

PJM RESTful API for Authentication

PJM Interconnection

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Purpose

The purpose of this document is to give an overview of PJM RESTful API for authentication. This API is specifically designed so that any end user can write a custom client to interface with participant facing applications that are secured by PJMs new Single Sign On (SSO) solution.

PJM provides this specification to aid PJM customers in building an external interface to PJM applications. PJM will provide assistance to customers seeking to understand or clarify details in this specification. However, due to the customizable nature of this external interface and the varied environments in which PJM customers will implement it, PJM is unable to provide application support for these customer-built external interfaces.

System Requirements

All required software will either be provided by PJM or available for download from <http://www.oracle.com> or a vendor of your choice.

- A reliable internet connection
- Any programming language that provides support for
 - The Http protocol
 - Domain data modelled using JSON

Release History

Release	Date	Description
1.0.0	May 15, 2015	Initial Release including BulletinBoard, CustomerOutages, GasPipeline, Messages.
1.0.1	September 4, 2015	Updated cookie name
1.0.2	October 23, 2015	Included Production readiness information and examples
1.0.3	November 20, 2015	Updated supported applications
1.0.4	August 19, 2016	Added usage requirements

Usage

The API provides the ability to

1. Authenticate (log in) to the SSO.
2. Access secured applications
3. Log out of the SSO

The following sections will describe how to perform these two functions. Please note that all examples are provided in curl but can be replicated with any programming language that supports the http protocol and can parse JSON responses.

The urls/resources provided are based on those available in the PJM sandbox environment.

Production readiness urls/resources will be provided in this format below each Sandbox example. Production urls/resources will not be live until November 2, 2015. Differences will be noted in **bold font**.

Authentication

This process allows the remote client to authenticate to the SSO using valid credentials. Upon successful authentication, an authentication token is presented to the user which is then used to gain access to secured applications.

Example Execution

```
curl --request POST --header "X-OpenAM-Username:username" --header "X-OpenAM-Password:password" --header "Content-Type:application/json" --data "{}" https://ssotrain.pjm.com/access/authenticate/
```

Production Example:

```
curl --request POST --header "X-OpenAM-Username:username" --header "X-OpenAM-Password:password" --header "Content-Type:application/json" --data "{}" https://sso.pjm.com/access/authenticate/
```

Parameter Details

The table below describes the http headers in detail.

Http Header	Description	Required/Optional
X-OpenAM-Username	PJM account username from CAM/Account Manager.	Required
X-OpenAM-Password	PJM account password from CAM/Account Manager.	Required
Content-Type	The type of content being posted	Required

The response is as follows:

```
{ "tokenId": "AQIC5w_TEXT_REMOVED_NTcy*", "successUrl": "/openam/console" }
```

Access secure applications

Once authenticated, the remote client can interact with any application secured by the new SSO as follows.

Example Execution

```
curl --request POST --header "Cookie: pjmauthtrain=AQIC5w_TEXT_REMOVED_NTcy*" --header "Content-Type:text/plain" --data "some-file.csv" \ https://inschedtrain.pjm.com/inschedule/rest/secure/upload/file/somefile.csv/
```

```
curl --request GET --header "Cookie: pjmauthtrain=AQIC5w_TEXT_REMOVED_NTcy*" https://inschedtrain.pjm.com/inschedule/rest/secure/download/csv/contracts?start=05-01-2015&stop=05-02-2015/
```

Production Example:

```
curl --request POST --header "Cookie: pjmauth=AQIC5w_TEXT_REMOVED_NTcy*" --header "Content-Type:text/plain" --data "some-file.csv" \ https://insched.pjm.com/inschedule/rest/secure/upload/file/somefile.csv
```

```
curl --request GET --header "Cookie: pjmauth=AQIC5w_TEXT_REMOVED_NTcy*" https://insched.pjm.com/inschedule/rest/secure/download/csv/contracts?start=05-01-2015&stop=05-02-2015/
```

Parameter Details

The table below describes the http headers in detail.

Http Header	Description	Required/Optional
Cookie	This header is a reference to the authenticated token the client will use for all interactions with PJM secured applications while the session is active. In the training environment, the name of this cookie is pjmauthtrain . In the production environment, the name of this cookie is pjmauth .	Required
Content-Type	The type of content being posted	Optional

Logout

This process allows the remote client to terminate an active session with the SSO by logging out of the system.

Example Execution

```
curl --request POST --header "Cookie: pjmauthtrain=AQIC5w_TEXT_REMOVED_NTcy*" --header "Content-Type:application/json" --data "{}" https://ssotrain.pjm.com/access/logout/
```

Production Example:

```
curl --request POST --header "Cookie: pjmauth=AQIC5w_TEXT_REMOVED_NTcy*" --header "Content-Type:application/json" --data "{}" https://sso.pjm.com/access/logout/
```

Parameter Details

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Cookie	<p>This header is a reference to the authenticated token the client will use for all interactions with PJM secured applications while the session is active. In the training environment, the name of this cookie is pjmauthtrain.</p> <p>In the production environment, the name of this cookie is pjmauth.</p>	Required
Content-Type	The type of content being posted	Required

Supported Applications/Data Connection Policy

As PJM secures each application in its portfolio they will be designed to use this RESTful API. Each supported application will be listed below and the list will grow as more applications are moved over to the new SSO system.

Application	Data Connection Rate
BulletinBoard	Data connections should not exceed 4 per second
CustomerOutages	Data connections should not exceed 2 per second
FTR Center	Data connections should not exceed 30 per second
GasPipeline	Data connections should not exceed 2 per second
Messages	Data connections should not exceed 4 per second
Markets Gateway (eMKT replacement)	Data connections should not exceed 30 per second
InSchedule	Data connections should not exceed 6 per second
ExSchedule	Data connections should not exceed 20 per second
PowerMeter	Data connections should not exceed 9 per second
Emergency Procedures	Data connections should not exceed 20 per second