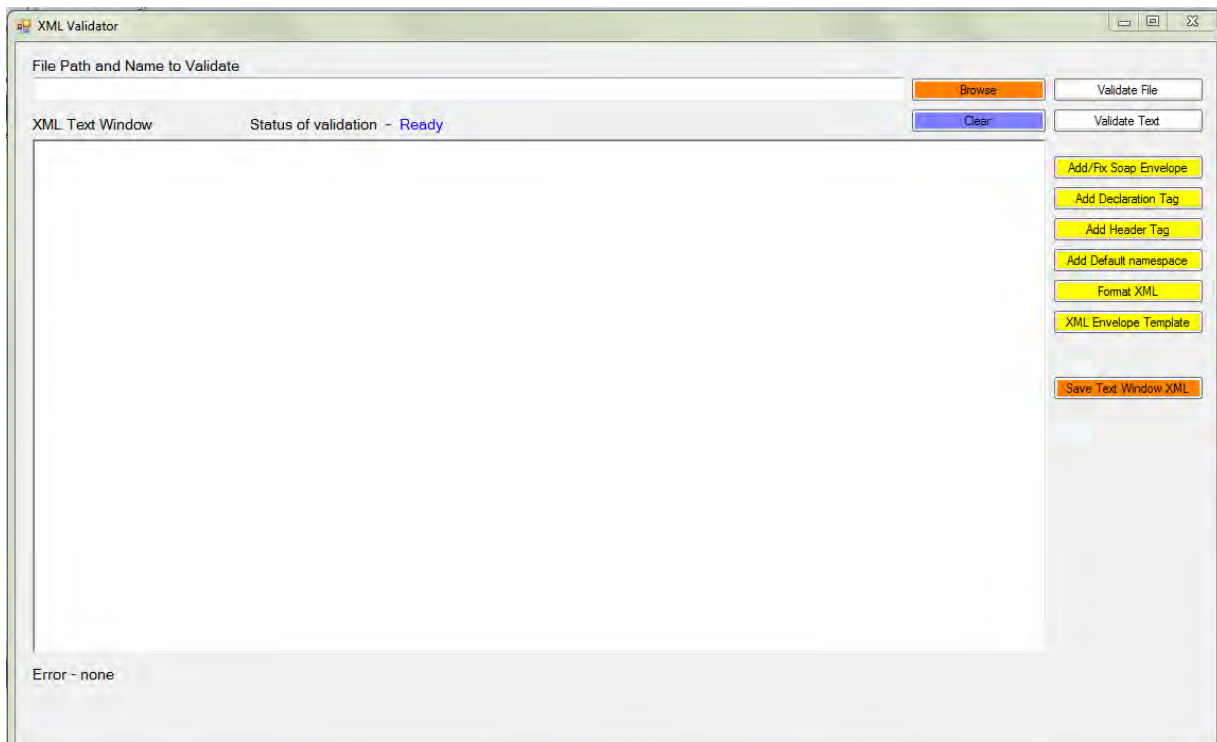


MARKETS GATEWAY XML Validating Tool

Overview of the XML tool

The Markets Gateway XML Validating Tool was designed to assist with validating XML code for use with the Markets Gateway QueryRequest, SubmitRequest, and QueryByTransaction tags. The XML tool's purpose is to evaluate XML code to determine if it is well formed and the syntax of the XML code is correct. The XML tool will not evaluate any Markets Gateway conditions or data such as if the Market is closed or if a unit does not have a pricebased schedule available etc...

The XML tool can import an XML or text file onto the XML Text Window or have the XML code pasted to the XML Text Window. Once the XML code is in the XML Text Window, the XML code can be manipulated and corrected as well as formatting the code where all the XML code is on one line. Once the XML code is in its desired format, the XML code can be saved out in an XML file or copied and pasted from the XML Text Window to a desired location. The Markets Gateway XML Validating Tool adheres to the formats specified in the External Interface Specification Guide for Markets Gateway found on the markets & operations -> PJM Tools -> Markets Gateway webpage. Specific examples of the namespaces validated by this tool can be viewed in the Namespace Examples section at the end of this document.

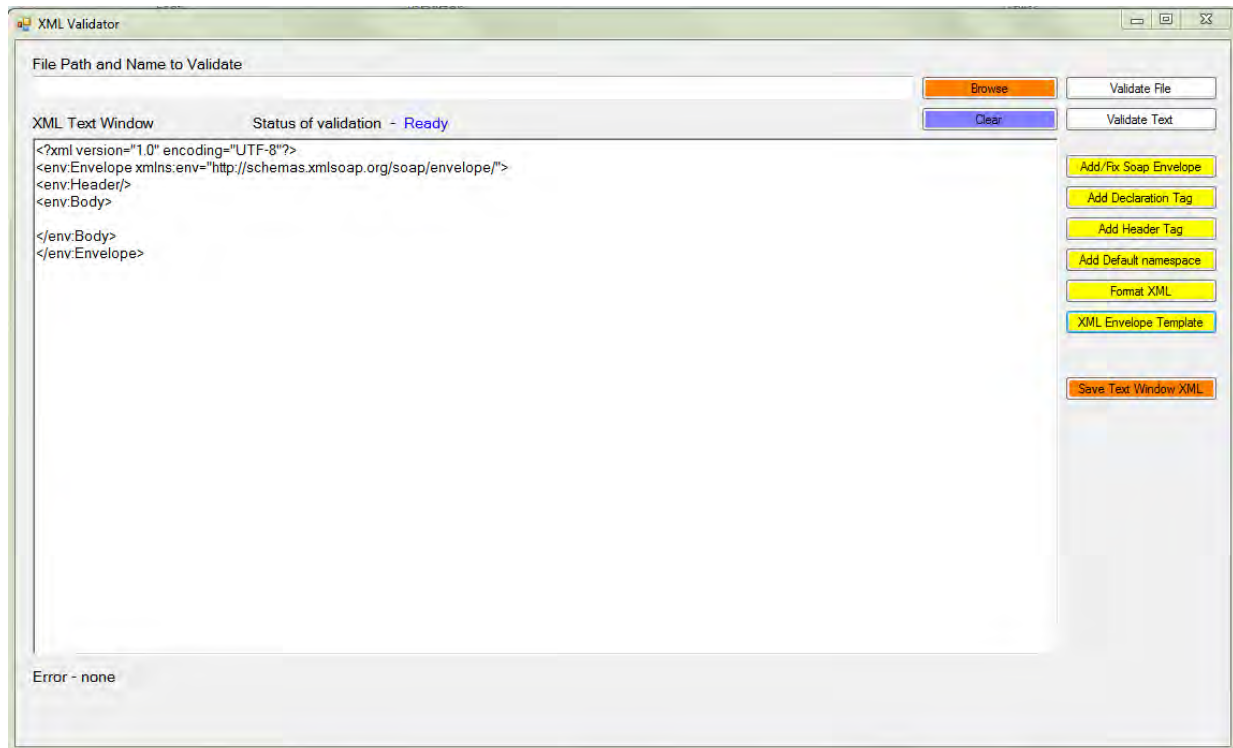


Preparing the XML Validator tool for use

Download the Application

- You will need to click on the link provided on the Markets Gateway web-site to download the *MGXML Validator.exe* application to a folder on your local machine.
- You will also need to download the associated *mg-xml-schema.xsd* contained within the same “Markets Gateway Tools” section. This file **MUST** be placed and reside in the same folder as the downloaded - *MGXML Validator.exe* application.
- You will need to have the ability to run .NET applications from your machine which requires the .NET framework.

Using the XML tool



Browse button

The XML tool is designed to work on the XML code in the XML Text Window. The XML code can be imported from a file located on the user's computer by using the "Browse" button to locate the XML or text file. The XML file location will be displayed in the "File Path and Name to Validate" text box as well as populating the XML Text Window with the XML code in the file. If there was any text in the XML Text Window it will be cleared out and repopulated with the XML code from the file selected.

Validate File or Validate Text buttons

Once the XML code is loaded, the "Validate File" or "Validate Text" button can be pressed to evaluate the XML code. The "Validate File" button will evaluate the XML code directly in the file following the path and name in the "File Path and Name to Validate" text box. The button will turn Green if the XML code is valid or Red if the XML code is not valid.

The "Validate Text" button will evaluate the XML code in the XML Text Window. The button will turn Green if the XML code is valid or Red if the XML code is not valid. Only one of the buttons will be colored which will indicate which button was pressed last. The "Validate File" button can be pressed after the XML code in the XML Text Window is modified to view the original error as it evaluates the XML code in the file, not the XML Text Window.

Note that the XML code needs to be formatted with the Declaration, Envelope, Header, and Body tags on separate lines in order for the XML tool to evaluate the XML code. The user can view this format by pressing the "XML Envelope Template" button.

Clear button

The "Clear" button is used to clear out the XML Text Window and the "File Path and Name to Validate" textbox from any text.

Status of Validation message

The "Status of Validation" message will indicate "Ready" when a new file was loaded or the XML Text Window was cleared. The "Status of Validation" message will indicate "XML is valid" if the XML code is valid, "XML seems valid – See Information" if the XML code does not have the <Header/> tag but appears to be valid, or "ERROR" if the XML code has an error. Any Information or Error messages will be listed at the bottom of the XML tool under the XML Text Window.

The XML tool may not catch all the validation errors of XML code that does not contain the <Header/> tag. It is recommended to always use a <Header/> tag when evaluating XML code.

Error message

The “Error” message is located below the XML Text Window and will provide any Information or Errors as a result of evaluating XML code. The message “Error – none” is displayed when the “Clear” button or the “Browse” button are utilized or if there is no error when evaluating the XML code. When there is an error, the error message will provide a description of the error, in most cases the line of XML code the error is associated, and the line of XML code in the XML Text Window will be highlighted yellow.

Add/Fix Soap Envelope button

The “Add/Fix Soap Envelope” button is used to add the Declaration tag, Envelope tag that includes the Soap namespace, the Header tag, the Body tag, the closing Body tag, and the closing Envelope tag if they are missing. This button is useful if the XML code in the XML Text Window does not contain these tags and will then be wrapped correctly by these tags. In order for this button to wrap the XML code, the XML code in the XML Text Window must contain the QueryRequest, SubmitRequest, or QueryByTransaction opening and closing tags.

If the wrapper tags do exist but are not formatted correctly, this button will replace the Envelope wrapper with the correct tags and format with the basic XML wrapper. This would be the same code used when the “XML Envelope Template” button is pressed but with the Query or Request XML code incorporated.

Add Declaration tag button

The “Add Declaration tag” button is used to add the first line of XML code called the Declaration tag `<?xml version="1.0" encoding="UTF-8"?>` if it is missing or the format of the tag is incorrect in the XML code in the XML Text Window.

Add Header tag button

The “Add Header tag” button is used to add the `<Header/>` tag to the XML code in the XML Text Window right before the opening Body tag.

The XML tool may not catch all the validation errors of XML code that does not contain the `<Header/>` tag. It is recommended to always use a `<Header/>` tag when evaluating XML code.

Add Default namespace button

The “Add Default namespace” button is used to add the Default namespace `xmlns=http://emkt.pjm.com/emkt/xml` to the QueryRequest, SubmitRequest, or

QueryByTransaction tag. This button is useful if the Default namespace is missing altogether or the format of the namespace is incorrect in the QueryRequest, SubmitRequest, or QueryByTransaction tag.

Format XML button

The “Format XML” button is primarily used to format XML code that has been written on one line. When the user utilizes this button, the XML code will be formatted to list each tag on a separate line. The XML tool needs the XML code in this format to evaluate the XML code. However, the opening and closing tags that contain text between them will be listed on the same line. In addition, this will assist the user in finding errors in the XML code.

XML Envelope Template button

The “XML Envelope Template” button is used to clear out the XML Text Window and populate the window with a Declaration tag, Envelope tag that includes the Soap namespace, the Header tag, the Body tag, the closing Body tag, and the closing Envelope tag. The user can use this button to add the template tags and then copy and paste XML code from a client between the Body tags. The XML Text Window will be populated as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
<env:Header/>
<env:Body>

</env:Body>
</env:Envelope>
```

Save Text Window XML button

The “Save Text Window XML” button is used to save out the XML code that currently exists in the XML Text Window to a location on the user’s computer. This can be useful to the user in order to save corrected XML code in order to pass on to another person.

Namespace Examples

The QueryRequest tag can be replaced with SubmitRequest in these examples.

#1

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
<env:Header/>
<env:Body>
<QueryRequest xmlns="http://emkt.pjm.com/emkt/xml">

</QueryRequest>
</env:Body>
</env:Envelope>
```

#2

```
<?xml version="1.0" encoding="UTF-8" ?>
<Envelope xmlns="http://schemas.xmlsoap.org/soap/envelope/">
<Header/>
<Body>
<QueryRequest xmlns="http://emkt.pjm.com/emkt/xml">

</QueryRequest>
</Body>
</Envelope>
```

#3

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<env:Header/>
<env:Body>
<QueryRequest xmlns="http://emkt.pjm.com/emkt/xml">

</QueryRequest>
</env:Body>
</env:Envelope>
```

#4

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns="http://emkt.pjm.com/emkt/xml"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<env:Header/>
<env:Body>
<QueryRequest >

</QueryRequest>
</env:Body>
</env:Envelope>
```

#5

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
```

```
xmlns:mkt="http://emkt.pjm.com/emkt/xml"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<env:Header/>
<env:Body>
<mkt:QueryRequest >

</mkt:QueryRequest>
</env:Body>
</env:Envelope>
```

#6

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:mkt="http://emkt.pjm.com/emkt/xml">
<env:Header/>
<env:Body>
<mkt:QueryRequest >

</mkt:QueryRequest>
</env:Body>
</env:Envelope>
```