

MSRS - Basic Authentication and SUMA Functionality

Nick DiSciullo

Analyst, Market Settlements Development

Market Settlements Subcommittee

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- 2 updates are being made to MSRS Production in December
 - SUMA (Single User Multi Account)
 - Optional, will impact only SUMA user accounts
 - Basic Authentication
 - Required, will impact all MSRS users
 - Members must update their processes

SUMA – Single User Multi Account

- Customer dropdown
 - Displays customer accounts in which the SUMA user has active MSRS access
- Shopping cart functional across multiple customer accounts



MSRS Report Catalog

Customer Account: PJM Test

Customer:
Report Category:
PJMST
PJMT2
PJMT3

Report

Select Report Category

File Type Start Date End Date Version View

File Type Start Date End Date Version
Select 09/13/2018 09/13/2018 Latest Apply

Apply To All Selected Reports

Download Selected Reports

Add Selected to Cart

View Shopping Cart

Shopping Cart Contains: 0 Reports

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SUMA/Basic Authentication Browserless Updates

- Username/Password removed from the browserless request
 - All requests are impacted, not just SUMA
- Org parameter added for SUMA requests
 - Single org shortname, or “ALL”

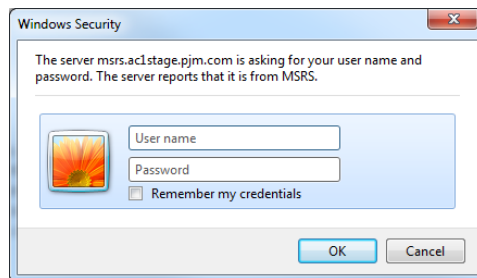
- Currently:

https://msrs.pjm.com/msrs/browserless.do?report=deferredtaxadjustmentchargesummary&version=L&format=C&start=07/01/2018&stop=07/01/2018&username=_____&password=_____

- Updated:

<https://msrs.pjm.com/msrs/browserless.do?report=deferredtaxadjustmentchargesummary&version=L&format=C&start=07/01/2018&stop=07/01/2018&org=PJMTST>

- Log in prompt





SUMA CSV Example

- No change to non-SUMA CSV format
- Requested Customer Account will display a comma separated list of the orgs in which the SUMA user has MSRS access
- Employer (from Account Manager) is displayed in the header as Customer Account
- Data for the requested customer accounts will appear in the body of the CSV in the sort order specified in the report documentation

A	B	C	D	E	F	G	H	I	J	K	L
Deferred Tax Adjustment Charge Summary											
Customer Account:	PJM Test	Report Creation Timestamp (EPT):	9/13/2018 17:50		Requested Customer Account:	PJMTST, PJMT2, PJMT3					
Start Month:	July, 2018	End Month:	July, 2018								
4000.01	4000.02	4000.03	1952.11	4000.32	4000.3	1952.12	1952.13	1952.01	4000.07		
Customer ID	Customer Code	Month	Total Monthly Tax De	Zone	Area	Monthly P	Total Mon	Deferred	Version		
2214	PJMTST	July, 2018	200000	PPL	PPL	10000	100000	20000	20180701		
2214	PJMTST	July, 2018	120000	PECO	PECO	5000	60000	10000	20180701		
2214	PJMTST	July, 2018	170000	DUQ	DUQ	8000	80000	17000	20180701		
12554	PJMT2	July, 2018	200000	PPL	PPL	4000	100000	8000	20180701		
12554	PJMT2	July, 2018	120000	PECO	PECO	5000	60000	10000	20180701		
12554	PJMT2	July, 2018	170000	DUQ	DUQ	4000	80000	8500	20180701		
23125	PJMT3	July, 2018	200000	PPL	PPL	1000	100000	2000	20180701		
23125	PJMT3	July, 2018	120000	PECO	PECO	30000	60000	60000	20180701		
23125	PJMT3	July, 2018	170000	DUQ	DUQ	10000	80000	21250	20180701		
End of Report											
The data on this report is preliminary until the end of the billing cycle. These results are based on load response transactions that have been settled to date.											

- No change to non-SUMA XML format
- <REQUEST_CUSTOMER_ACCOUNT> tag added to header for SUMA requests
- Rows for requested customer accounts will appear in the <ROWSET> of the XML in the sort order specified in the report documentation

```

<?xml version="1.0" encoding="UTF-8"?>
<MSRS xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <HEADER>
    <REPORT_NAME>Deferred Tax Adjustment Charge Summary</REPORT_NAME>
    <CUSTOMER_ACCOUNT>PJM Test</CUSTOMER_ACCOUNT>
    <REPORT_CREATION_TIMESTAMP_EPT>2018-09-13T17:57:53</REPORT_CREATION_TIMESTAMP_EPT>
    <START_DATE INTERVAL="MONTH">2018-07</START_DATE>
    <END_DATE INTERVAL="MONTH">2018-07</END_DATE>
  </HEADER>
  <REQUEST_CUSTOMER_ACCOUNT>
    <ORG>PJMTST</ORG>
    <ORG>PJMT2</ORG>
    <ORG>PJMT3</ORG>
  </REQUEST_CUSTOMER_ACCOUNT>
  </HEADER>
  <ROWSET>
    <ROW>
      <CUSTOMER_ID COL_ID="4000.01">2214</CUSTOMER_ID>
      <CUSTOMER_CODE COL_ID="4000.02">PJMTST</CUSTOMER_CODE>
      <MONTH COL_ID="4000.03">2018-07</MONTH>
      <TOT_MONTHLY_TAX_DEF_AMOUNT COL_ID="1952.11" UOM="$">200000.00</TOT_MONTHLY_TAX_DEF_AMOUNT>
      <ZONE COL_ID="4000.32">PPL</ZONE>
      <AREA_NAME COL_ID="4000.30">PPL</AREA_NAME>
      <MONTHLY_PEAK_LOAD COL_ID="1952.12" UOM="MW-days">10000.000</MONTHLY_PEAK_LOAD>
      <TOT_MONTHLY_PEAK_LOAD COL_ID="1952.13" UOM="MW-days">100000.000</TOT_MONTHLY_PEAK_LOAD>
      <DEF_TAX_ADJUSTMENT_CHARGE COL_ID="1952.01" UOM="$">20000.00</DEF_TAX_ADJUSTMENT_CHARGE>
      <VERSION COL_ID="4000.07">20180701.000</VERSION>
    </ROW>
    <ROW>
      <CUSTOMER_ID COL_ID="4000.01">2214</CUSTOMER_ID>
      <CUSTOMER_CODE COL_ID="4000.02">PJMTST</CUSTOMER_CODE>
      <MONTH COL_ID="4000.03">2018-07</MONTH>
      <TOT_MONTHLY_TAX_DEF_AMOUNT COL_ID="1952.11" UOM="$">120000.00</TOT_MONTHLY_TAX_DEF_AMOUNT>
      <ZONE COL_ID="4000.32">PECO</ZONE>
      <AREA_NAME COL_ID="4000.30">PECO</AREA_NAME>
      <MONTHLY_PEAK_LOAD COL_ID="1952.12" UOM="MW-days">5000.000</MONTHLY_PEAK_LOAD>
      <TOT_MONTHLY_PEAK_LOAD COL_ID="1952.13" UOM="MW-days">60000.000</TOT_MONTHLY_PEAK_LOAD>
      <DEF_TAX_ADJUSTMENT_CHARGE COL_ID="1952.01" UOM="$">10000.00</DEF_TAX_ADJUSTMENT_CHARGE>
      <VERSION COL_ID="4000.07">20180701.000</VERSION>
    </ROW>
    <ROW>
      <CUSTOMER_ID COL_ID="4000.01">2214</CUSTOMER_ID>
      <CUSTOMER_CODE COL_ID="4000.02">PJMTST</CUSTOMER_CODE>
      <MONTH COL_ID="4000.03">2018-07</MONTH>
      <TOT_MONTHLY_TAX_DEF_AMOUNT COL_ID="1952.11" UOM="$">170000.00</TOT_MONTHLY_TAX_DEF_AMOUNT>
      <ZONE COL_ID="4000.32">DUQ</ZONE>
      <AREA_NAME COL_ID="4000.30">DUQ</AREA_NAME>
      <MONTHLY_PEAK_LOAD COL_ID="1952.12" UOM="MW-days">8000.000</MONTHLY_PEAK_LOAD>
      <TOT_MONTHLY_PEAK_LOAD COL_ID="1952.13" UOM="MW-days">80000.000</TOT_MONTHLY_PEAK_LOAD>
      <DEF_TAX_ADJUSTMENT_CHARGE COL_ID="1952.01" UOM="$">17000.00</DEF_TAX_ADJUSTMENT_CHARGE>
      <VERSION COL_ID="4000.07">20180701.000</VERSION>
    </ROW>
    <ROW>
      <CUSTOMER_ID COL_ID="4000.01">12554</CUSTOMER_ID>
      <CUSTOMER_CODE COL_ID="4000.02">PJMT2</CUSTOMER_CODE>
      <MONTH COL_ID="4000.03">2018-07</MONTH>
      <TOT_MONTHLY_TAX_DEF_AMOUNT COL_ID="1952.11" UOM="$">200000.00</TOT_MONTHLY_TAX_DEF_AMOUNT>
      <ZONE COL_ID="4000.32">PPL</ZONE>
      <AREA_NAME COL_ID="4000.30">PPL</AREA_NAME>
      <MONTHLY_PEAK_LOAD COL_ID="1952.12" UOM="MW-days">4000.000</MONTHLY_PEAK_LOAD>
      <TOT_MONTHLY_PEAK_LOAD COL_ID="1952.13" UOM="MW-days">100000.000</TOT_MONTHLY_PEAK_LOAD>
      <DEF_TAX_ADJUSTMENT_CHARGE COL_ID="1952.01" UOM="$">8000.00</DEF_TAX_ADJUSTMENT_CHARGE>
      <VERSION COL_ID="4000.07">20180701.000</VERSION>
    </ROW>
  </ROWSET>
</MSRS>

```

- Some reports will not be SUMA enabled
 - Non-org specific reports
 - CSV/XML for Weekly and Monthly Invoice
 - PJM will create new versions with normalized report formats, similar to other reports
- Some reports will have a limit to the maximum number of accounts tied to the user
- MSRS Report Dictionary will be updated to display relevant SUMA information



SUMA Training Reports

Report Name	Data Month
Balancing Generator LMP Charges	Aug-18
Cross-monthly Congestion Credit Summary	Aug-18
Day-Ahead Daily Energy Transactions	Aug-18
Day-Ahead Operating Reserve Generator Credit Details	Aug-18
Energy Market and Congestion Loss Charge Details	Aug-18
Generator Credit Summary	Aug-18
Generator Portfolio Summary	Aug-18
Load Response Summary	Aug-18
Monthly Billing Statement - Online and PDF	Aug-18
Non-Synchronized Reserve Summary	Aug-18
Operating Reserve Generator Deviations - 5 Minute	Aug-18
Regional Balancing Operating Reserve Charge Summary	Aug-18
Regulation Credits	Aug-18
Regulation Summary	Aug-18
RPM Auction Credits	Aug-18
Schedule 9 and 10 Charge Details	Aug-18
Schedule 9 and 10 Load Reconciliation Charge Summary	Aug-18
Spot Market Energy Charge Summary	Aug-18
Synchronized Reserve Tier 2 Credits	Aug-18
Transmission Congestion Charge Summary	Aug-18
Transmission Enhancement Charge Summary	Aug-18

Basic Authentication

What's Changing?

- Browserless requests must post credentials using basic authentication
- **The filetransfer.jar interface will no longer work for MSRS**

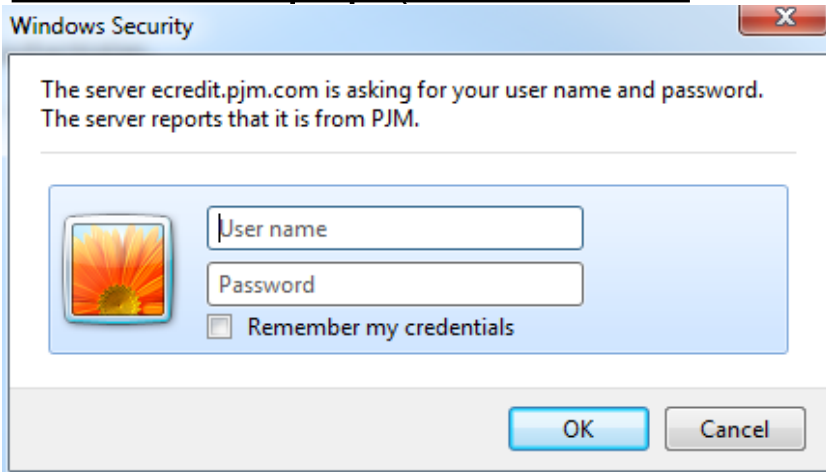
```
java -cp oreilly.jar;filetransfer.jar; com.pjm.FileTransfer debug=true username="YourUsername"  
password="YourPassword" app=msrs action=download format=x version=l report="Billing"  
start=01/01/2012 stop=01/31/2012 result="billing.csv"
```
- Browserless documentation will be enhanced to include more examples and FAQs

What's the Impact?

- Change will NOT be backward compatible
- **!!Members will need to update their processes to use basic auth!!**
 - Good news! All modern tools and programming languages have built-in support for basic authentication.
- No change to UI logins from PJM.com/eTools
- Implemented with SUMA changes (single-user, multiple account) to allow members to make changes for both at the same time.

Examples using Basic Authentication

Browser Popup (IE, Chrome, Firefox)



Command Line using curl

```
$ curl -u MyUsername "https://msrs.pjm.com/msrs/browserless.do?report=billingreport&version=L&format=C&start=08/01/2018&stop=08/31/2018"
Enter host password for user 'MyUsername':
```

Java Code Snippet

```
public static void main(String args[]) throws IOException {
    String webURL = "https://msrs.pjm.com/msrs/browserless.do?report=arrtargetcredits&version=L&format=C&start";
    String username = "MyUsername";
    String password = "MyPassword";

    String authString = username + ":" + password;
    String basicAuth = "Basic " + javax.xml.bind.DatatypeConverter.printBase64Binary(authString.getBytes());

    URL url = new URL(webURL);
    URLConnection urlConnection = url.openConnection();
    urlConnection.setRequestProperty("Authorization", basicAuth);
    InputStream is = urlConnection.getInputStream();
    InputStreamReader isr = new InputStreamReader(is);

    int numCharsRead;
    char[] charArray = new char[2048];
    StringBuffer sb = new StringBuffer();
    while ((numCharsRead = isr.read(charArray)) > 0) {
        sb.append(charArray, 0, numCharsRead);
    }
    String result = sb.toString();

    System.out.println("*** Report Request ***");
    System.out.println(result);
    System.out.println("*** END ***");
}
```

- Training Environment - October 1st
- Additional discussion at Tech Change Forums and Market Settlement Subcommittee meetings
- Production - December
- Email mss@pjm.com with questions/comments