RSXMB_RESTART_MESSAGES*)
  This report is intended for **mediated connectivity** using SAP NetWeaver PI. It searches for failed messages (messages that could not be processed correctly) or missing messages (messages that have been deleted from the queue manually) and tries to restart sending these messages automatically. The maximum number of restart attempts and the interval between these attempts is set with the queued remote function call (qRFC) scheduler. For more information, search for the phrase **Periodical Tasks** in the documentation for SAP NetWeaver available at http://help.sap.com.

- **Restart Failed Outbound Messages** (*ARBFND_MASS_MESSAGE_RESTART*)
  This report is intended for **direct connectivity**. It searches for failed messages (messages that could not be processed correctly) and tries to restart sending these messages automatically.

Note
- Do not schedule this report but execute it on demand.

- **Send Status Update for Canceled Inbound Messages to Ariba Network** (*ARBFND_SEND_STATUS_CANCELLED*)
  Inbound cXML messages that cannot be processed in SAP ERP can be canceled manually in the XML monitor (transaction *sxmb_moni*). This report selects such messages and transfers the “Failed” status to the Ariba Network. (Prerequisite: You have made the corresponding settings in Customizing for SAP Business Suite Integration Component for Ariba under | Framework Settings | Define Basic Message Settings |).

Note
- This report is relevant if you do not use Forward Error Handling (FEH).
- Do not schedule this report but execute it on demand.
For **direct** connectivity, the SAP Business Suite system always opens the connection by executing the following actions:

- The SAP Business Suite system pushes cXML messages to Ariba Network (synchronous)
- The Polling Agent of Ariba Network Integration 1.0 for SAP Business Suite fetches pending messages from Ariba Network (synchronous)

For **mediated** connectivity, the SAP Business Suite system connects through SAP NetWeaver PI. The connection functions as follows:

- The SAP Business Suite system pushes cXML messages to SAP NetWeaver PI (asynchronous)
- The Ariba PI adapter triggers its Polling Agent to fetch pending cXML messages from Ariba Network. The Polling Agent in the PI adapter then pushes the cXML messages to the SAP Business Suite system (asynchronous).

In both use cases, only the on-premise component opens the connection to the Cloud, thus supporting the highest level of security. A proxy or reverse proxy in the demilitarized zone (DMZ) is not required.

The SAP Business Suite system communicates with Ariba Network through the HTTPS protocol, encrypting transmitted data.

If Ariba Network Integration 1.0 for SAP Business Suite communicates with Ariba Network through SAP NetWeaver PI, there are no special security requirements.

Ariba provides information on how to communicate with Ariba Network in the *Ariba Network Adapter for SAP NetWeaver Setup Guide*. You can contact Ariba for more information.

As the security topics for mediated connectivity through SAP NetWeaver PI are covered by the *Ariba Network Adapter for SAP NetWeaver Setup Guide*, the next chapter focuses on direct connectivity.

**Note**

Advanced Security Configuration is available for the Ariba Network and will be the default setting as of September 30, 2016. To ensure that your Business Suite system can continue to communicate with the Ariba Network, check whether your SAP AS ABAP kernel release patch level is up-to-date. For more information, see SAP Note [2335891](https://support.sap.com/knowledgearticle/2335891).

### 3.1 SAP Business Suite System Acting as a Client

When sending a cXML message to the Ariba Network, the sender must authenticate itself. Ariba Network offers different authentication methods (authentication with client certificate or shared secret password) that are also supported by Ariba Network Integration 1.0 for SAP Business Suite.

For more information about the authentication methods on the Ariba Network, contact Ariba.
Authentication with Client Certificate

For authentication with client certificate it is strongly recommended that you use the latest version of the SAP Cryptographic Library (SAPCRYPTOLIB). For more information about latest SAP Cryptographic Library versions, bugs, and fixes see SAP Note 455033. Proceed as follows:

1. Get the client certificate from a Certification Authority (CA) that is trusted by Ariba.
2. Import the private key of the certificate into the SAP Business Site system by using Trust Manager (transaction STRUST).

First, create a new Client Identity in Trust Manager. Choose Environment > SSL Client Identities > enter ARIBA as the identity name and Ariba Network Client as the description. Save your entries.

Second, import the private key of the certificate in Trust Manager. Proceed as follows:

1. Select the created ARIBA SSL Client ID and choose PSE > Import to import the PSE file.
2. Enter the password for the certificate if required.
3. Save your PSE file by choosing PSE > Save as > SSL Client and enter ARIBA as the SSL Client.
4. Navigate to the Own Certificate group box on the Trust Manager screen, and double-click the certificate to add it to the certificate list. The certificate is now shown in Trust Manager in Certificate List.

3. Import the root certificate into the SAP Business Suite system by using Trust Manager. Proceed as follows:

1. Double-click the SSL Client Identity ARIBA that you have created.
2. Navigate to the Certificate group box and choose Import certificate. Add the imported certificate to the certificate list by clicking Add to Certificate List.

4. For HTTPS SSL encryption, obtain the server certificate from Ariba. Proceed as follows:

2. Download the certificate using your browser.

Note
Communication with Ariba Network is based on HTTPS. For HTTPS SSL encryption, SAP Cryptographic Library is required. For information about installation of SAP Cryptographic Library, search for the phrase The SAP Cryptographic Library Installation Package in the documentation of SAP NetWeaver at http://help.sap.com.
For example, if you are using Internet Explorer, choose View > Security Report > View Certificates. On the Details tab page, choose Copy to File and export it in the Base-64 encoded X.509 format.

3. Import the server certificate into the SAP Business Suite system using Trust Manager.

4. Double click the Ariba SSL Client ID that you have created.

5. Navigate to the Certificate group box and choose Import certificate. Add the imported certificate to the certificate list by clicking Add to Certificate List.

5. To activate the changes, restart the Internet Communication Manager (ICM) using transaction SMICM and choose Administration > ICM > Restart > Yes. For more information, search for the phrase “Using the ICM Monitor” in the documentation of SAP NetWeaver at http://help.sap.com.

6. Configure the Web services in SOA Manager (transaction SOAMANAGER). Follow the steps described under and find the following consumer proxies:
   - cXMLSynchronousOutboundAdapterMessage_Out (CO_ARBFND_PRX_OADP_OUT)
   - cXMLGetPendingDataRequest_Out (CO_ARBFND_PRX_GPDQ_OUT)

   In the Details of Consumer Proxy group box, navigate to the Configurations tab page, select the logical port. In the Configuration of Logical Port group box, navigate to the Consumer Security tab page, choose the X.509 SSL Client Certificate radio button and enter Ariba in the SSL Client PSE of transaction STRUST field.

7. In the profile of your account on Ariba Network, select the Certificate authentication method in the cXML setup and enter the public key of the certificate.

Authentication with Shared Secret Password

Proceed as follows:

1. Maintain the shared secret password in the Define Credentials for Ariba Network Customizing activity. For more information, see Add-On Customizing.

   The shared secret password is stored in the secure storage ABAP DB in SAP Business Suite system. Ariba Network Integration 1.0 for SAP Business Suite supports a shared secret password for Ariba Network with a maximum length of 36 characters.

   **Note**

   Note: for authentication with shared secret password, the shared secret password has to be provided in the Sender element of the cXML payload.

   According to security requirements, passwords must not be written to logs, protocols or traces. Therefore, the shared secret password is not visible in transactions such as SXMB_MONI where the XML message monitoring and tracing takes place. As business users can also have authorization for the message monitoring transactions. However, when activating an Internet Communication Framework (ICF) recording using transaction SICF, the system logs the shared secret password in the corresponding ICF trace. ICF recording is only intended for administrators and requires the S_ADMI_FCD authorization.

2. For HTTPS SSL encryption, obtain the server certificate from Ariba. Proceed as follows:
   2. Download the certificate using your browser.

      For example, if you are using Internet Explorer, choose View > Security Report > View Certificates. On the Details tab page, choose Copy to File and export it in the Base-64 encoded X.509 format.
3. Import the server certificate into the SAP Business Suite system using Trust Manager.

4. Double-click the SSL Client SSL Client (Anonymous) node.
   Navigate to the Certificate group box and choose Import certificate. Add the imported certificate to the certificate list by clicking Add to Certificate List.

3. To activate the changes, restart the Internet Communication Manager (ICM) using transaction SMICM and choose Administration ICM Restart Yes.

4. In the profile of your account in the Ariba Network, select the shared secret authentication method in the cXML setup.

### 3.2 SAP Business Suite System Acting as a Server

No proxy or reverse proxy is required. The asynchronous inbound application service interfaces are called either internally in the SAP Business Suite system or by SAP NetWeaver PI.

### 3.3 Virus Scan for Attachments

For attachments arriving with cXML messages, Ariba Network Integration 1.0 for SAP Business Suite calls the SAP NetWeaver virus scan interface (VSI). The VSI also provides an interface to an external virus scan.

Note that you must install your own virus scan software, as we do not provide virus scan software with Ariba Network Integration 1.0 for SAP Business Suite.

For more information, search for the phrase Virus Scan Interface in the documentation of SAP NetWeaver under http://help.sap.com.

### 3.4 Roles and Authorizations

In Ariba Network Integration 1.0 for SAP Business Suite you can use the authorization object ARBFND_ARB to execute reports and to process inbound messages. This object must be added by assigning the SAP Business Suite Integration Component for Ariba (SAP_ARBFND_INTEGRATION) role. To make sure the corresponding profile is available and active, you must generate the role profile using transaction PFCG.

A technical user is required in the Business Suite back-end system to process the incoming messages. This user must not have the SAP_ALL authorization.

We recommend that you assign the following roles to the user:

- **SAP Business Suite Integration Component for Ariba** (SAP_ARBFND_INTEGRATION)
  This role provides general authorization for using Ariba Network Integration 1.0 for SAP Business Suite.

- **Web Service Consumer** (SAP_BC_WEBSERVICE_CONSUMER)
  This role is required for using Web service protocol to communicate in direct connectivity.
If you integrate through mediated connectivity, we recommend that you assign the following roles to the user:

- **SAP Business Suite Integration Component for Ariba** (SAP_ARBFND_INTEGRATION)
  This role provides general authorization for using the add-on.
- **Exchange Infrastructure: Service User for Application Systems** (SAP_XI_APPL_SERV_USER)
  This role is required to communicate through XI protocol in mediated connectivity.
4 Operations and Troubleshooting

4.1 Billing Document Filtering

You can filter billing documents that you want to transfer to the Ariba Network. For more information about billing document types that are supported, refer to Ariba Network Integration for SAP ERP SD (Sell Side).

In the Customizing activity Define Message Output Control, you can define settings to filter by sales organization and customer. For more information, see Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba ➤ Application Specific Settings ➤ SAP ERP Integration Component for Ariba ➤ Define Message Output Control.

In the Customizing activity Maintain Output Determination for Billing Documents, you can determine the output specific to the billing documents. For more information, see Customizing for Sales and Distribution under Basic Functions ➤ Output Control ➤ Output Determination ➤ Output Determination Using the Condition Technique ➤ Maintain Output Determination for Billing Documents.

You can specify additional filtering criteria in the invoice output programming object within the ASSIGN_SENDER_ANID method in the BAdI: Outbound Mapping (ARBERP_OUTBOUND_MAPPING).

4.2 Message Monitoring

4.2.1 Message Monitoring for Direct Connectivity

Outbound Messages

Outbound messages can be triggered by the application itself, for example, the billing invoices application. Here, the application displays an output status and the output processing log. Depending on the customizing settings for output control, the message is sent immediately after a document was saved or periodically by a scheduled output job.

You can also trigger outbound messages using scheduled reports (jobs), for example, by triggering the InvoiceDetailRequest request. Here, you can trace the outbound messages in the application log (transaction SLG1).

The XML message IDs can be used as selection parameters for the XML monitor (transaction SXI_MONITOR) to directly access a cXML message.

The monitor displays a checkered flag status for a successfully transferred message, as shown in the figure below. Given that the call to the Ariba Network is synchronous, Ariba Network accepts and creates the message.
The following figure (from **SXI_MONITOR**) shows how a successfully transferred message is displayed in the monitor:

A complete trace of the message processing can be found in the application log under the **Ariba Integration** (~Ariba_Integration~) object.

**Figure 5: A Successfully Transferred Message in the Monitor**
You can search by XML message ID, payload ID, or ID of the object, for example, the billing invoice number. You can enter the ID in the External ID field. Note that you have to insert an asterisk before and after an external ID, as shown in the following figure:

![Analyse Application Log](image)

Figure 6: Search for a Message in the Application Log by External ID

The application log displays two entries for every outbound message. The first entry records the creation of the cXML message, the second the transfer to the Ariba Network.

If the outbound message is successful, Ariba Network has accepted the document and the message 201 Accepted is displayed.

Inbound Messages

Inbound messages are polled from the Ariba Network by running the report Fetch cXML messages for different message types from Ariba Network (ARBFND_FETCH_CXML_MESSAGES_NEW). You must schedule the report to run regularly. For more information, see chapter Jobs to Be Scheduled [page 20].

Ariba Network Integration 1.0 for SAP Business Suite writes an application log entry for each executed poll and for each message retrieved from the Ariba Network.
As of SAP_BASIS 7.40, you have to use the message monitor of Web Service Utilities (transaction SRT_MONI) for monitoring XML messages instead of the XML monitor (transaction SXI_MONITOR).

All cXML messages are displayed in the XML message monitor (transaction SXI_MONITOR).

To filter the messages by a specific inbound message type, you can specify the interface name of the receiver, such as cXMLOrderRequest_In or cXMLPaymentRemittanceRequest_In.

The system displays the status for a message as follows:

- Checkered flag for successful processing
- Red for failed processing
- Green for queued processing

If your SAP Business Suite system is on SAP_BS_FND 701 or higher and Forward Error Handling (FEH) is activated, the system can display a yellow status. This means that the system has forwarded the issue to the FEH application.

The framework of Ariba Network Integration 1.0 for SAP Business Suite additionally offers to send the processing status of an inbound message back to the Ariba Network. You can activate this functionality in the Customizing activity Define Basic Message Settings by selecting the Send cXMLStatusUpdateRequest Message checkbox. For more information, see Customizing under Integration with Other SAP Components > SAP Business Suite Integration Component for Ariba > Framework Settings > Define Basic Message Settings.

If this functionality is activated, an inbound message that has successfully been processed by the SAP ERP system changes the routing status of a document from Sent to Acknowledged on the Ariba Network.

Inbound messages that have not been successfully processed by the SAP ERP system will change the status from Sent to Failed - provided that Forward Error Handling (FEH) is activated and the message is discarded.

### 4.2.2 Message Monitoring for Mediated Connectivity

#### Outbound Messages

Outbound messages can be triggered by the application itself, for example, the billing invoice application. Here, the application displays an output status and the output processing log. Depending on the Customizing settings for output control, the message is sent immediately after the document was saved, or it is sent periodically by a scheduled output job.

You can also trigger outbound messages using scheduled reports (jobs) such as the InvoiceDetailRequest request. Here, you can trace outbound messages in the application log using transaction SLG1.

The following figure shows an example of the output history for a billing invoice message:

The application uses a green status for successful processing. This means that the system has created a cXML message that will automatically be transferred to SAP NetWeaver PI. The message log contains the Billing Invoice ID, the cXML message payload ID, and the XML message ID.
The following figure shows the processing log of a successfully created message:

![Figure 7: Processing Log of a Successfully Created Message](image)

**Note**

As of **SAP_BASIS 7.40**, you have to use the message monitor of Web Service Utilities (transaction **SRT_MONI**) for monitoring XML messages instead of the XML monitor (transaction **SXI_MONITOR**). The XML message IDs can be used as selection parameters for the XML monitor (transaction **SXI_MONITOR**) to directly access a cXML message.

The monitor displays a checkered flag status for a successfully transferred message. The monitor displays an error status if there is a technical connectivity issue between SAP ERP and SAP NetWeaver PI. The system first sends a cXML message to SAP NetWeaver PI, and then transfers the cXML message to the Ariba Network.

A complete trace of the message processing in the SAP ERP system can be found in the application log under the **Ariba Integration** (**Ariba_Integration**) object.
You can search by XML message ID, payload ID, or ID of the object, for example, a billing invoice number. You can enter the ID in the **External ID** field. Note that you shall put an asterisk before and after an external ID, as shown in the following figure:

![Analyze Application Log](image)

**Figure 8: Search for a Message in the Application Log by External ID**

The application log displays exactly one entry for your outbound message. This entry records the creation of the cXML message.

If the message is successful, the system displays a green status in the application log and passes the message to your middleware.

### Inbound Messages

All cXML messages are displayed in the XML message monitor (transaction **SXI_MONITOR**).

**Note**

As of **SAP_BASIS 7.40**, you have to use the message monitor of Web Service Utilities (transaction **SRT_MONI**) for monitoring XML messages instead of the XML monitor (transaction **SXI_MONITOR**).
To filter the messages by a specific inbound message type, specify the interface name of the receiver using cXMLOrderRequest or cXMLPaymentRemittanceRequest_In as the standard selection criteria.

The system displays a status for a message as follows:

- Checkered flag for successful processing
- Red for failed processing
- Green for queued processing

If your SAP Business Suite system is based on SAP_BS_FND 701 or higher and Forward Error Handling (FEH) is activated, the system can display a yellow status. This means that the system has forwarded the issue to the FEH application.

The framework of Ariba Network Integration 1.0 for SAP Business Suite additionally offers to send the processing status of an inbound message back to the Ariba Network. You can activate this functionality in Customizing activity Define Basic Message Settings by selecting the Send cXMLStatusUpdateRequest Message checkbox. For more information, see Customizing under Integration with Other SAP Components > SAP Business Suite Integration Component for Ariba > Framework Settings > Define Basic Message Settings.

If this functionality is activated, an inbound message that has successfully been processed by the SAP Business Suite system changes the routing status of a document from Sent to Acknowledged on the Ariba Network.

Inbound messages that have not been successfully processed by the SAP Business Suite system will change the status from Sent to Failed provided that Forward Error Handling (FEH) is activated and the message is discarded.

### 4.3 Application Log

The application log is the central tool for monitoring all activities in SAP Business Suite systems that are connected to Ariba Network Integration 1.0 for SAP Business Suite. You can access the application log using transaction SLG1.

The SAP Business Suite system records all messages triggered to Ariba or received from Ariba in one or more entries under the Ariba Integration (ARIBA_INTEGRATION) object.

There are four subobjects for further filtering:

- **INBOUND**

  Ariba Network Integration 1.0 for SAP Business Suite processes all messages belonging to the namespace http://sap.com/xi/ARBFND1 and the below defined interfaces. It writes an entry to the application log and you can also review the processing status of the entries.

  Messages that have been pushed into the SAP Business Suite system by middleware create an entry only with the subobject **Inbound**. Messages that have been polled from Ariba Network directly into the SAP Business Suite system are included in both an entry with the subobject **INBOUND** and an entry with the subobject **POLLING**.

- **POLLING**

  If you run the integration to Ariba Network through direct connectivity, you must schedule a polling job to retrieve messages. Each time the polling job runs, it writes an entry in the application log, listing the message type and timestamp when the system has polled.

  After messages have been polled from the Ariba Network, the log entry lists all message IDs (XML ID and payload ID) that have been retrieved and put in the queue for message processing.
• **OUTBOUND**

Every message leaving the SAP Business Suite system writes an entry to the application log with this subtype. For direct connectivity, there are two entries, one for the creation of the cXML message and the other indicating whether the message has successfully been transferred to the Ariba Network.

**Search in the Application Log**

You can filter the application log entries by object and subobject as described above. *Date and Time* is also a filter criterion.

If you are searching for specific entries, you can also use the *External ID* field by entering a business object ID, a payload ID, or a XML message ID. Note that you have to insert an asterisk before and after the entered ID.

Since Ariba Network Integration 1.0 for SAP Business Suite creates many entries to record the message exchange with the Ariba Network, we recommend that you double check your settings for archiving your application log and make necessary adjustments. For more information, search for the phrase *Application Log - User Guidelines (BC-SRV-BAL)* in the documentation of SAP NetWeaver at [http://help.sap.com](http://help.sap.com).

### 4.4 Forward Error Handling (FEH)

The Forward Error Handling (FEH) framework is available with SAP_BS_FND 70 and higher. For more information, search for the phrase *Error and Conflict Handler* in the documentation of SAP NetWeaver under [http://help.sap.com](http://help.sap.com).

You can use FEH for error handling of incoming documents. You can also use it to send acknowledgements to your business partners on Ariba Network about documents you have received with errors. To send such acknowledgements, you can schedule the report *Send Acknowledgements for Incoming cXML Messages to Ariba Network* (ARBND_FEH_SEND_STAT_ACKNO). For more information, see the report documentation that is available in the system.

#### 4.4.1 Prerequisites: Customizing Settings for FEH

**Activate Error and Conflict Handler**

You have activated Error and Conflict Handler (ECH) in your SAP application client. For more information, see Customizing for *Cross-Application Components* under [Processes and Tools for Enterprise Applications](#) > *Enterprise Services* > *Error and Conflict Handler* > *Activate Error and Conflict Handler* in the *Activate ECH for Clients* view, select the *Activated* checkbox.
Define Resolution Strategy

You have defined a resolution strategy that specifies whether and how processes are executed again or ended after errors or conflicts occur. You can define, for example, the periods during which a certain error can be corrected by automatically repeating the process.

For more information, see Customizing for Cross-Application Components under Processes and Tools for Enterprise Applications > Enterprise Services > Error and Conflict Handler > Define Resolution Strategy.

Ariba Network Integration 1.0 for SAP Business Suite provides the component BNS-ARI-SE-FND for which a resolution strategy can be created.

When defining error resolution strategy, you can find the following source fields:

- **Business Process** (PROCESS)
- **Error Category** (ERROR_CATEGORY)

For suppliers, Ariba Network Integration 1.0 for SAP Business Suite currently supports the following combinations of business processes and error categories:

- **Receive cXML OrderRequest Message** (ARBFNDORDR)
  - This business process can have the following error categories:
    - **Processing Error** (PRE)
    - **Authorization Error** (PRE.AUE)
    - **Temporary Error** (PRE.TEE)
      - This category of error should trigger an automatic retry.

- **Receive cXML PaymentRemittanceRequest Message** (ARBFNDPAYR)
  - This business process can have the following error categories:
    - **Processing Error** (PRE)
    - **Authorization Error** (PRE.AUE)
    - **Temporary Error** (PRE.TEE)
      - This category of error should trigger an automatic retry.

- **Send cXML Message** (ARBFNDOADP)
  - This business process only applies if you use direct connectivity, and it can have the following error categories:
    - **Format Error** (FOE)
      - For example, Ariba Network may return the status codes “400” (Bad Request) or “406” (Not Acceptable), with the latter meaning that the sent cXML message was not accepted by Ariba.
    - **Authorization Error** (PRE.AUE)
      - Ariba Network returned for example the status codes “401” (Unauthorized) or “403” (Forbidden).
    - **Temporary Error** (PRE.TEE)
      - Ariba Network returned for example the status codes “560” (Temporary Server Error). This category of error should trigger an automatic retry.
    - **Processing Error** (PRE)
      - This category includes all other errors.
### 4.4.2 Postprocessing Desktop

A postprocessing order is created in FEH when there is an error in either inbound or outbound processing. Use *Error and Conflict Handler: Process Postprocessing Orders* (transaction `ECH_MONI_SEL`, available as of `SAP_BS_FND 702`) to analyze the errors. If this transaction is not available in your system, you can use the *Postprocessing Desktop* (transaction `/SAPPO/PPO2`).

The following table provides an overview of the business objects and the corresponding cXML messages for which errors may occur. Note that the business objects in the sense of FEH correspond to cXML message types.

<table>
<thead>
<tr>
<th>Business Object Type / Business Process</th>
<th>cXML Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARBFNDOADP</td>
<td>N/A. This object is used for error handling of all outbound cXML messages.</td>
</tr>
<tr>
<td>ARBFNDOORD</td>
<td>Receive cXML OrderRequest message</td>
</tr>
</tbody>
</table>

### 4.4.3 Postprocessing Desktop: Edit Task

Double-click on a task to edit the details of the postprocessing order. In the *Postprocessing Desktop - Edit Order: Details* screen you can perform the following actions to resolve the error:

- **Repeat**
  The *Repeat* action restarts the processing of the cXML message. This is usually done after resolving an error, for example by changing the business object, by changing the payload, or after a temporary system issue has been resolved.

- **Display or change payload**
  To resolve an error, it may be necessary that you change the payload of a cXML message (see image below). You can make the required authorization settings in Customizing for Cross-Application Components under "General Application Functions ➤ Error and Conflict Handler ➤ Authorization for Payload Editor".
You can use the Details icon in the message table (see the arrow in image above) to navigate from the Postprocessing Desktop to the application log, where you can display further information.

- **Confirm**
  The Confirm action changes the order status in the Postprocessing Office to Completed, closes the order, and sets the status to green. You normally use this option if an inbound cXML message could not be transferred and you have applied the changes to the business document manually.

- **Discard**
  The Discard action also changes the order status in the Postprocessing Office to Completed, closes the order, and sends a cXML StatusUpdateRequest message to Ariba Network to set the acknowledgement status of the corresponding Ariba document to Failed.
  If you do not use Forward Error Handling or SAP Application Interface Framework (AIF), you can use the report Send Status Update for Canceled Inbound Messages to Ariba Network (ARBFND_SEND_STATUS_CANCELLED) to inform your suppliers about failed inbound messages. The report selects inbound messages that you have canceled manually in the XML monitor and transfers the Failed status to Ariba Network.
4.5 SAP Application Interface Framework (AIF)

Alternatively to Forward Error Handling (FEH), you can use the SAP Application Interface Framework (AIF) for monitoring cXML messages and related troubleshooting activities. AIF is an add-on product based on SAP NetWeaver that enables you to monitor different mechanisms for data exchange, such as XML, IDOC, etc. For more information about AIF, see SAP Help Portal at http://help.sap.com/aif.

Using AIF, you can monitor all inbound cXML messages that are received in Ariba Network Integration 1.0 for SAP Business Suite. In addition, you can monitor all outbound messages that are sent via direct connectivity. For outbound messages that are sent via mediated connectivity, for example using the Ariba Network Adapter for SAP NetWeaver, you have to use the monitoring tools provided by the middleware.

Note that the release dates of the AIF add-on and of Ariba Network Integration 1.0 for SAP Business Suite are not identical. Therefore new messages that are supported by Ariba Network Integration 1.0 for SAP Business Suite may not be supported immediately by AIF. For more information, see SAP Note 2215054.

To enable monitoring the exchange of cXML messages between Ariba Network Integration 1.0 for SAP Business Suite and Ariba Network, default Customizing is provided in AIF. In addition, some steps must be implemented manually. For instructions, see SAP Note 2215054.

Supported Outbound cXML Message Types (Sent via Synchronous Outbound Adapter):

- CopyRequest.InvoiceDetailRequest
- ConfirmationRequest
- InvoiceDetailRequest
- OrderRequest
- PaymentProposalRequest
- PaymentRemittanceRequest
- PaymentRemittanceStatusUpdate
- QuoteRequest
- ReceiptRequest
- ShipNoticeRequest
- StatusUpdateRequest
- CopyRequest.PaymentProposalRequest
- ConfirmationRequest
- InvoiceDetailRequest
- OrderRequest
- PaymentRemittanceRequest
- QuoteMessage
- ShipNoticeRequest
- ServiceEntryRequest

To display the above listed messages in transaction Monitor and Error Handling (/AIF/ERR), you have to specify a namespace, for example the default namespace /BNARB.

In this transaction, you can do the following:

- Restart messages that were transmitted with errors.
- Cancel messages. If you cancel inbound messages, the “Failed” status is transferred to Ariba Network, informing the business partner about the cancellation of the message. (Prerequisite: You have made the
corresponding settings in Customizing for SAP Business Suite Integration Component for Ariba under 
[Framework Settings > Define Basic Message Settings].

- Edit the message payload.
- Display the same information as in the Application Log (transaction SLG1).

For more information, see the application help for AIF that is available on SAP Help Portal at http://help.sap.com/aif. Note that the collective SAP Note 2215054 for AIF may also contain important information.

4.6 Troubleshooting Outbound Messages

Messages can fail to be transferred from the SAP ERP system to the Ariba Network due to the following reasons:

- The cXML message cannot be created
- The cXML message cannot be transferred to SAP NetWeaver PI (in case of mediated connectivity)
- The cXML message cannot be sent to Ariba Network

Troubleshooting Messages Transferring Billing Documents and Outbound Deliveries

For billing documents and outbound deliveries, you can track the creation of the cXML messages in the message processing log that you can access when displaying the respective document in SAP ERP. This log also persists in the application log. For more information, see chapter Application Log [page 33].

Ariba Network Integration 1.0 for SAP Business Suite does not create cXML messages containing data that is not supported by the Ariba Network. Neither does it create cXML messages that do not contain the minimum set of required fields.

Once a cXML message has been created and you want find out whether it has successfully reached the Ariba Network, use the XML message monitor (transaction SXI_MONITOR).
The monitor displays messages that have not been transferred to the Ariba Network with a red status (error status), as shown in the following figure:

![Monitor for Processed XML Messages](image)

**Figure 10: Error Status of a Failed Message Displayed in the Monitor**

Depending on whether you use mediated connectivity or direct connectivity, the cause of the error must be analyzed differently:

- If you integrate with the Ariba Network using **mediated** connectivity, analyze the communication between SAP ERP and your middleware.
- If you integrate with the Ariba Network using **direct** connectivity, a synchronous call is performed from the SAP ERP to Ariba Network. The error status of the message indicates the following possible issues:
  - The Ariba Network can currently not be reached. In this case, you must reprocess your failed messages once Ariba Network is available again. To enable mass processing, the report `Restart failed outbound messages` (ARBFND_MASS_MESSAGE_RESTART) is available. For more information, see chapter Jobs to Be Scheduled [page 20].
  - Your cXML message cannot be accepted by Ariba Network. In this case, you can view the short text of the error message by double-clicking the message. The long text of the error message, which describes the details of the error, can be found in the application log (transaction SLG1). You can search in the application log by entering the XML message ID as an external ID (insert an asterisk before and after the XML message ID). As a result, you receive two log entries: the first one with a green status, indicating that the cXML message has successfully been created; the second one with a red status, indicating that the cXML message has not been transferred to the Ariba Network. Double-click the red log entry to see the messages. The error message contains a long text that you can
display by clicking on Details. This error message is issued by the Ariba Network. For more information, see Application Log [page 33].

If your SAP ERP system is based on SAP_BS_FND 701 or higher and FEH is activated, errors that occur during the transfer of cXML messages to the Ariba Network create an object in FEH and the error handling is done through FEH. For more information, see chapter Forward Error Handling (FEH) [page 34].

4.7 Troubleshooting Inbound Messages

Messages that reside on the Ariba Network in the outbound queue are either polled by the Ariba Network adapter from SAP NetWeaver PI or by Ariba Network Integration 1.0 for SAP Business Suite from the SAP Business Suite system.

If you use mediated connectivity, the polled messages are pushed into SAP Business Suite system, where the inbound processing is triggered. If the handover from the middleware to the SAP Business Suite system is not successful, the technical connectivity is likely to be the issue. Besides checking the connectivity setup between the SAP Business Suite system and the middleware, consider issues regarding the user name and password as well as authorization issues.

For both connectivity options, application-specific message processing issues can be recognized using transaction SXI_MONITOR.

By searching by the cXML message ID or cXML payload ID, you can also find an entry in the application log (transaction SLG1) that displays the error message.

Note

cXML messages are always retrieved from the Ariba Network and placed into the inbound processing queue of the SAP Business Suite system, no matter whether they can be processed or not.

If you use direct connectivity, polling errors occur mainly due to authorization issues or due to temporary downtime of the Ariba Network. For information about authorization, see chapter Roles and Authorization [page 25]. Failed polling attempts can be found in the application log of the SAP Business Suite system (transaction SLG1). The cXML messages remain on the Ariba Network until the next successful polling, when all pending messages are picked up.

If your SAP Business Suite system is on SAP_BS_FND 701 or higher and FEH is activated, unsuccessful incoming cXML messages create an object in FEH, and the error handling is done using FEH. For more information, see chapter Forward Error Handling (FEH) [page 34].

An inbound message can fail to be processed for many reasons, for example, authorization issues, but the main reasons are application errors. For information about authorization, see chapter Roles and Authorization [page 25].

You can try to resolve the error and restart the message using transaction SXI_MONITOR.
The following figure shows an example of a sales order request cXML message that failed in inbound processing:

![Failed Sales Order Request](image)

You can double-click the cXML message and see the error message. You can also view the error message by entering the XML message ID or cXML payload ID in the application log (transaction SLG1).
You shall find one entry with the red error status, as shown in the following figure:

![Error Message Displayed in the Application Log](image)

Figure 12: An Error Message Displayed in the Application Log

To correct this error, assign the correct unit of measure.

Go back to the XML monitor, select the message and click the **Restart** button.

Refresh the monitor and check the message's status again. The error status is changed to successful status (marked by a checked flag).

If the message contains data that you cannot process, you have the following options:

- **Recurring issue**
  
  You can permanently influence the data mapping and forward the data to the applications by implementing the pre-processing inbound BAdI. For more information, see chapter *Add-On Customizing* [page 16].

- **One-time issue**

  If the issue is caused by incorrect data that you have received from the customer, you can ask them to correct the issue and resend the message. The failed cXML message in your inbound queue has to be cancelled manually and you can cancel the message by clicking **Cancel Processing of Messages with Errors**.
5 Appendix

5.1 Configuration of SOA Manager in Supplier's System

As a prerequisite, you have added Ariba's security certificate to SAP ERP and set up the security settings. For more information, see chapter SAP Business Suite System Acting as a Client.

Note
The configuration of Web services is required only for direct connectivity.

The following figure shows an overview of the data communication:

5.1.1 Define Outbound Consumers

Start again from the Web Service Administration screen. On the Search tab page, enter Consumer Proxy in the Search by field and co_arbfnd* in the Search Pattern field, then Choose Go.
Depending on your implementation, the system displays the following outbound consumers:

- CO_ARBFND_PRX_GPDQ_OUT
- CO_ARBFND_PRX_OADP_OUT
- CO_ARBFND_PRX_STAT_OUT
- CO_ARBFND_PRX_PCAS_OUT
- CO_ARBFND_PRX_INVNC_OUT
- CO_ARBFND_PRX_CONF_OUT
- CO_ARBFND_PRX_SHIP_OUT

There are three groups of outbound consumers:

- Consumers communicating directly with Ariba Network
  
  The outbound consumer CO_ARBFND_PRX_GPDQ_OUT is for the Polling Agent. This consumer fetches cXML messages from Ariba Network synchronously.
  
  The outbound consumer CO_ARBFND_PRX_OADP_OUT is for the synchronous outbound adapter. This consumer sends cXML messages to Ariba Network.

- Consumers getting data from SAP ERP and sending it to the synchronous outbound adapter
  
  The outbound consumers CO_ARBFND_PRX_INVNC_OUT, CO_ARBFND_PRX_CONF_OUT, and CO_ARBFND_PRX_SHIP_OUT transfer data from SAP ERP to the Ariba Network.

- Consumers sending data from the Polling Agent to inbound services
  
  The adapter CO_ARBFND_PRX_PCAS_OUT is part of the Polling Agent and provides data to the following inbound services that send data to SAP ERP:
  
  - CXMLORDERREQUEST_IN
  - CXMLPAYMENTREMITTANCE_REQUEST_IN

### 5.1.2 Define Inbound Services

In Customizing for Integration with Other SAP Components under SAP Business Suite Integration Component for Ariba Framework Settings Direct Connectivity Settings Manage and Test Enterprise Services, double-click this node and a new browser window opens. You make configuration on the SOA Management screen as follows:

1. On the Business Administration (or Service Administration) tab page, choose Web Service Administration (or Web Service Configuration).

2. Enter Service (or Service Definition) in the Search by field and CXML* in the Search Pattern field, then choose Go.

Depending on your implementation, the system displays the following inbound services:

- CXMLSYNCHRONOUSOUTBOUNDADAPTER
- ARBFND_CXMLORDERREQUEST_IN
- ARBFND_CXMLPAYMENTREMITTANCE_REQUEST_IN

**Note**

The inbound service CXMLSYNCHRONOUSOUTBOUNDADAPTER receives cXML messages from the outbound consumers and sends the cXML messages to the Ariba Network.
The other inbound services (ARBFND_CXMLORDERREQUEST_IN and ARBFND_CXMLPAYMENTREMITREQ_IN) receive cXML messages from the Ariba Network through the outbound consumer of the Polling Agent and process these cXML messages in the SAP ERP system.

Configuration of the Inbound Service
CXMLSYNCHRONOUSOUTBOUNDADAPTER

Proceed as follows:

1. Choose CXMLSYNCHRONOUSOUTBOUNDADAPTER and choose Apply Selection.
2. Navigate to the Configurations tab page and choose Create Service. The SOA Management dialog box appears.
3. Enter the required values, and choose Apply Settings. The following table contains an example of a set of values you can enter:

<table>
<thead>
<tr>
<th>New Service Name</th>
<th>Description</th>
<th>New Binding Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYNC_OUTB_ADAPTER</td>
<td>Synchronous Outbound Consumer</td>
<td>SYNC_OUTB_ADAPTER</td>
</tr>
</tbody>
</table>

4. In the Configuration of Web Service 'SYNC_OUTB_ADAPTER': Endpoint 'SYNC_OUTB_ADAPTER' group box, navigate to the Transport settings tab page and choose Local System Call in the Make Local Call field.
5. Navigate to the Provider Security tab page of the group box and select the User ID/Password checkbox for the HTTP Authentication method.
6. Save your configuration. The system displays a successful message such as Binding 'SYNC_OUTB_ADAPTER' activated in Service 'SYNC_OUTB_ADAPTER'. Alternatively, check the error messages and other messages at the top of the screen.

Note
You will need to know the location of your newly defined inbound services to define the ports of the outbound consumers later on. Before you leave this transaction, note down this destination address. We recommend you also do this for the other inbound services.

To note down the location information, continue with the following steps:

7. In the Details of Service Definition: CXMLSYNCHRONOUSOUTBOUNDADAPTER group box and on the Overview tab page, click the link Open WSDL document for selected binding or service. The system displays a new window.
8. Scroll down to the last line that starts with the text soap:address location= and copy this link to a separate document, for example, a Microsoft Word or Excel document. You need this link later on when defining outbound consumers. The following is an example of a link: http://abc1234.wdf.sap.corp:12345/sap/bc/srt/xip/sap/cxmlsynchronousoutboundadapter/002/sync_outb_adapter/sync_outb_adapter

Taking the above link as an example, you can divide the link into the following parts:

- **Computer name**: abc1234.wdf.sap.corp
- **Port number**: 12345
5.2 **Extrinsic Elements (Extensibility)**

Extensibility in the communication with Ariba Network is enabled by extrinsic elements in cXML messages. For more information, see the cXML User's guide that is available at [http://cxml.org](http://cxml.org).

Ariba Network Integration 1.0 for SAP Business Suite supports enhancements for all types of outgoing messages with additional fields (extrinsics), as well as the processing of extrinsics in all types of incoming messages.

### 5.2.1 Extrinsics in Inbound cXML messages

A cXML message that comes in from Ariba Network can hold additional data that you would like to process and store in SAP ERP. Therefore you must enhance the inbound message mapping. To do this, use the enhancement spot `ARBERP_INBOUND` with the BAdI Definition `ARBERP_INBOUND_MAPPING`.

See the Customizing documentation and the BAdI definition for the methods you can implement.

### 5.2.2 Extrinsics in Outbound cXML Messages

To enhance a cXML message that you send to Ariba Network you have to add it in the outbound message mapping. To do this, use the enhancement spot `ARBERP_OUTBOUND` with the BAdI Definition `ARBERP_OUTBOUND_MAPPING`. This BAdI is available in Customizing for SAP Business Suite Integration.
Component for Ariba under Application-Specific Settings SAP ERP Integration Component for Ariba Business Add-Ins (BAdIs) BAdI: Outbound Mapping

See the Customizing documentation and the BAdI definition for the methods you can implement.
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