

Application

Using PIDX

Standards Library Version 5.0

Sterling Commerce
An IBM Company

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Introduction

Petroleum Industry Data Exchange (PIDX) is the organization that develops EDI data requirements for the petroleum (oil and gas) industry and represents the industry regarding maintenance of the X12 standard. PIDX provides a forum for delivering the process, information, and technology standards, using the X12 standard as well as XML standards.

PIDX defines a format for business processes, which include data formats and flows using PIDX-defined transport methods and security. The PIDX-defined processes serve as frameworks for business flows throughout trading partner systems.

The PIDX implementation in Application follows the RosettaNet RNIF 2.0 specification (message building and parsing), and it supports asynchronous HTTP.

Note: Prior to using PIDX in Application, you must activate your license. Contact Sterling Commerce Customer Support if you have any questions about license activation.

This table describes how Application supports PIDX:

Functionality	Details	Action You Need to Take to Implement PIDX
Services	<ul style="list-style-type: none"> ◆ RosettaNet Message Builder service constructs PIDX messages from documents and data stored in the business process context and uses standard trading profile objects to encrypt or sign message (if necessary) ◆ RosettaNet Message Parser service parses PIDX messages, storing the extracted headers in process data, and places the service content and attachments as the body of Application documents, using standard trading profile objects to encrypt or sign message (if necessary) ◆ RosettaNet Message Sending service is required to send PIDX messages to a trading partner ◆ RosettaNet PIP Tracking service manages RosettaNet PIP tracking data and is used by PIDX business processes to ensure that the PIPs execute in the proper order and to add correlation data for PIDX messages ◆ RosettaNet Profile service loads the standard trading profile data as well as PIDX Profile data from the configured trading partner contracts (the data is retrieved from the database and serialized as XML, and the XML is returned and can be mapped into process data) ◆ HTTP Client adapter sends Action and Signal messages ◆ HTTP Server adapter sends documents to and receives documents from a trading partner using HTTP 	◆ None

Functionality	Details	Action You Need to Take to Implement PIDX
Predefined business processes	<ul style="list-style-type: none"> ◆ Initiator business processes for each of the 11 PIDX transactions (business processes beginning with PIPP) ◆ Responder business processes for each of the 11 PIDX transactions (business processes beginning with PIPP) ◆ The following action templates for business processes (if you want to customize your own business processes) are located at: <standardsclump>/product/resources/services/cidx/files/data/cidx/templates <ul style="list-style-type: none"> - OneActionTxn_Initiator_Private_Template.bpml - OneActionTxn_Responder_Private_Template.bpml - TwoActionTxn_Initiator_Private_Template.bpml - TwoActionTxn_Responder_Private_Template.bpml ◆ RNIF Envelope business process uses the RosettaNet Message Builder service to build the final PIDX message ◆ RNIF Develope business process uses the RosettaNet Message Parser service to handle incoming PIDX messages 	None
Map Editor	<ul style="list-style-type: none"> ◆ Map Editor wizard enables you to generate a file layout using the PIDX message that you select. Included in the PIDX map are the map components that are defined by PIDX. ◆ Properties dialog boxes that enable you to define and modify PIDX map components. ◆ Autolink function automatically creates links between input and output fields that have the same name or business name. This function can be used with any data format. ◆ Additional mapping operations as needed. 	<ul style="list-style-type: none"> ◆ Download Map Editor. ◆ Create a map or maps to translate your PIDX messages.
Correlation Search	Search by PIDX information.	Use the Correlation search functionality to search for PIDX correlation information.

Functionality	Details	Action You Need to Take to Implement PIDX
Trading Partner	<ul style="list-style-type: none"> ◆ The Trading Partner Contract Wizard includes a PIDX extension type. ◆ The Trading Partner Contract Wizard uses PIDX terminology for parameters. 	Create PIDX trading partner records, including Identities, Transports, Document Exchange, Packaging (to support SIGNING and/or ENCRYPTION), Profiles, and Contracts.
PIP Codes	Codes for 11 PIDX transactions are available in the PIP definition file that is preloaded with Application	None

Prerequisite

This manual assumes that you are familiar with PIDX.

Inbound and Outbound Document Flow

The inbound document flow for a PIDX document through Application is as follows:

Inbound Sequence	Description
1	A PIDX message is received using HTTP.
2	The RN HTTP Server adapter is configured to invoke the Bootstrap business process when a message arrives.
3	The RNIF Develope business process invokes the RN Parsing service, constructs the header elements into process data, and extracts the service content and attachments.
4	The RNIF Parsing service parses and validates the entire message.
5	Based on the result of the parsing, the RNIF Parsing service decides either to send an acknowledgement or exception. Additionally, the RNIF Parsing Service sends a HTTP Response status code to the initiator of the message (via HTTP).
6	The Transaction Responder Private business process is invoked to determine if the message is a two-action PIP.
7	If the transaction is a two-action PIP, the responder sends the response Action Message to the initiator.

The outbound document flow for a PIDX document through Application is as follows:

Inbound Sequence	Description
1	Using a compiled map, the translator translates the PIDX document and creates a Primary Document.

Inbound Sequence	Description
2	The initiator invokes a business process that assigns absolute file names to any Attachment Files.
3	The Transaction Initiator Private business process is invoked by the initiator business process to set the PIP/Transaction code and any other Contract information.
4	The RNIF Envelope business process is invoked to construct the Message Header elements. Note: Message building refers to creating message headers and bundling them with the actual payload (the service content of the message), with or without attachments.
5	The RNIF Attachment business process is invoked to loop through the attachment files and construct the necessary attachment elements.
6	The RNIF Message Builder service is invoked to create the actual message using the header elements that were created, the primary document, and the attachment file information.
7	The RNIF HTTP Send business process is invoked to send the message to the responder using the RN HTTP Server adapter.

Using PIDX with Application

To use PIDX with Application, you must complete the following tasks:

1. Create trading partner records, including Identities, Transports, Document Exchange, Packaging, Profiles, and Contracts.
2. Create the necessary maps.
3. To track PIDX messages, use the Correlation Search functionality.

Working with PIDX Trading Partners

To effectively set up trading partners that implement PIDX, you must configure Application with specific PIDX message data settings. This section provides an overview of the steps to set up trading partner information, including the different types of contracts necessary, along with the specific configuration settings that enable you to meet your PIDX data exchange requirements. After setting up your trading partner information, you can then create and implement business processes that comply with PIDX standards.

Application provides you with attachment support, which enables you to specify files (of any size and format) to be attached, by using the attachFile element and specifying a path to the file.

To configure trading partner information to implement PIDX, you must:

1. Create a trading profile for your organization and each of your trading partners. The trading profile enables you to define how you want to:
 - ◆ Build and parse PIDX message data.
 - ◆ Define message security and transport protocols.
2. You must create new Packaging to support SIGNING and/or ENCRYPTION (and supply this information while creating Profiles).
3. Depending on contractual requirements agreed upon by you and your trading partner, you then create the following types of contracts (selecting the PIDX option while creating the contracts):
 - ◆ A Partner Interface Process™ (PIP) is a PIDX-defined business process designed to be a framework for business flows between PIDX trading partners. For each PIP you plan to exchange (the PIDX PIPs are P11, P12, P21, P22, P31, P32, P33, P41, P42, P43, and P51), you must create a contract. For example, if the company is initiating and responding to P11, you must create a contract to initiate P11 and one to respond to P11.
 - ◆ You must create a RosettaNet contract for a PIP Code for Notification of Failure (PIP 0A1), as PIDX uses PIP0A1 as defined by RosettaNet as a standard means of Notification of Failure.
 - ◆ Message contracts—for PIDX-specific services to build and parse message, promote security, and send outbound PIDX messages to the appropriate URLs.

For more information about:

- ◆ PIDX solution for Application, see the Sterling Commerce Customer Support Web site at www.sterlingcommerce.com/customer/tech_support.html.
The Web site provides access to Support on Demand, which enables you to download the Application PIDX Implementation white paper. This white paper also describes the framework, business processes (BPML), and PIDX-specific services used to implement PIDX in Application.
- ◆ PIDX concepts and development, see the PIDX Web site at www.PIDX.org.

Before You Begin

Before you set up a PIDX trading profile and to simplify the tasks you must perform, collect, and prepare the following information about your organization and trading partners:

- ◆ Trading partner name and address information, including:
 - ◆ DUNS numbers
 - ◆ Contact information, such as addresses, telephone numbers, e-mail addresses
- ◆ PIP information, including:
 - ◆ PIP code and PIP version to exchange
 - ◆ Roles of trading partners using each PIP (that is, the trading partner who is initiating and the trading partner who is responding).
- ◆ RNIF (RosettaNet Implementation Framework) version information (only RNIF v02.00 is supported).
- ◆ Transport information, including:
 - ◆ HTTP URLs
 - ◆ CA certificates for trading partner if using SSL
- ◆ Security information, digital signatures, and encryption and certificates (for example, certificates used to encrypt and decrypt).
- ◆ If you are using digital certificates, check in the appropriate certificate.

Setting Up PIDX Trading Profiles

When setting up trading profiles, you must perform the following tasks:

1. Create an identity record for your organization, indicating your organization as the base identity.
2. Create an identity record for each of your trading partners.
3. Create the following records in order to complete the trading profiles for your organization and each of your trading partners:
 - ◆ Transport
 - ◆ Document exchange
 - ◆ Delivery channel
 - ◆ Packaging (only one necessary for each trading relationship, not for each individual trading partner)
 - ◆ Profiles
 - ◆ Contracts

Creating an Identity Record for Your Organization

When setting up your trading profile, consider that your organization is the base identity. Every trading partner is represented by at least one record, called an identity. An identity record describes the trading

partner and contains information referenced when a business process involving the trading partner is run. A trading partner can have more than one identity to represent the different ways it does business. For example, a company's central office procurement organization might be radically different from its manufacturing supplies procurement organization. In such cases, you need a separate identity record for each organization.

A base identity is a regular identity that you can use as a starting point to create a new identity. The base identity maintains a link to the identity that inherited its properties. If you modify the base identity, all related identities (that is, ones that inherited the base identity properties) change, as well. When you create an identity record using a base identity, everything in the new identity is the same as in the base identity, except the identity name, description, and other unique parameters, such as unique identification numbers.

You must create an identity before you can create a transport, document exchange, delivery channel, packaging, profile, and a contract when necessary. Each of these components references an identity.

Note: If you link one or more identities to a base identity and then add or modify anything related to the base identity, that change is propagated to all identities linked to the base.

When setting up your trading profile, consider that your organization is the base identity.

To create an identity record:

1. From the **Trading Partner** menu, select **Setup > Advanced > Identities**.
2. Next to Create New Identity, click **Go!**
3. In the Base Identity page, for Select Base Identity, verify that **No Base Identities Available** is selected, and click **Next**.
4. In the Information page, complete the following fields and click **Next**:

Field	Description
Name	Name of your organization. Required.
Reference URL	Internet address of your organization. Optional.
DUNS	Unique 9-13 character identification number of your organization, as issued by Dun & Bradstreet Corporation. Required.
Identifier	Primary ID of your organization. Use DUNS number. Required.
Address Line 1	Conventional mailing address of your organization. Required.
Address Line 2	Additional mailing address information of your organization. Optional.
City	City where your organization is located. Required.
State or Province	State or province where your organization is located. Required.
Zip or Postal Code	ZIP Code or postal code where your organization is located. Required.
E-mail Address	E-mail address of your organization. Required.
Telephone Number	Telephone number of your organization. Required.
Time Zone	Time zone where your organization is located. Optional.
Country	Country where your organizations located. Optional.

Field	Description
Federation Peers	Discovery point URL for the trading partner you want to associate this identity with. Optional.

- Click **Finish** to add the identity.

Creating an Identity Record for Your Trading Partner

For each PIDX trading partner, you must create an identity record.

To set up an identity record for your trading partner:

- From the **Trading Partner** menu, select **Setup > Advanced > Identities**.
- Next to Create New Identity, click **Go!**
- In the Base Identity page, for Select Base Identity, select the name of the identity record that you created for your organization, and click **Next**.
- In the Information page, complete the following fields and click **Next**:

Field	Description
Name	Name of your PIDX trading partner. Required.
Reference URL	Internet address of your PIDX trading partner. Optional.
DUNS	Unique 9-13 character identification your PIDX trading partner number, as issued by Dun & Bradstreet Corporation. Required.
Identifier	Primary ID of your PIDX trading partner. Use DUNS number. Required.
Address Line 1	Conventional mailing address of your PIDX trading partner. Required.
Address Line 2	Additional mailing address information of your PIDX trading partner. Optional.
City	City where your PIDX trading partner is located. Required.
State or Province	State or province where your PIDX trading partner is located. Required.
Zip or Postal Code	ZIP Code or postal code where your PIDX trading partner is located. Required.
E-mail Address	E-mail address of your PIDX trading partner. Required.
Telephone Number	Telephone number of your PIDX trading partner. Required.
Time Zone	Time zone where your PIDX trading partner is located. Optional.
Country	Country where your PIDX trading partner is located. Optional.
Federation Peers	???????

- Click **Finish** to add the identity of this trading partner.

You are now ready to create a transport record for this PIDX trading partner.

Creating a Transport Record

To define how to send a PIDX message using HTTP, you must create a transport record.

To create a transport record:

1. From the **Trading Partner** menu, select **Setup > Advanced > Transports**.
2. Next to Create New Transport, click **Go!**
3. In the Information page, complete the following fields and click **Next**:

Field	Description
Name	Name for the transport record to create for this PIDX trading partner. Required. Note: You should use part of a company name or DUNS in this field and an indicator that references PIDX.
Identity	Unique ID used when you created an identity record for this PIDX trading partner. Required.

4. In the Communications page, complete the following fields and click **Next**:

Field	Description
Receiving Protocol	Communications protocol supported by this transport record when receiving data. Select HTTP . Required.
Sending Protocol	Communications protocol supported by this transport when sending data. Select HTTP . Required.
End Point IP	Leave this field blank.
End Point Port	Leave this field blank.

5. In the End Point Settings page, complete the following fields and click **Next**:

Field	Description
End Point	Destination URL for this trading partner. Required. Note: If using SSL, verify use of the following URL format: http://host:port/continued URL .
End Point Type	Purpose of this end point. Select All Purpose . Required.

6. In the Protocol Settings page, complete the following fields and click **Next**:

Field	Description
Response Timeout (seconds)	Number of seconds to wait for remote response to an outbound queue. Type the value 600 in this field. Required for PIDX.

Field	Description
Firewall Proxy	IP address, port number, login ID, and password of the remote firewall represented in URL format where commas separate values (for example, <host>, <port>). If used, you may need to specify both a login ID and a password. Used for outbound sessions. Optional.
Firewall Connect Count (seconds)	Number of seconds that Application attempts to contact port address of the transport before timing out. Optional.
Socket Timeout (seconds)	Number of seconds to wait for remote response to a command. Type the value 600 in this field. Required.

7. In the Security page, complete the following fields and click **Next**:

Field	Description
SMIME Encryption User Certificate	Certificate used to encrypt PIDX messages that are sent outbound through this transport record. This certificate has no impact in PIDX messages being received through this transport. Therefore, if this transport is for the company running Application, leave this field blank . If this transport is for your PIDX trading partner, choose the Trusted encryption certificate from the trading partner that you previously checked in. Required for PIDX.
SMIME Decryption Certificate (System Store)	Certificate used to decrypt PIDX messages that are received (inbound) through this transport record. This certificate has no impact in PIDX messages being received through this transport. Therefore, if this transport is for the company running Application, leave this field blank. If this transport is for your PIDX trading partner, choose the encryption certificate from the trading partner that you previously checked in. Required for PIDX. Valid values are blank (recommended), OpsKey, OpsDrv, UIKey, and B2BHTTP.
SSL	Whether Secure Sockets Layer (SSL) must be active. Select Must to enable this transport to use this protocol with a key certificate. This field is used in conjunction with the key certificate field. If not using a key certificate, select None . Required for PIDX.
Key Certificate Passphrase	Password that protects the Web server key certificate. Required if SSL option is set to Must.
Cipher Strength	Strength of the algorithms used to encrypt messages. Select Strong (default) to indicate strength of algorithms with a key certificate. This field is used in conjunction with the key certificate field. If not using a key certificate, select All or Weak . Required.
Key Certificate (System Store)	Certificate used to decrypt an inbound encrypted RNIF v2.0 message sent to the identity associated with this transport. The trading partner encrypts the message with the public key and the receiver decrypts the message with this private key certificate. If using a key certificate, select the appropriate key certificate from the list (valid values are blank, OpsKey, OpsDrv, UIKey, and B2BHTTP). Otherwise, leave this field blank.
CA Certificates	Certificate used to verify the Web server certificate of a trading partner. These certificates must come from your PIDX trading partners and you must have previously checked them in. Required if the SSL option is Must or Optional.

8. In the Protocol Mode page, complete the following fields and click **Next**:

Field	Description
Protocol Mode	Use the default value PUT . Required.
Document	Leave this field blank.

9. In the Transport Account page, complete the following fields and click **Next**:

Field	Description
User ID	Unique ID that associates this transport with the remote system of your PIDX trading partner. Optional.
Password	Password that authenticates the user ID to the remote system of your PIDX trading partner. Optional.
Confirm Password	Password typed in the Password field. Optional.

10. Click **Finish** to update the transport record.

You are now ready to create a document exchange record.

Creating a Document Exchange Record

To describe properties of the documents and messages passed between you and your PIDX trading partner, you must create a document exchange record.

To create a document exchange record:

1. From the **Trading Partner** menu, select **Setup > Advanced > Document Exchange**.
2. Next to Create New Document Exchange, click **Go!**
3. In the New Document Exchange: Information page, complete the following fields and click **Next**:

Field	Description
Name	Name for the document exchange to create for this PIDX trading partner. Required. Note: You should use part of the company name or DUNS number in this field.
Identity	Unique ID used when you created an identity record for this PIDX trading partner. Required.

4. In the Retry Settings page, complete the following fields and click **Next**:

Field	Description
Number of Retries	Number of times that Application tries to contact this PIDX trading partner before timing out. Type the value 3 . Required.

Field	Description
Retry Interval (sec)	Number of seconds that Application waits before trying again to contact this PIDX trading partner after the previous attempt timed out. Type the value 3000 . Required.
Persist Duration (sec)	Number of seconds that a message received is kept before being passed to the integration engine. Type the value 10000 . Required.

5. In the Enveloping Properties page, complete the following field and click **Next**:

Field	Description
Protocol	The security protocol to be used. If using digital signatures to exchange PIDX messages, select SMIME from this field (if not exchanging PIDX messages, you would select None). Required for PIDX.

6. Skip this step if you are not using digital signatures to exchange PIDX messages. Otherwise, in the Security page, complete the following fields and click **Next**:

Field	Description
Encryption Algorithm	<p>Algorithm used to encrypt outbound RNIF v02.00 messages. Not used for inbound. Required if this document exchange is for the trading partner running Application and sending encrypted RNIF v02.00 messages to a trading partner. Optional.</p> <p>Supported algorithms are:</p> <ul style="list-style-type: none"> ◆ Triple DES 168 CBC with PKCS5 padding ◆ 56-bit DES CBC with PKCS5 padding ◆ 128-bit RC2 CBC with PKCS5 padding ◆ 40-bit RC2 CBC with PKCS5 padding
Signing Algorithm	<p>Algorithm used to sign outgoing PIDX messages. Required if this document exchange is for the trading partner running Application. Otherwise, use the default value. Optional.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ◆ MD5 – Message digest algorithm that verifies the integrity of data through a 128-bit message digest. ◆ SHA1 – Secure hash algorithm that verifies the integrity of data through a 160-bit (20 byte) message digest. Transmission is a bit slower than MD5; however, the larger message digest size offers a more secure data transference.
Signing Key Certificate	Key certificate used to sign outgoing PIDX messages. This certificate is a system certificate created for the trading partner running Application and it contains a private key. Select the appropriate key certificate from this field. If this document exchange is used for a trading partner other than the one running Application, use the default value. Required.

Field	Description
Signing User Certificate	Trusted certificate that contains the public key used to verify incoming digital signatures from a trading partner. If using this document exchange for a trading partner other than the one running Application, verify that None Available is selected from this field. Otherwise, select the appropriate trusted certificate from this field. Required.

7. Click **Finish** to add the document exchange record.

You are now ready to create a delivery channel.

Creating a Delivery Channel Record

You can define several delivery channels in one trading profile.

To create a delivery channel record:

1. From the **Trading Partner** menu, select **Setup > Advanced > Delivery Channels**.
2. Next to Create New Delivery Channel, click **Go!**
3. In the Information page, complete the following fields and click **Next**:

Field	Description
Name	Name for the delivery channel record to create for this PIDX trading partner. Required. Note: You should use part of a company name or DUNS in this field or use an indicator that references PIDX.
Identity	Unique ID used when you created an identity record for this PIDX trading partner. Required.

4. In the Channel Definition page, complete the following fields and click **Next**:

Field	Description
Transport	Name of the transport record you created for this PIDX trading partner. This name must match the Name field of the transport record. Required.
Document Exchange	Name of the document exchange you created for this PIDX trading partner. This name must match the Name field of the document exchange record. Required.

5. The fields in the Security page are not used to implement PIDX. Therefore, click **Next** to skip this page.
6. In the Delivery Settings page, complete the following fields and click **Next**:

Field	Description
Receipt Type	Not used to implement PIDX. Use the default value NONE . Required.

Field	Description
Receipt Signature Type	Not used to implement PIDX. Use the default value NONE . Required.
Receipt Timeout	Time-out value for receipt of expected MDNs, in seconds. Type the value 86400 in this field. Required.
Delivery Mode	Select Asynchronous HTTP . Required.
Receipt to Address	Not used to implement PIDX. Leave this field blank.

7. Click **Finish** to add the document channel record.

You are now ready to create a packaging record.

Creating a Packaging Record

To define how to build and package outbound messages to your PIDX trading partner, you must create a packaging record.

Note: You must create a Packaging record to support SIGNING and/or ENCRYPTION (and supply this information while creating the Profile record).

To create a packaging record:

1. From the **Trading Partner** menu, select **Setup > Advanced > Packaging**.
2. Next to Create New Packaging, click **Go!**
3. In the Information page, complete the following fields and click **Next**:

Field	Description
Name	Name for the packaging record to create for this PIDX trading partner. Required. Note: You should use part of a company name or DUNS in this field or use an indicator that references PIDX.
Message Parsable	Whether the message can be parsed. Ensure that No is selected from this field. Required for PIDX.

4. In the Packaging Settings page, complete the following fields and click **Next**:

Field	Description
Payload Type	<p>Payload type that describes the message format for transporting documents. Required for PIDX.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ◆ Plain Text – Payload is not signed and it is not encrypted. ◆ Signed Detached – Payload is signed with a detached signature for RNIF v1.1 and v02.00 messages. ◆ Encrypted – Payload is encrypted according to the EDIINT specifications. ◆ Signed Detached Encrypted – Payload is signed with a detached signature and then encrypted for RNIF v02.00 messages.
MIME Type	Select Application from this field. Required for PIDX.
MIME Sub Type	Select XML from this field. Required for PIDX.
Compress Data	<p>Whether to compress inbound and outbound messages, according to the ability of each trading partner to decompress and extract messages. Required for PIDX.</p> <p>Valid values (specific to PIDX v02.00 and higher) are:</p> <ul style="list-style-type: none"> ◆ None – Do not compress messages ◆ Low – Low message compression ◆ Medium – Medium message compression ◆ High – Compress all messages ◆ Default – default value <p>Note: When specifying a value in this field, consider that the value applies to all inbound and outbound messages, regardless of the message sizes. If you choose to specify the value None and you encounter a large inbound or outbound message that you want to compress, you can return to this packaging record and edit the record, specifying High in this field.</p>

5. Click **Finish** to add the packaging record.

You are now ready to create a profile record.

Creating a Profile Record

To define the roles (that is, initiator or responder of data exchange) of each trading partner exchanging PIDX data and create business processes that comply with PIDX standards, you must create a profile.

To create a profile record:

1. From the **Trading Partner** menu, select **Setup > Advanced > Profiles**.
2. Next to Create New Profile, click **Go!**

3. On the Information page, complete the following fields and click **Next**:

Field	Description
Name	Name for the profile record to create for this PIDX trading partner. Required. Note: You should use part of a company name or DUNS in this field or use an indicator that references PIDX.
Identity	Unique ID used when you created an identity record for this PIDX trading partner. Required.

4. On the Profile Definition page, complete the following fields and click **Next**:

Field	Description
Profile Type	Type of profile that must be used for data exchanged for this PIDX trading profile. Ensure that PIDX is selected. Required for PIDX.
GLN	Not used to implement PIDX. Leave this field blank.
Delivery Channel	Name of the delivery channel you created for this PIDX trading partner. This name must match the Name field of the delivery channel record. Required.
Packaging	Name of the packaging you created for this PIDX trading partner. This name must match the Name field of the packaging record. Required.
Provider	Third-party service provider name. Type PIDX (using lowercase letters). Required.

5. On the PIDX Data page, complete the following fields and click **Next**:

Field	Description
Role	Role of this PIDX trading partner. Optional. Valid values are: <ul style="list-style-type: none"> ◆ Responder – Receiving PIDX data ◆ Initiator – Sending PIDX data
RNIF Version	Version of RosettaNet Implementation Framework being used by this PIDX trading partner. Select All from this field. Required.
Location Code	Location code for this PIDX trading partner. If this profile is associated with the partner receiving a PIDX message being built and delivered by Application, the location code is used to fill in the locationID element under the messageReceiverIdentification element (inside the outbound Delivery Header). Depending on which partner initiated the PIP and the specific PIDX message that is built by Application, the location code is also used to fill in the KnownInitiatingPartner/PartnerIdentification/locationID element inside the outbound Service Header, to indicate which partner initiated the PIP. Required for RNIF v2.00.

Field	Description
Partner Location Code	The partner location code for this PIDX trading partner. If this profile is associated with the partner receiving a PIDX message being built and delivered by Application, the partner location code is to fill in the locationID element under the messageSenderIdIdentification element (inside the outbound Delivery Header). Depending on which partner initiated the PIP and the specific PIDX message that is built by Application, the partner location code is also used to fill in the KnownInitiatingPartner/PartnerIdentification/locationID element inside the outbound Service Header to indicate which partner initiated the PIP. Required for RNIF v2.00.
Classification Code	PIDX classification code. Required.
Supply Chain Code	PIDX supply chain code. Required.
Contact	PIDX trading partner contact information. Required.

- The fields in the Business Processes page are not used to implement PIDX. Therefore, click **Next** to skip this page.
- Click **Finish** to add the profile record.

You have now finished creating trading profiles and can create the appropriate contracts.

Creating PIDX Contracts

Contracts enable you to tie PIDX trading partners together to create an effective trading relationship. To enable Application to comply with PIP specifications when running business processes, and to enable PIDX-specific services to build and parse message, promote security, and send and receive outbound PIDX messages to the appropriate URLs (for example, PIDX Message Builder and PIDX Message Parser services), you must create a contract that distinguishes *each* PIP interaction involved in a business process. You can create the contracts in any order.

Your system administrator creates and maintains the contracts that are needed to set up the trading relationships with your trading partners. There are three types of contracts that the system needs when configuring for PIDX; the PIP contracts, which define the PIP settings used by PIDX business processes, and the Messaging contracts, which define the profiles to be used when building and parsing PIDX messages. You must also create a RosettaNet contract for a PIP Code for Notification of Failure (PIP 0A1) because PIDX uses PIP0A1 as defined by RosettaNet as a standard means of Notification of Failure. PIDX incorporates RosettaNet messages and PIPs.

The Contract Wizard enables you to specify information about your enterprise and your partners' enterprises, to ensure that the system can accurately process PIDX signal and 0A1 Notification of Failure messages.

You must create a PIDX contract for the PIP0A1 Notification of Failure for any other PIPs, and for the messages you will be sending to and receiving from your trading partners.

To create a contract:

- From the Administration menu, select **Trading Partner > Contracts**.
- Under Create, next to New Contract, click **Go!**

3. On the Information page, complete the following fields and click **Next**:

Field	Description
Name	<p>Descriptive name for the contract. Required.</p> <p>You should use part of a company name, an indicator that references whether this trading partner is the initiator or responder, or the type of PIP being used. For example:</p> <ul style="list-style-type: none"> ◆ If this contract is for your organization and considered the initiator sending data, type FromCompanyToTradingPartner_PIP11. ◆ If this contract is for your PIDX trading partner and considered responding to data sent, type ToTradingPartnerFromCompany_PIP11.
Start Date	<p>Start date and time of the contract. Valid value is any valid date in the format <i>yyyy-mm-dd</i>. Must be less than or equal to End Date. Default value is the current date. Required.</p>
End Date	<p>Expiration date and time of the contract. Valid value is any valid date in the format <i>yyyy-mm-dd</i>. Must be greater than or equal to Start Date. Default value is the current date. Required.</p>
Status	<p>State of the composition/negotiation process that creates the contract. Default value is SIGNED. Required.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> ◆ PROPOSED – Contract being negotiated by the parties. The first stage of negotiation. ◆ AGREED – Contract agreed upon by the parties. The next stage of negotiation. ◆ SIGNED – Contract signed by the parties. The final stage of negotiation. The contract is usable.

4. On the Contract Definition page, complete the following fields and click **Next**:

Field	Description
Production Profile	<p>Unique ID of the profile for the PIDX trading partner producing (or sending) the data. This name must match the Name field used when creating the identity record. Required.</p>
Consumption Profile	<p>Unique ID of the profile for the PIDX trading partner consuming (or receiving) the data. This name must match the Name field used when creating the identity record. Required.</p>
Business Process	<p>Not used to implement PIDX. Not Applicable should be selected.</p>

5. On the Extensions page, select **PIDX** and click **Next**.

6. You must specify PIDX extensions if you are creating two PIP contracts. For example, if the company is initiating and responding to PIP11, you must create a contract to initiate P11 and one to respond to P11.

On the PIDX Extensions page, complete the following fields and click **Next**:

Field	Description
PIP Code	PIP settings used by the PIDX business processes. Select the appropriate code from the list. Required.
PIP Version	Version of PIP to trade. Valid values are listed, based on the PIP code selected. Required.
PIDX Version	PIDX version number to trade with your PIDX trading partner. Required. Valid value is 1.3.
PIP Role	PIP role for company that uses Application and is trading this PIP. Valid values are Buyer and Seller. Required.
Global Usage Code	Whether to use this contract in test or production mode. Required.

7. On the PIDX Message Building Configuration page, complete the following fields and click **Next**:

Note: Message building options are only available if you select PIDX Version 1.3 on the PIDX Extensions page.

Field	Description
Content Transfer Encoding	Encoding method for the message. Required. Valid values are: <ul style="list-style-type: none"> ◆ None ◆ Base64 (default) ◆ Quoted - Printable
Encode binary message parts only	Select to encode binary message parts only. If not selected, all message parts are encoded. Optional.
Include MIME version header	Select to include the MIME version in the HTTP header. If not selected, no MIME version information is included. Optional.

8. On the PIP Definition page, complete the following fields and click **Next**:

Caution: You should select a Sender Business Process and Responder Business Process only on this page and accept all other default values, which are based on PIP standards. No additional changes need to be made to these fields unless you require customization.

Field	Description
Sender Business Process	PIP private initiating process for the sender business process. Select the appropriate business process from the list. Required.

Field	Description
Responder Business Process	PIP private responding process for the responder business process. Select the appropriate business process from the list. Required.
Response Mode	Mode in which to respond to a PIP. Required. Valid values are: <ul style="list-style-type: none"> ◆ Synch – Synchronously ◆ Asynch – Asynchronously
Non-Repudiation Required?	Receiving trading partner cannot deny having received a message. To disable this feature, clear the check box. Optional.
Time to Acknowledge	Amount of time, in minutes, within which you must receive an acknowledgement. Valid value is four numeric characters. Optional.
Time to Acknowledge Acceptance	Amount of time, in minutes, within which you must accept an acknowledgement. Optional.
Time to Perform	Time in which the PIP private responding process should respond to the business process. Optional.
Retry Count	Application continues to retry contacting the trading partner for the specified number of times. Optional.
Is Authorization Required?	Instructs Application to verify the presence of appropriate contracts for this transaction, to ensure that your trading partner is authorized to send the message to you. This feature is automatically enabled and cannot be disabled.
Non-Repudiation of Origin and Content	Originating trading partner can not deny having originated and sent a message. To disable this feature, clear the check box. Optional.

9. On the PIP Steps page, review the steps you have selected to run using the PIP and click **Next**.
10. Click **Finish** to add the contract. Repeat steps 1 - 10 to create a contract for the trading partner who is either initiating and responding to a PIP, if necessary.

Creating PIDX Maps

Overview

The Map Editor enables you to map PIDX documents. The Map Editor generates a file layout for you using the components and message types that you select. The Map Editor-generated PIDX map consists of groups, records, composites, and fields that are comparable to parameters that are defined by PIDX.

Note: You need to download the Map Editor component to use it.

Application's PIDX implementation conforms to the rules of the XML language 1.0 specification, as published by the World Wide Web Consortium (W3C). However, to be more flexible, Application diverges slightly from the W3C base 1.0 XML specification. The Application implementation enables you to do the following with XML:

- ◆ Specify the number of times that a group can repeat.
- ◆ Specify the number of times an element in a mixed group can repeat.
- ◆ Repeat an element (with a structure different from the structure of the original element) in a different part of the document.

Map Editor allows you to modify the map components by using the Deactivate, Promote, Split, Copy, Cut, and Paste functions.

You can create a map for all PIDX Standards Release messages that are preloaded when you download the Map Editor. This includes the following:

- ◆ 21 schema (.XSD) files—with a total of 11 messages available for processing
- ◆ 2 common library schema (.XSD) files





The 11 schema (.XSD) files that are available for processing are as follows:




Description	PIDX message
Field Ticket	P11
Field Ticket Response	P12
Invoice	P21
Invoice Response	P22
Order Create	P31
Order Change	P32

Description	PIDX message
Order Response	P33
Quote Request	P41
Quote	P42
Quote Notification	P43
Request Requisition Return	P51

PIDX Components in the Map Editor

The following table lists the components that make up the PIDX layout in the Map Editor, the icons that represent the components, and descriptions of the components.

Component	Icon	Description
PIDX root element		The <i>PIDX root element</i> represents the PIDX document that Application is mapping. The PIDX root element is a looping structure that contains elements and content particles that repeat in sequence until either the group data ends or the maximum number of times that the loop is permitted to repeat is exhausted. The root element cannot be referenced by standard rules or links.
Element		An <i>element</i> contains related elements and content particles. In addition, an element can contain one pcd data and one attribute container. These objects repeat in sequence until either the element data ends or the maximum number of times that the loop is permitted to repeat is exhausted. A repeating element that contains another repeating element corresponds to a nested looping structure. The PIDX Element object cannot be referenced by standard rules or links.
Abstract element		An <i>abstract element</i> is an inconcrete element from an XML schema (for example, the term “appliance” may be considered an abstract element while “dishwasher” is a concrete one). An abstract element must be substituted with a non-abstract element for a map to be successfully compiled.
Content particle		A <i>content particle</i> contains related subordinate objects that define either a choice, a sequence, or an all. A content particle can contain only one pcd data. If specified, these objects can repeat in sequence until either the content particle data ends or the maximum number of times that the loop is permitted to repeat is exhausted. If you create a content particle that is subordinate to another content particle, the content particle corresponds to a nested looping structure (a loop within a loop). A content particle cannot be referenced by standard rules or links.

Component	Icon	Description
Pcdata		<p>A <i>pcdata</i> contains character data in a PIDX document. Only one <i>pcdata</i> can be defined per element or content particle. Application automatically names the <i>pcdata</i> with the name of the parent element or content particle.</p> <p>When a <i>pcdata</i> has a link performed against it, a red check mark appears over the <i>pcdata</i> icon.</p> <p>When a <i>pcdata</i> contains an extended rule or a standard rule, an asterisk appears to the right of the <i>pcdata</i> icon.</p>
Attribute container		<p>An <i>attribute container</i> does not correspond to an XML function. Application uses attribute containers to contain the attributes of an element. The attribute container has no properties. When you create the first attribute of an element, the Map Editor automatically creates an attribute container object. An element can have only one attribute container, but the attribute container object can enclose many attribute objects.</p>
Attribute		<p>An <i>attribute</i> specifies information associated with an element that further defines the element. The attribute is located within an attribute container. Attributes do not have to occur in sequence in the input data.</p> <p>When an attribute has a link performed against it, a red check mark appears over the attribute icon.</p> <p>When an attribute contains an extended rule or a standard rule, an asterisk appears to the right of the attribute icon.</p>

Creating a PIDX Map

When you create a new map, you can either manually create a PIDX layout or you can use a wizard that creates a layout for you based on the PIDX standard. The wizard saves you time and effort and minimizes the risk of having an invalid standard format.

To create an PIDX map:

1. From the Map Editor **File** menu, select **New**.
2. In the **New Map Wizard**, complete the questions in the first window and click **Next**.

Note: Be sure that **Sterling Integrator** is selected in the **What kind of map are you creating** list.

3. If you are translating from PIDX, in the Input Format window (**Create a New Data Format Using this Standard** option) select **PIDX** and click **Messages**. If you are translating from another format, select that format and continue to the next screen.
4. Select the version of the standard and the message you want to use, select **Build codelists for enumerated attributes**, and click **Next**.
5. Clear the checkboxes next to any subelements that you do not want included in the map and click **Next**.

Note: If you clear any checkboxes your map will not conform to the PIDX standard.

6. Click **Finish** to load the message.

7. Click **Next** to select the Output Format.
 8. If you are translating to PIDX, in the Output Format window (**Create a New Data Format Using this Standard** option) select **PIDX** and click **Messages**. If you are translating to another format, select that format and continue to the next screen.
 9. Select the version of the standard and the message you want to use, select **Build codelists for enumerated attributes**, and click **Next**.
 10. Clear the checkboxes next to any subelements that you do not want included in the map and click **Next**.
- Note:** If you clear any checkboxes your map will not conform to the PIDX standard.
11. Click **Finish** to load the message.
 12. Click **Finish**. The Map Editor displays the new map in the Map Editor window.

Validating PIDX Service Content Against a DTD or Schema

Application supports validating PIDX service content against either a DTD or an XML schema, since many new PIPs are XML schema-based.

Note: You must check the schemas that you will use for validation into the Application schema repository. See *Checking In Schemas* for more details.

Searching for PIDX Correlations

Correlation searches rely on name-value pairs that define the specific data items you are trying to locate. These defined name-value pairs are tracking points for business processes and documents. The Correlation search feature offers the following additional benefits:

- ◆ You can receive the results of search queries more quickly.
- ◆ You can further refine correlation searches by specifying a start and end date/time range.
- ◆ You can further refine PIDX correlation searches by specifying PIDX-specific criteria such as PIP Code and PIP Version.

To search for PIDX correlations:

1. From the **Administration** menu, select **Business Processes > Advanced Search > Correlation**.
2. Select the start and end dates and times within which the correlated data you are searching for can be located. Using the following formats, type the date and time range, and select **AM** or **PM**:
 - ◆ Date – MM/DD/YYYY
 - ◆ Time – HR:MN:SC

These fields default to a range of the last 24 hours.
3. In the **Type** field, select **ANY**, **Document**, or **Business process**.
ANY is the default value. Selecting Document or Business process further targets your returned results.
4. In the **Location** field, select one of the following options:
 - ◆ **Live Tables** – Display correlations for live (active) instances.
 - ◆ **Restored Tables** – Display correlations for instances restored from an offline location.
5. To refine your search to correlations you specify (rather than all generated correlations), select **Standard** from the Name list.
6. In the Value fields, type **PIDX** as the value that corresponds with the Standard name, and click **Go!**
This will enable you to search for PIDX documents and business processes.

Note: Alternatively, you can search by standard RosettaNet correlation keys such as the following:

- ◆ IdentityID
- ◆ PartnerID
- ◆ PIPName
- ◆ PIPCode
- ◆ PIPVersion
- ◆ RNIFVersion
- ◆ PIPInstanceID
- ◆ IsInitiator

- ◆ PIPStepNumber
 - ◆ PIPStepName
 - ◆ PIPStepDateTime
 - ◆ PIPStepDocumentID
 - ◆ PIPStatus
7. To access your search results, select the number link that indicates the number of document and/or business process matches found. The document page opens to display the documents that matched the search criteria you selected.