Step-by-Step REST Examples for CBL Calculations

Contents

About this Document

The purpose of this document is to provide examples of the web service functionality available for calculating and retrieving CBL data for Settlements and Registrations.

A calculated CBL is required to complete a Settlement or an RRMSE test for an Economic Registration.

The information is provided for learning and demonstration only and does not represent actual settlements or other factual event or account information.

An associated collection of sample XML files is available for download on the DR Hub home page.

Prior to calculating or downloading CBL results, related meter data must be uploaded to DR Hub for the associated entity to be calculated. Please reference the Step by Step Meter Data documentation for uploading Meter Data.

The below examples are demonstrated using the PJM provided CLI tool.

A note on uploading files to DR Hub. There are numerous approaches to uploading files to our RESTful web service, however we will demonstrate using the approach found in the PJM provided CLI tool. When uploading files to DR Hub, the file must be attached to the request using a http compliant header form consistent with the multipart/form-data format. How file uploads are achieved is a function of the tools available to the user and the extent to which automation is required in the enterprise.

Release History

Release	Date	Description
1.0.0	July 14, 2016	Initial Document Created
2.0.0	November 8, 2016	November 17, 2016 Updated for Train Release.

Calculating the CBL for a Settlement

This request calculates the CBL for a specific settlement. Prior to executing be sure the appropriate Meter Data associated with the settlement has been uploaded.

The settlement calculation request requires a simple file upload which initiates the request by Settlement Id. Below is an example of the upload format used. Please refer to the PJM CLI documentation on the DR Hub home page for more information on uploading files to DR HUB.

The Settlement Calculation file Upload format:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
<settlementId>1445341</settlementId>
</ns2:cblCalculation>
```

With the file formatted and saved in the upload directory, create the request to calculate the CBL for this Settlement . Add the below to the PJM CLI command file. Comment other actions using "REM" at the beginning of the line to avoid undesired processing.

PJM CLI Command File: Required Authentication via CLI

%CLIENT% -s %APP_URL% -a /rest/secure/upload/cblcalculation/settlement/execute/ -file .\upload\settlementCalc.xml

When complete, a response will be returned with details about the type and status of the calculation request. Here is an example response. Note Valid As Of Date. You will have 60 minutes after this date/time to submit the settlement.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
    <settlementId>1445341</settlementId>
    <cblMethod>THREE_DAY_TYPE_SAA</cblMethod>
    <status>Successful</status>
    <validAsOfDate>2016-11-10T09:18:38.000-05:00</validAsOfDate>
```

```
    <userId>MYCSP</userId>
    <summary>CBL Calculation Successful</summary>
</ns2:cblCalculation>
```

Retrieve a Settlement Calculation by Id

This request returns the CBL results for a settlement calculation. The response will include details of the settlement calculation data and a summary of the results. The file will be downloaded in xls format. If results are unavailable for a specific settlement CBL request, a zero byte xls file will be returned.

The request format is.

PJM CLI Command File: Required Authentication is completed via the CLI

REM Download Settlement Calculation Results by Settlement ID

%CLIENT% -s %APP_URL% -a /rest/secure/download/cblcalculation/settlement/**1445341**

Below is a sample of the CLB Calculation results downloaded. The associated Meter Data is attached to the document as a separate worksheet.

	A	B	C	D	E	F	G	H
1								
2	CBL Baseline Report							
3	Registration	SRH 2013-06 E						
4	Registration ID	12558						
5	Results	Baseline and reduction calculated successfully						
6	Method	Standard (WD high 4 of 5, Sat, Sun/Hol high 2 of 3) with Symmetric Additive Adjustm						
7	Updated	08/15/2016 11:20						
8								
9								
10	Event Date	Start HE	End HE		HE1	HE2	HE3	HE4
11	07/15/2016	15	19		N	N	N	N
12								
13	Evaluated Dat	Status	Note	Type	HE1	HE2	HE3	HE4
14	07/15/2016	Event Day		Friday	1450	1446	1434	1
15	07/14/2016	Included		Thursday	1450	1446	1434	1
16	07/13/2016	Included		Wednesda	1450	1446	1434	1
17	07/12/2016	Included		Tuesday	1450	1446	1434	1
18	07/11/2016	Included		Monday	1450	1446	1434	1
19	07/10/2016	Wrong Day Type		Sunday				
20	07/09/2016	Wrong Day Type		Saturday				
21	07/08/2016	High/Low Day		Friday				
22								
23	Results Date	Name			HE1	HE2	HE3	HE4
24	07/15/2016	RawBaseline			1450	1446	1434	1
25	07/15/2016	Adjustments						
26	07/15/2016	Baseline			1450	1446	1434	1
27	07/15/2016	Measurement			1450	1446	1434	1
28	07/15/2016	Reduction			0	0	0	
29								
30								

Calculating the CBL for an RRMSE Test

This request calculates the CBL for an RRMSE test. Prior to executing be sure the appropriate Meter Data associated with the registration has been uploaded. The Meter Data file upload format differs between the web service and the UI. Be sure to review the step by step Meter Data documentation for details on the web service file format.

The RRMSE calculation request requires a simple file upload which initiates the request by Registration Id, CBL Method and End Date.

The RRMSE Calculation file Upload format:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
    <registrationId>1526319</registrationId>
    <reportType>RRMSE</reportType>
    <cblMethod>THREE_DAY_TYPE_SAA</cblMethod>
```

```
    <endDate>2016-08-03T04:00:00.000-04:00</endDate>
</ns2:cblCalculation>
```

With the file formatted and saved in the upload directory, create the request to calculate the RRMSE CBL. Add the below to the PJM CLI command file. Comment other actions using "REM" at the beginning of the line to avoid undesired processing.

PJM CLI Command File: Required Authentication is completed via the CLI

%CLIENT% -s %APP_URL% -a /rest/secure/upload/cblcalculation/cbltest/execute/ -file .\upload\ rrmseTestCalc.xml

When complete and successful, a response will be returned in the form of a file (output.txt) having zero bytes and an http response of 200 or OK to indicate the request has been completed. You will also see a file created with a summary of the calculation results. Below is a sample file output for a successful calculation.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
    <id>30533</id>
    <registrationId>1618635</registrationId>
    <reportType>RRMSE</reportType>
    <cblMethod>THREE_DAY_TYPE_SAA</cblMethod>
    <startDate>2016-08-22T04:00:00.000-04:00</startDate>
    <endDate>2016-10-20T04:00:00.000-04:00</endDate>
    <status>Successful</status>
    <rrmse>8.624</rrmse>
    <rrmseResult>Pass</rrmseResult>
    <numDays>41</numDays>
    <userId>ENOC_CSP</userId>
    <summary></summary>
</ns2:cblCalculation>
```

If un-successful, the response file will contain information about the calculation and a status of the result. Below is a sample failure response.

Note: Details concerning specific issues with meter data will not be included in the failed response information. Sample testing may be required via the UI to determine finite issues concerning data anomalies.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
    <registrationId>1526320</registrationId>
    <reportType>RRMSE</reportType>
    <cblMethod>THREE_DAY_TYPE_SAA</cblMethod>
    <endDate>2016-08-14T04:00:00.000-04:00</endDate>
```

```
    <status>Unsuccessful</status>
    <summary>Error Detail for RRMSE Calculation</summary>
</ns2:cblCalculation>
```

Calculating a CBL Detail Report

This request calculates the CBL for a CBL Detail Report. This calculation outputs the baseline for a single day of the user's choice. The calculation data used is based on the CBL methodology chosen. Prior to executing be sure the appropriate Meter Data associated with the registration has been uploaded.

The CBL Detail calculation request requires a simple file upload which initiates the request by Registration Id, CBL Method and End Date.

The CBL Detail Calculation file Upload format:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
    <registrationId>1526320</registrationId>
    <reportType>CBL_DETAIL</reportType>
    <cblMethod>THREE_DAY_TYPE_SAA</cblMethod>
    <endDate>2016-08-12T04:00:00.000-04:00</endDate>
</ns2:cblCalculation>
```

With the file formatted and saved in the upload directory, create the request to calculate the CBL Detail. Add the below to the PJM CLI command file. Comment other actions using "REM" at the beginning of the line to avoid additional processing.

PJM CLI Command File: Required Authentication is completed via the CLI

%CLIENT% -s %APP_URL% -a /rest/secure/upload/cblcalculation/cbltest/execute/ -file .\upload\cblCalc.xml

When complete and successful, a response will be returned in the form of a file (output.txt) having zero bytes and an http response of 200 or OK to indicate the request has been completed. You will also see a file created with a summary of the calculation results. Below is a sample file output for a successful calculation.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
    <id>133</id>
    <registrationId>1526320</registrationId>
    <reportType>CBL_DETAIL</reportType>
    <cblMethod>THREE_DAY_TYPE_SAA</cblMethod>
    <startDate>2016-08-12T04:00:00.000-04:00</startDate>
    <endDate>2016-08-12T04:00:00.000-04:00</endDate>
```

```
    <status>Successful</status>
    <userId>DRHUBUSER</userId>
    <summary></summary>
</ns2:cblCalculation>
```

If un-successful, the response file will contain information about the calculation and a status of the result. Below is a sample failure response.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:cblCalculation xmlns:ns2="http://drhub.pjm.com/">
    <registrationId>1526320</registrationId>
    <reportType>CBL_DETAIL</reportType>
    <cblMethod>THREE_DAY_TYPE_SAA</cblMethod>
    <endDate>2016-08-14T04:00:00.000-04:00</endDate>
    <status>Unsuccessful</status>
    <summary>Error Detail for CBL Detail Calculation</summary>
</ns2:cblCalculation>
```

Downloading CBL Test Results

This request returns the CBL results for a RRMSE test. The response will include details of the RRMSE calculation data and a summary of the results. If successful, the download will also include related CBL Detail report. The files will be downloaded in xls format and compressed into a zip file. If results are unavailable for a specific registration CBL request, a zero byte zip file will be returned.
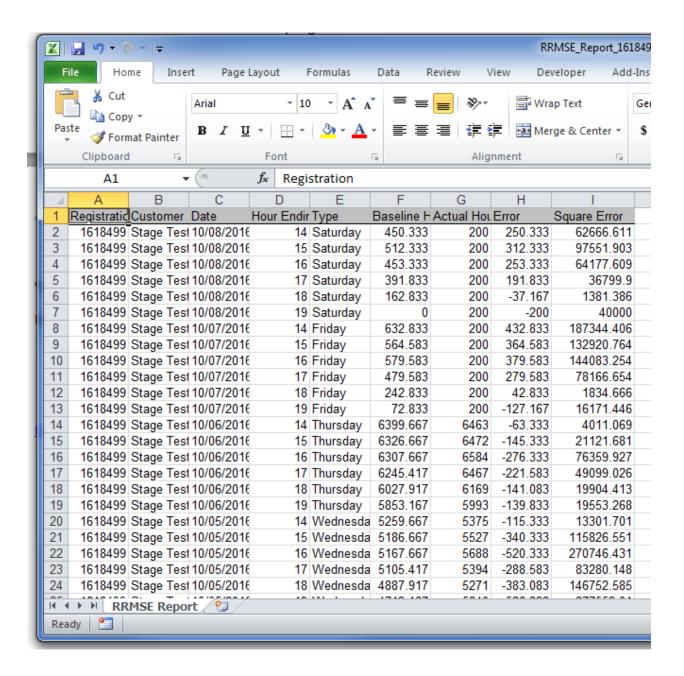
The request format is.

PJM CLI Command File: Required Authentication is completed via the CLI

REM Download RRMSE Calculation Results by Registration ID

%CLIENT% -s %APP_URL% -a /rest/secure/download/cblcalculation/cbltest/**1445341**

Below is a sample of the CLB Calculation results downloaded for an RRMSE test .

	A	B	C	D	E	F	G	H	I
1	Registratic	Customer	Date	Hour Endir	Type	Baseline H	Actual Hot	Error	Square Error
2	1618499	Stage Test	10/08/2016	14	Saturday	450.333	200	250.333	62666.611
3	1618499	Stage Test	10/08/2016	15	Saturday	512.333	200	312.333	97551.903
4	1618499	Stage Test	10/08/2016	16	Saturday	453.333	200	253.333	64177.609
5	1618499	Stage Test	10/08/2016	17	Saturday	391.833	200	191.833	36799.9
6	1618499	Stage Test	10/08/2016	18	Saturday	162.833	200	-37.167	1381.386
7	1618499	Stage Test	10/08/2016	19	Saturday	0	200	-200	40000
8	1618499	Stage Test	10/07/2016	14	Friday	632.833	200	432.833	187344.406
9	1618499	Stage Test	10/07/2016	15	Friday	564.583	200	364.583	132920.764
10	1618499	Stage Test	10/07/2016	16	Friday	579.583	200	379.583	144083.254
11	1618499	Stage Test	10/07/2016	17	Friday	479.583	200	279.583	78166.654
12	1618499	Stage Test	10/07/2016	18	Friday	242.833	200	42.833	1834.666
13	1618499	Stage Test	10/07/2016	19	Friday	72.833	200	-127.167	16171.446
14	1618499	Stage Test	10/06/2016	14	Thursday	6399.667	6463	-63.333	4011.069
15	1618499	Stage Test	10/06/2016	15	Thursday	6326.667	6472	-145.333	21121.681
16	1618499	Stage Test	10/06/2016	16	Thursday	6307.667	6584	-276.333	76359.927
17	1618499	Stage Test	10/06/2016	17	Thursday	6245.417	6467	-221.583	49099.026
18	1618499	Stage Test	10/06/2016	18	Thursday	6027.917	6169	-141.083	19904.413
19	1618499	Stage Test	10/06/2016	19	Thursday	5853.167	5993	-139.833	19553.268
20	1618499	Stage Test	10/05/2016	14	Wednesda	5259.667	5375	-115.333	13301.701
21	1618499	Stage Test	10/05/2016	15	Wednesda	5186.667	5527	-340.333	115826.551
22	1618499	Stage Test	10/05/2016	16	Wednesda	5167.667	5688	-520.333	270746.431
23	1618499	Stage Test	10/05/2016	17	Wednesda	5105.417	5394	-288.583	83280.148
24	1618499	Stage Test	10/05/2016	18	Wednesda	4887.917	5271	-383.083	146752.585

RRMSE Report

Ready

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