MSRS Roadmap

As of January 15, 2019
<table>
<thead>
<tr>
<th>Product - Action Required</th>
<th>Deadline</th>
<th>Who May Be Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSRS - Update processes to use basic authentication</td>
<td>January 24</td>
<td>All MSRS Users. Change is <strong>required</strong> for continued use of browserless.</td>
</tr>
<tr>
<td>MSRS - Org parameter added for SUMA requests via browserless</td>
<td>January 24</td>
<td>MSRS Browserless SUMA Users. Change is <strong>optional</strong>.</td>
</tr>
</tbody>
</table>
## MSRS Roadmap

<table>
<thead>
<tr>
<th></th>
<th>2018 Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>2019 Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Browserless Authentication</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Train: Oct 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SUMA Functionality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Production: Jan 24</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Train: Oct 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Production: Jan 24</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend**
- Start Date
- End Date

Tech Change Community

www.pjm.com

3
• The MSRS browserless reporting interface requires username and password in the URL. Example:


• Current format fully encrypted via HTTPS in transport

• However -- deprecated practice due to security issues
  – Any visible passwords create a risk
Browserless Authentication Release Details

- Browserless requests must change to post credentials using basic authentication
- The filetransfer.jar interface will no longer work for MSRS
  
  This will no longer work:
  ```
  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"
  ```

- Easy replacements for filetransfer.jar include curl and wget, available on both Windows and Linux
- PJM also provides examples in Java 8 and Python 3
MSRS Browserless Basic Authentication Examples

Browser Popup (IE, Chrome, Firefox)  

Java Code Snippet

Command Line using curl

Full examples can be found [here](http://www.pjm.com)
PJM.com → Markets & Operations → Billing, Settlements & Credit → MSRS Reports Documentation
Browserless Authentication Release Impact

- No change to user interface logins from PJM.com and PJM Tools
- Browserless documentation is currently up to date on pjm.com
- Implemented with Single User Multi-Account (SUMA) changes to allow users to make changes for both at the same time

<table>
<thead>
<tr>
<th>Impact</th>
<th>Action Required</th>
<th>Outage</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Interface</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Browserless</td>
<td>Members will need to update their processes to use basic authentication</td>
<td>1 hour</td>
</tr>
</tbody>
</table>
MSRS - SUMA Functionality
User Interface Updates

- Customer dropdown
  - Visible only for SUMA users
  - Displays customer accounts in which the SUMA user has active MSRS access
• Customers may add reports for multiple accounts to their shopping cart.
Browserless Updates

• Optional ORG parameter available for SUMA browserless
  – Can specify single org shortname (org=PJMTST)
  – Retrieve all associated accounts in one request (org=ALL)

• Currently:

• Updated:
MSRS Report Dictionary

- MSRS Report Dictionary is updated with report specific SUMA information
  - SUMA = Y denotes ability to request report for multiple accounts
  - Is Sorted? column specifies whether or not a report contains sorted data
- N/A = The report is in Data Miner 2 or pjm.com
- PJM.com → Markets & Operations → Billing, Settlements & Credit → MSRS Reports Documentation

<table>
<thead>
<tr>
<th>Report Long Name</th>
<th>Query Interval</th>
<th>SUMA</th>
<th>Is Sorted?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Second Control Center Charge Details</td>
<td>D</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ARR Target Credits</td>
<td>D</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Auction Specific MW Transaction Charges and Credits (formerly Non-Unit Specific Capacity Transaction Charges and Credits)</td>
<td>D</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Low Voltage Network Integration Transmission Service Charge Summary</td>
<td>D</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>LSC InSchedule and NSPL Activity Summary</td>
<td>M</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Market-to-Market Adjustment to Transmission Congestion Credit Details</td>
<td>M</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Meter Correction Allocation Charge Summary</td>
<td>M</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Meter Correction Charge Summary</td>
<td>M</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Monthly Billing Statement - CSV and XML</td>
<td>M</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>Monthly Billing Statement - Online and PDF</td>
<td>M</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>Monthly Billing Statement SUMA - CSV and XML</td>
<td>M</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Monthly Billing Statement Recipients</td>
<td>BM</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Monthly Congestion Credit Summary</td>
<td>M</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Monthly Load Reconciliation Billing Determinants</td>
<td>M</td>
<td>Y</td>
<td>N/A</td>
</tr>
<tr>
<td>Month-to-Date Billing Summary - CSV and XML</td>
<td>B0</td>
<td>N</td>
<td>N/A</td>
</tr>
<tr>
<td>Month-to-Date Billing Summary - Online</td>
<td>B0</td>
<td>N</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Report Changes

- No changes for non-SUMA users
- SUMA users will see slight changes in their report headers
  - Login account displayed
  - Requested account(s) displayed
- CSV/XML for Weekly and Monthly Invoice
  - No changes for non-SUMA
  - New reports created for SUMA with account specific data denoted in the body
• 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
XML Example

- No change to non-SUMA XML
- `<REQUEST_CUSTOMER_ACCOUNT>` tag added to header for SUMA requests
### PDF Example

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

---

**Invoices**

<table>
<thead>
<tr>
<th>Invoice Number</th>
<th>Customer Account</th>
<th>Customer ID</th>
<th>Final Billing Statement Issued</th>
<th>Billing Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXXX</td>
<td>PJM TEST1</td>
<td>PJMTEST1</td>
<td>09/04/2018 06:57:21</td>
<td>08/01/2018 to 08/30/2019</td>
</tr>
</tbody>
</table>

**Weekly Billing Statement Summary**

- **Total Weekly Billing Total:** $28.48
- **Previous Weekly Billing Total:** $0.00

**Weekly Billing Statement**

<table>
<thead>
<tr>
<th>Description</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>102 Network Integration Transmission Service</td>
<td>$0.00</td>
</tr>
<tr>
<td>106 Day-ahead Spot Market Energy</td>
<td>$119.50</td>
</tr>
<tr>
<td>1258 Balancing Spot Market Energy</td>
<td>$(22.50)</td>
</tr>
<tr>
<td>1213 Day-ahead Transmission Congestion</td>
<td>$0.00</td>
</tr>
<tr>
<td>1215 Balancing Transmission Congestion</td>
<td>$0.00</td>
</tr>
<tr>
<td>1226 Day-ahead Transmission Losses</td>
<td>$1.52</td>
</tr>
<tr>
<td>1228 Balancing Transmission Losses</td>
<td>$1.52</td>
</tr>
</tbody>
</table>

**Total Charges:** $(28.48)

<table>
<thead>
<tr>
<th>Credits</th>
<th>Billing Line Item Name</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2100</td>
<td>Network Integration Transmission Service</td>
<td>$0.00</td>
</tr>
<tr>
<td>2230</td>
<td>Transmission Losses</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

**Total Credits:** $0.00
• MSRS UI
  – esuitetrain.pjm.com

• Browserless
  – msrstrain.pjm.com

• Sandbox usernames and passwords are separate from production
  – Work with your Company Account Manager to establish SUMA access
  – Employer account must have MSRS access

• Sandbox currently available for testing
  – All SUMA enabled reports are available for August 2018
Timeline

• Train 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
Product Details
Market Settlements Reporting System (MSRS) is a tool used by market participants to retrieve market settlements reports and monthly billing statements.

Key Product Features
• 200+ settlement reports
• Provide settlement and billing details
• Viewable in the browser
• CSV and XML download capability