



PowerTools Platform API Developer Guide

This guide is intended to provide some basic technical information for developers to use to configure applications to submit data to Tenaska Power Services Co's *PowerTools Platform* API.

1. Connection:

Connection to the API is achieved via an https request to our server using a defined URL convention. The address format is as follows:

`https://api.powertoolsplatform.com/Submit/<rootName>/<endpointName>/<transactionId>`

- <rootName> is the name of one of our configured power markets / ISOs, etc. An example is "MISO".
- <endpointName> specifies the type of data being submitted, e.g. "ScheduleData". Endpoint name(s) will be provided to you for the types of submissions you will be configuring.
- <transactionId> is an optional Globally Unique Identifier (GUID) parameter that can be used to track the status of your submission. If a value is not provided then one will be created for you. If you do provide a transactionId with your submissions, you must only provide it once. Do not provide the same GUID for multiple calls to the API.

Examples of valid URLs using the above examples are:

`https://api.powertoolsplatform.com/Submit/MISO/ScheduleData/`

and

`https://api.powertoolsplatform.com/Submit/MISO/ScheduleData/ADD1D95B-4502-4BDA-B1C1-C79430241318`

2. Security:

The API is made secure by providing a username / password combination in the https request. A username and password will be provided to you which you will need to include with each call to the API. You will provide this information inside of an http "Authorization" header on the actual request in the following format

`<username>:<password>`

(Note the colon ":" character between the 2 values, this must be present in the Authorization header.)

An example of how to create a secure http request programmatically is presented below using C#:

```
string Url = "https://api.powertoolsplatform.com/submit/miso/scheduledata/";  
var request = WebRequest.Create(Url);  
request.ContentType = "text/xml";  
request.Method = "POST";  
request.Headers.Add(HttpRequestHeader.Authorization, "myUser:myPassword");
```

3. Data:

The data you submit as the body of your request should conform to the XML schema document (XSD) that is provided to you for your endpoint.

XML Tips:

-All Provided XSDs have a <PtpPackage> element as the root. This element will need to include the following namespace declarations:

```
<PtpPackage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  
xmlns:xsd="http://www.w3.org/2001/XMLSchema"  
xsi:schemaLocation="http://schema.PowertoolsPlatform.com/<rootName>/<endpointName>  
http://schema.PowertoolsPlatform.com/<rootName>/API/<endpointName>.xsd"  
xmlns="http://schema.PowertoolsPlatform.com/<rootName>/<endpointName>">
```

-All Date/Time attributes in the XML-encoded data need to be expressed in UTC and formatted in ISO 8601 format, including a trailing "Z". For example: **2017-01-01T15:00:00Z**

-The <Header> element requires a child <Security> element with a **SessionID** attribute. This is typed as a Globally Unique Identifier (GUID). The value is not currently used by the API but is required to validate the XML. Any GUID can be provided. For example:

```
<Security SessionID="00000000-0000-0000-0000-000000000000" />
```

4. Result:

When you submit data the API will respond with XML that will conform to the schema located in:

<http://schema.powertoolsplatform.com/Common.xsd>