

MSRS - Basic Authentication and SUMA Functionality

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- 2 updates are being made to MSRS Production on January 24, 2019
 - 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:

- PJMTST
- 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

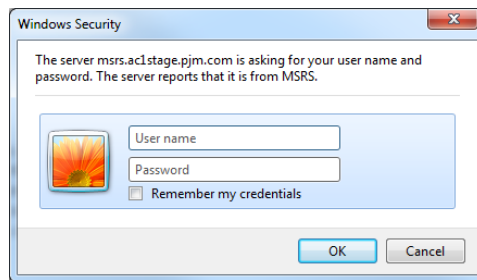
- Username/Password removed from the browserless request
 - All requests are impacted, not just SUMA
- Org parameter added for SUMA requests
 - Single org shortname, or “ALL”
- Currently:

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

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

```

<?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>
  - <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>

```

INVOICE NUMBER: XXXXX
 CUSTOMER ACCOUNT: PJM TEST1
 CUSTOMER IDENTIFIERS: PJMTST1 (XXX)
 FINAL BILLING STATEMENT ISSUED: 09/04/2018 08:57:21
 BILLING PERIOD: 08/01/2018 to 08/29/2018

Weekly Billing Total: (\$28.48)
 Previous Weekly Billing Total: \$0.00

Weekly Billing Statement Summary	Total
Total Net Credit to You. Please Do Not Pay	\$28.48

TERMS: PAYABLE IN FULL BY 12:00 PM EPT ON 09/07/2018
 Fed Wire/ACH Bank Instructions: PJM SETTLEMENT, INC.
 PNC Bank, N.A.
 Pittsburgh, PA

CUSTOMER ACCOUNT: PJM TEST1
 CUSTOMER IDENTIFIERS: PJMTST1 (XXX)
 FINAL BILLING STATEMENT ISSUED: 09/04/2018 08:57:21
 BILLING PERIOD: 08/01/2018 to 08/29/2018

CHARGES	BILLING LINE ITEM NAME	AMOUNT
1100	Network Integration Transmission Service	\$0.00
1200	Day-ahead Spot Market Energy	\$118.50
1205	Balancing Spot Market Energy	\$(144.40)
1210	Day-ahead Transmission Congestion	\$0.15
1215	Balancing Transmission Congestion	\$0.00
1220	Day-ahead Transmission Losses	\$3.17
1225	Balancing Transmission Losses	\$(5.90)
Total Charges		(\$28.48)

CUSTOMER ACCOUNT: PJM TEST1
 CUSTOMER IDENTIFIERS: PJMTST1 (XXX)
 FINAL BILLING STATEMENT ISSUED: 09/04/2018 08:57:21
 BILLING PERIOD: 08/01/2018 to 08/29/2018

CREDITS	BILLING LINE ITEM NAME	AMOUNT
2100	Network Integration Transmission Service	\$0.00
2220	Transmission Losses	\$0.00
Total Credits		\$0.00

INVOICE NUMBER: XXXXX
 CUSTOMER ACCOUNT: PJM TEST2
 CUSTOMER IDENTIFIERS: PJMTST2 (XXX)
 FINAL BILLING STATEMENT ISSUED: 09/04/2018 08:57:21
 BILLING PERIOD: 08/01/2018 to 08/29/2018

Weekly Billing Total: \$0.00
 Previous Weekly Billing Total: \$0.00

Weekly Billing Statement Summary	Total
Total Net Credit to You. Please Do Not Pay	\$0.00

TERMS: PAYABLE IN FULL BY 12:00 PM EPT ON 09/07/2018
 Fed Wire/ACH Bank Instructions: PJM SETTLEMENT, INC.
 PNC Bank, N.A.
 Pittsburgh, PA

CUSTOMER ACCOUNT: PJM TEST2
 CUSTOMER IDENTIFIERS: PJMTST2 (XXX)
 FINAL BILLING STATEMENT ISSUED: 09/04/2018 08:57:21
 BILLING PERIOD: 08/01/2018 to 08/29/2018

CHARGES	BILLING LINE ITEM NAME	AMOUNT
1100	Network Integration Transmission Service	\$0.00
1200	Day-ahead Spot Market Energy	\$0.00
1205	Balancing Spot Market Energy	\$0.00
1210	Day-ahead Transmission Congestion	\$0.00
1215	Balancing Transmission Congestion	\$0.00
1220	Day-ahead Transmission Losses	\$0.00
1225	Balancing Transmission Losses	\$0.00
Total Charges		\$0.00

CUSTOMER ACCOUNT: PJM TEST2
 CUSTOMER IDENTIFIERS: PJMTST2 (XXX)
 FINAL BILLING STATEMENT ISSUED: 09/04/2018 08:57:21
 BILLING PERIOD: 08/01/2018 to 08/29/2018

CREDITS	BILLING LINE ITEM NAME	AMOUNT
2100	Network Integration Transmission Service	\$0.00
2220	Transmission Losses	\$0.00
Total Credits		\$0.00

PDF Example

- No change to non-SUMA PDF
- SUMA accounts can retrieve multiple invoices in one PDF file

- 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
- MSRS Report Dictionary is updated to display relevant SUMA information

MSRS SUMA - Sorting

- Issue
 - MSRS requests become very resource intensive when sorting large quantities of data
 - If unchanged, SUMA reports require Maximum Orgs and Maximum Days limits
- Proposed solution
 - Eliminate sorting on all 5-min reports and large hourly reports such as ARR and FTR Target Credits
- Impacts
 - Any application that expects sorted data will be impacted
 - Increase or possibly remove the Maximum Orgs restriction on SUMA reports

- TBD. Any 5 minute interval and some hourly reports will have the sorting removed to increase system throughput
 - MSRS Report Dictionary will be updated
 - Remove Max Orgs column, add Sorting designation

Report Long Name	Query Interval	SUMA	Max Orgs
Advanced Second Control Center Charge Details	D	Y	25
ARR Target Credits	D	Y	25
Auction Specific MW Transaction Charges and Credits (formerly Non-Unit Specific Capacity Transaction Charges and Credits)	D	Y	25
Low Voltage Network Integration Transmission Service Charge Summary	D	Y	25
LSE InSchedule and NSPL Activity Summary	M	N	1
Market-to-Market Adjustment to Transmission Congestion Credit Details	M	Y	25
Meter Correction Allocation Charge Summary	M	Y	25
Meter Correction Charge Summary	M	Y	25
Monthly Billing Statement - CSV and XML	M	N	1
Monthly Billing Statement - Online and PDF	M	Y	25
Monthly Billing Statement Recipients	BM	N	1
Monthly Congestion Credit Summary	M	Y	25
Monthly Load Reconciliation Billing Determinants	M	Y	25
Month-to-Date Billing Summary - CSV and XML	BD	Y	25
Month-to-Date Billing Summary - Online	BD	Y	25

Interval Reports

CT Lost Opportunity Cost Forfeiture

Emergency Energy Transactions

Explicit Congestion Charges

Explicit Loss Charges

Load Response Regulation Credits

Load Response Tier 1 Credits

Load Response Tier 2 Credits

Operating Reserve Lost Opportunity Cost Credits

Operating Reserve Lost Opportunity Cost for Pump Hydro Credits

Reactive Services Credits

Synchronized Reserve Tier 1 Credits

Synchronized Reserve Tier 2 Credits

Synchronized Reserve Tier 2 Retroactive Penalty Charges

Synchronous Condensing Credits

Balancing Generator LMP Charges

Emergency Energy Charge and Credit Allocation Summary

Emergency Load Response Allocation Summary

Energy Market and Congestion Loss Charge Details

Non-Synchronized Reserve Credits

Operating Reserve Deviation Summary – 5 minute

Operating Reserve Generator Deviations – 5 minute

Pseudo-Tie Balancing Congestion Refund Charge Summary

Real-Time Load Response Credits

Regulation Credits

Hourly Reports

ARR Target Credits

FTR Target Credits

Other Reports TBD

MSRS requests become very resource intensive when sorting large quantities of data. PJM is proposing a solution of eliminating sorting on some of the larger data reports. If sorting is removed, any application that expects sorted data will be impacted. If unchanged, SUMA reports will require Maximum Orgs and Maximum Days limits.

Question: Would you be in favor of removing sorting from some reports in order to minimize or possibly remove the Maximum Orgs and Maximum Days limitations?

- Yes
- No
- (Optional Comment Field)

Results:

- Yes – 15
- No – 4

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"
```

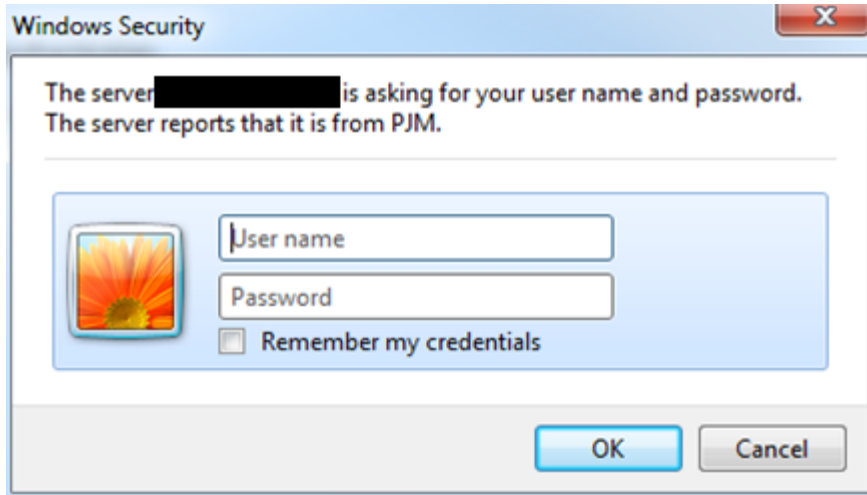
- [Documentation](#) has been enhanced to include more examples and FAQs

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.

Browser Popup (IE, Chrome, Firefox)

Java Code Snippet



```
String webURL = "https://msrstrain.pjm.com/msrs/browserless.do?report=arrtargetcredits&version=L&format=C&start=08/01/2018&stop=08/30/2018";
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);
HttpsURLConnection urlConnection = (HttpsURLConnection)url.openConnection();
urlConnection.setRequestProperty("Authorization", basicAuth);

BufferedReader responseBuffer = new BufferedReader(new InputStreamReader(
    urlConnection.getInputStream()));

String reportOutput;

System.out.println("*** Report Request ***");
while ((reportOutput = responseBuffer.readLine()) != null) {
    System.out.println(reportOutput);
}
System.out.println("*** END ***");
```

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':
```

Full examples can be found [here](#)

PJM.com → Markets & Operations → Billing, Settlements & Credit → MSRS Reports Documentation

- Training Environment - October 1st
- Additional discussion at Tech Change Forums and Market Settlement Subcommittee meetings
- Production – January 24, 2019
- Email mss@pjm.com with questions/comments
 - FAQs are available on MSRS Reports Documentation page