Enterprise Security Initiative Roadmap

Colin Brisson
Manager, Enterprise Information Security
As of June, 2018
Critical infrastructure is a higher profile target

- Nation states are increasing their attacks.
- Password spraying has become an effective tool to compromise user accounts.

PJM recognizes member feedback must be incorporated into security approaches

PJM’s priority is to protect the accounts, data and information entrusted by our members
More restrictive cybersecurity controls

Block network traffic from outside the U.S. and Canada via Geo-IP blocking
PJM’s Approach to Geo-IP Blocking

- Analyze network traffic by country
- Analyze the use of authenticated services by authorized user
- Correlate service use against analysis of traffic by country
- Build up whitelisting for valid, correlated network traffic
- Monitor whitelisting
- Successively block groups of countries based on risk/use
PJMs Support/Response Approach

Communicate change process

Response process for member-related problems

Regular meetings to review process effectiveness

Collecting the right feedback to quickly determine username, source IPs, services being accessed, error information, etc.

An escalation process in place to quickly respond to problems
What Has PJM Done to Date?

PJM has begun implementing Geo-IP blocking with:

- High risk countries
- Limited access to internet SCADA

[Source: www.pjm.com]
Two-Step Verification

Foluso Afelumo
Manager, Development and Data Operations
As of July, 2018
What Does Two-Step Verification Provide?

- Provides an extra layer of security to PJM’s single sign on tools

- Uses a password and additional information – a token
  - Used by banks, government sites and some email providers

- Prevents a breach even if a password is successfully compromised

- Already in use with PJM’s Account Manager application

www.pjm.com
How Does Two-Step Verification Work?

Triggered on logon from an unrecognized device

Uses a password and email token combination

Validated email addresses become essential

CAMs will be able to manage email domains (e.g., @pjm.com)

Leverages valid email addresses

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PJM will provide a means to manage email domains
Ease of Use

**Single User Multi Account (SUMA)**
- Reduces the number of accounts

**Works with mobile devices**

**Allows up to five unique devices per user**
- Browsers
- Laptops/computers

**Screen resolution**
- No longer a factor in device identification

**Clearing browser cache**
- Will not remove the device
Only Browser-based Interactions

- No Browserless/API impacts at this time
<p>| Non Impacted Applications                   | PJM.com, eDART, eGADS |</p>
<table>
<thead>
<tr>
<th>Area</th>
<th>Impact</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Browserless (XML API)</td>
<td>None</td>
<td>None</td>
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<tr>
<td>Browser</td>
<td>One time password requirement with each new device</td>
<td>Ensure email address is valid</td>
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**May 31**
SUMA available for all applications (except eCredit, MSRS, ExSchedule and Oasis in training environment)

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**Late June**
SUMA available for all applications (except eCredit, MSRS, ExSchedule and Oasis in production environment)

**August 10**
Participants consolidate subaccount user accounts into SUMA accounts in the training environment

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**September 10**
Two-step verification goes live in the production environment for PJM employees

**September 30**
- Participants consolidate sub-account user accounts into appropriate SUMA accounts
- Email verification feature available in production environment

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**August 15**
Two-step verification goes live in training

**August 31**
Email verification feature available in training environment

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**October 10**
Two-step verification goes live in the production environment for stakeholders
## 2018 Roadmap for Enterprise Security

<table>
<thead>
<tr>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
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<tbody>
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<td><strong>Screen resolution identification</strong></td>
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<td>Train: August 8</td>
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*www.pjm.com*