

# Browserless/API 2 Factor Authentication (Public Key Infrastructure – PKI)

Sean Flamm  
Market Settlements Subcommittee  
February 14<sup>th</sup>, 2022

- Rescheduled the Train implementation of mandatory PKI authentication for DR Hub
- Added most commonly asked questions.

Product - Action Required	Dates	Who May Be Affected
<p><b>Browserless/API 2 Factor Authentication (Mandatory)</b></p> <ul style="list-style-type: none"> <li>• Obtain valid PKI certificates from approved Certificate Authorities</li> <li>• Rewrite Browserless/API authentication code OR use PJM provided command line interface(CLI)</li> <li>• Make sure 2-Way SSL Connections, Client Certificates &amp; Connection Renegotiation are enabled at Firewall &amp; Security devices for outgoing PJM SSO traffic</li> <li>• <b>Opt in now</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Train: January 2022</b></li> <li>• <b>Production: February – March 2022</b></li> </ul>	<p><b>Browserless users of</b></p> <ul style="list-style-type: none"> <li>• Markets Gateway</li> <li>• InSchedule</li> <li>• Power Meter</li> <li>• FTR Center</li> <li>• Capacity Exchange</li> <li>• DR Hub</li> <li>• MSRS</li> </ul>





**Legend**

- Start Date
- ◆ End Date

## Change impacts only Browserless transfers

Web  
Browser

- **Source:** Web browsers
- **Authentication Mechanism:** Password + Soft Token(One Time Password)

Browserless

- **Source:** Machine to Machine
  - Interactions with PJM web service Application Programming Interfaces (APIs) via custom code or PJM Command Line Interface (CLI)
- **Authentication Mechanism:** Password + Certificate using Public Key Infrastructure (PKI)

InSchedule

DR Hub

MSRS

Power  
Meter

FTR  
Center

Market  
Gateway

Capacity  
Exchange



# 2022 Dates for Mandatory PKI cutover

Product	Train	Production
InSchedule	January 6 at 4 p.m.	February 23 at 4 p.m.
Power Meter	January 6 at 4 p.m.	February 23 at 4 p.m.
FTR Center	January 13 at 4 p.m.	February 23 at 4 p.m.
DR Hub	January 20 at 4 p.m.	March 2 at 4 p.m.
Capacity Exchange	January 13 at 4 p.m.	March 16 at 4 p.m.
MSRS	January 20 at 4 p.m.	March 23 at 4 p.m.
Markets Gateway	January 18 at 4 p.m.	March 30 at 4 p.m.

- If a user accesses the tools only through the User Interface (UI), is a PKI certificate needed? **No.**
- If a user accesses the tools using both the UI and browserless interfaces, is a PKI certificate needed? **Yes.**
- Do system accounts (used to access browserless interfaces) need a PKI certificate? **Yes**
- If a user access browserless interfaces using multiple usernames, is a separate PKI certificate needed for each username? **Yes.**
  - If that user creates a SUMA account for those multiple usernames, how many PKI certificates are needed? **One (1) for the SUMA username**
- Can PKI certificates be shared between different usernames? **No. It is username specific.**



- If a user access multiple PJM tools with the same username, how many PKI certificates are needed? **One (1). It is username specific, not tool specific.**
- Do all usernames under an account need to use a PKI certificate at the same time? **No. PKI certificate is username specific, each username can start independently.**
- The username in Train is different from the username in Production, can I use the same PKI certificate? **Yes.**
- Once a PKI certificate is added to a username, does it work for all PJM Tools under that user or only certain ones? **Impacts all PJM Tools.**
- What happens if a user attempts to access a browserless interface without a certificate? **The user will get authentication errors.**
- Do the all PKI certificates have to be from the same vendor? **No.**

- Do users need to go through the 'opt-in' period? **No. However, it will allow for a sense of certainty about how this implementation works before it becomes mandatory.**

- PKI Certificates and Two-Step Verification Browserless/API [FAQs](#)
- PKI Authentication [Guide](#)
- Exporting public [keys](#)

Facilitator:

Rebecca Stadelmeyer,  
[Rebecca.Stadelmeyer@pjm.com](mailto:Rebecca.Stadelmeyer@pjm.com)

Secretary:

Sean Flamm, [Sean.Flamm@pjm.com](mailto:Sean.Flamm@pjm.com)

SME/Presenter:

Sunil Kumar Rachakonda

[SunilKumar.Rachakonda@pjm.com](mailto:SunilKumar.Rachakonda@pjm.com)

**Tool Security Changes**



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

[custsvc@pjm.com](mailto:custsvc@pjm.com)