Build PI Applications Faster with PI Web API Client Libraries

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Agenda

• What is PI Web API?
• What are PI Web API client libraries?
• Demo .NET Core Console Application
• Client libraries for other platforms
• Q/A
What is PI Web API?
PI Web API - A suite of RESTful services for accessing and manipulating data in your PI System
Online Tutorial

Getting Started with the PI Web API

The PI Web API is a RESTful interface to the PI system. It gives client applications real-time access to data over HTTPS. This getting started guide starts with an overview of the constructs that you use the API, moves on to examples in the form of sample requests and a simple discussion of some more specific topics that may enrich your understanding of the API.

REST Principles

REST stands for ‘representational state transfer.’ In the context of the PI Web API, this means:

- **Stateless**
  
  The PI Web API is stateless. This means that the service retains no observable knowledge of each request. Each request is an independent transaction between the client and the server. On
Here is what your TO DO List looks like with PI Web API:

- Learn how to make HTTP requests.
- Write the URL for each request.
- Write the body message for POST/PUT/PATCH HTTP requests.
- Learn how to convert JSON string to objects.
- Add the authentication header
- Write code without Intelissense
What are PI Web API client libraries?
What are PI Web API client libraries?

- Generated using Swagger specification
- Available in PI Web API 2017+
- All PI Web API methods available on the server-side are also available on each client library.
Understanding the PI Web API client library for .NET Core

PI Web Client Library takes care of your check list under the hood
Demo .NET Core Console Application

- Installation
- Documentation
- Example 1 - Authentication
- Example 2 - Retrieve basic PI Objects: PIElement, PIAttributes
- Example 3 - Handling exceptions
- Example 4 - Updating PI Point description
- Example 5 - Retrieve data in bulk
- Example 6 - Update data in bulk
- Example 7 - PI Web API Batch
- Examples 8 and 9 - Web ID 2.0 client generation
- Example 10 - PI Web API Channels
A Full Web ID 2.0

```
"WebId": "F1EmDqDBIoBNHOerqeqJodtALAh_fRZ2eH5xGWZgAVXQKgBgUkVTVFVOSVRcUOFXWUVSXEVMRU1FTlQx"
```

- **WebId** type, version
- Marker (Element)
- **F1EmDqD5...**
  - ServerID (22 chars long)
  - AF Object ID (22 chars long)
  - underscores (_) and dashes (-) must be replaced with slash (/) and plus (+), respectively, before Base64 decoding
  - Object’s Name (remaining string)
  - we have to add this because Base64 strings must be lengths in multiples of 4 chars before decoding
- **DqD5loBNHOerqeqJodtALA ==**
- **h/fRZ2eH5xGWZgAVXQKgBg ==**
- **UkVTVFVOSVRcUOFXWUVSXEVMRU1FTlQx**
Demo
PI Web API client libraries for other platforms
PI Web API client libraries for other platforms

- .NET Standard
- .NET Framework (PI Web API Channels)
- VBA
- PHP
- Java and Android
- jQuery
- AngularJS
- Angular 5
- R
- Python

https://pisquare.osisoft.com/community/developers-club/blog/2017/11/01/pi-web-api-client-libraries-already-released
Summary & Benefits

1. The client libraries automatically:
   - Generate the URL for each request.
   - Make the HTTP requests.
   - Add the authentication header.
   - Convert JSON string to objects

2. Be more productive by write code faster (less code is required) and easier (all methods are already available).

3. Some platforms support Intellisense!
Contact Information

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