

## Public Secure Socket Layer (SSL) Certificate Renewal FAQs

### What is Changing?

The external (Public) SSL certificate for \*.pjm.com is expiring on January 16 2022, and will be replaced in the train and production environments.

### When will the change occur?

The changes will occur to PJM's Train and Production environments on the following dates:

- Train: Dec. 6, 2021
- Production: Dec. 14, 2021

### What should I do?

- Browsers are already configured with the updated CA certificates so no action is required for browser based interactions.
- If you are currently accessing PJM applications via browserless APIs (Application Programming Interface), this means the required ROOT and IA certificates are already available to your trust store.

### How can I validate I have the correct ROOT or IA certificates?

- If you would like to validate to ensure the right CA and IA is added to your trust store, verify the serial number of the ROOT and IA certificates in your trust store against the serial numbers highlighted below (this information came from <https://www.digicert.com/kb/digicert-root-certificates.htm#roots>):

<p><b>Cybertrust Global Root</b>  <a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Valid until: 15/Dec/2021            Serial #: 04:00:00:00:01:0F:85:AA:2D:48            SHA1 Fingerprint: 5F:43:E5:B1:8F:F8:78:8C:AC:1C:07:CA:4A:9A:C6:22:2B:CC:34:C6            SHA256 Fingerprint: 96:0A:DF:00:63:E9:63:56:75:0C:29:65:DD:0A:08:67:DA:0B:9C:BD:6E:77:71:4A:EA:FB:23:49:AB:39:3D:A3</p>
<p><b>DigiCert Assured ID Root CA</b>  <a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Valid until: 10/Nov/2031            Serial #: 0C:E7:E0:E5:17:D8:46:FE:8F:E5:60:FC:1B:F0:30:39            SHA1 Fingerprint: 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:48:DF:85:A8:99:B2:4D:43            SHA256 Fingerprint: 8E:90:99:85:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C            Demo Sites for Root: <a href="#">Active Certificate</a> <a href="#">expired</a> <a href="#">revoked</a></p>
<p><b>DigiCert Assured ID Root G2</b>  <a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Valid until: 15/Jan/2038            Serial #: 0B:93:1C:3A:D6:39:67:EA:67:23:BF:C3:AF:9A:F4:4B            SHA1 Fingerprint: A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F            SHA256 Fingerprint: 7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85            Demo Sites for Root: <a href="#">Active Certificate</a> <a href="#">expired</a> <a href="#">revoked</a></p>
<p><b>DigiCert Assured ID Root G3</b>  <a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Valid until: 15/Jan/2038            Serial #: 0B:A1:5A:FA:1D:DF:A0:B5:49:44:AF:0D:24:A0:6C:EC            SHA1 Fingerprint: F5:17:A2:4F:9A:48:06:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89            SHA256 Fingerprint: 7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2            Demo Sites for Root: <a href="#">Active Certificate</a> <a href="#">expired</a> <a href="#">revoked</a></p>
<p><b>DigiCert Federated ID Root CA</b>  <a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Valid until: 15/Jan/2033            Serial #: 08:74:D9:58:23:3E:22:57:C5:21:15:C8:BF:22:92:AE            SHA1 Fingerprint: 8E:93:4F:88:A5:A4:55:33:36:E2:9B:5F:B8:66:60:48:EF:AA:82:40            SHA256 Fingerprint: CF:2A:86:C8:28:50:FF:66:30:17:30:35:2E:C1:65:46:D6:11:98:5E:F8:C9:36:65:7C:23:B6:EB:E5:F0:AA:B7</p>
<p><b>DigiCert Global Root CA</b>  <a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Valid until: 10/Nov/2031            Serial #: 08:3B:E0:56:90:42:46:B1:A1:75:6A:C9:59:91:C7:4A            SHA1 Fingerprint: A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36            SHA256 Fingerprint: 43:48:A0:E9:44:40:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:07:01:61            Demo Sites for Root: <a href="#">Active Certificate</a> <a href="#">expired</a> <a href="#">revoked</a></p>
<p><b>DigiCert Global Root G2</b>  <a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Valid until: 15/Jan/2038            Serial #: 03:3A:F1:E6:A7:11:A9:A0:BB:28:64:B1:1D:09:FA:E5            SHA1 Fingerprint: DF:3C:24:F9:8FD6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4            SHA256 Fingerprint: CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:01:14:4C:EA:27:D4:6A:5A:B1:CB:5F            Demo Sites for Root: <a href="#">Active Certificate</a> <a href="#">expired</a> <a href="#">revoked</a></p>

### IA Certificate:

- If you would like to validate to ensure the right IA is added to your trust store, access the URL: <https://www.digicert.com/kb/digicert-root-certificates.htm#intermediates> and verify the serial number of the IA cert in your trust store against the below cert (highlighted below)

<p><b>Encryption Everywhere DV TLS CA - G1</b></p> <p><a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Issuer: DigiCert Global Root CA Valid until: 27/Nov/2027 Serial #: 02:79:AC:45:8B:C1:B2:45:AB:F9:80:53:CD:2C:9B:B1 SHA1 Fingerprint: 59:4F:2D:D1:03:52:C2:36:01:38:EE:35:AA:90:6F:97:3A:A3:0B:D3 SHA256 Fingerprint: 15:E8:0A:75:06:73:AB:FB:DC:D2:FA:FC:02:82:3C:91:FE:6C:8C:36:E0:07:88:44:2C:87:54:D7:28:EC:37:17</p>
<p><b>Encryption Everywhere DV TLS CA - G2</b></p> <p><a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Issuer: DigiCert Global Root G2 Valid until: 27/Nov/2027 Serial #: 0D:E0:FF:85:EE:62:CB:61:10:9F:60:8C:9C:ED:5E:D3 SHA1 Fingerprint: ED:63:02:68:4A:32:59:AA:04:F1:0F:E9:A9:7A:8F:D3:0B:96:5D:26 SHA256 Fingerprint: B1:AC:8C:FB:18:1B:9C:93:54:E1:77:5F:CB:DF:CF:E7:89:8C:5C:09:A1:7D:76:31:58:57:01:12:EE:E5:52:34</p>
<p><b>GeoTrust EV RSA CA 2018</b></p> <p><a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Issuer: DigiCert High Assurance EV Root CA Valid until: 06/Nov/2027 Serial #: 03:FE:EF:1B:B5:B6:48:34:9A:20:95:0F:8B:C6:97:53 SHA1 Fingerprint: A3:99:04:64:17:86:7E:32:0D:3E:FA:69:D7:DC:E6:B8:BF:E8:A9:F2 SHA256 Fingerprint: 18:5C:0A:E4:70:42:3B:9D:46:78:A7:C1:05:5B:5B:48:D9:07:05:50:5B:79:4E:21:5C:06:38:51:33:69:81:F4</p>
<p><b>GeoTrust RSA CA 2018</b></p> <p><a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Issuer: DigiCert Global Root CA Valid until: 06/Nov/2027 Serial #: 05:46:FE:18:23:F7:E1:94:1D:A3:9F:CE:14:C4:61:73 SHA1 Fingerprint: 7C:CC:2A:87:E3:94:9F:20:57:2B:18:48:29:80:50:5F:A9:0C:AC:3B SHA256 Fingerprint: 8C:C3:4E:11:C1:67:04:58:24:AD:E6:1C:49:07:A6:44:0E:DB:2C:43:98:E9:9C:11:2A:85:9D:66:1F:8E:2B:07</p>
<p><b>GeoTrust TLS RSA CA G1</b></p> <p><a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Issuer: DigiCert Global Root G2 Valid until: 02/Nov/2027 Serial #: 0D:07:78:2A:13:3F:C6:F9:A5:72:96:E1:31:FF:D1:79 SHA1 Fingerprint: 8B:3C:5B:9B:86:7D:4B:E4:6D:1C:B5:A0:1D:45:D6:7D:C8:E9:40:82 SHA256 Fingerprint: C0:6E:30:7F:7C:FC:1D:32:FA:72:A4:C0:33:C8:7B:90:01:9A:F2:16:F0:77:5D:64:97:8A:2E:CA:6C:8A:23:0E</p>
<p><b>RapidSSL ECC CA 2018</b></p> <p><a href="#">Download PEM</a>   <a href="#">Download DER/CRT</a></p>	<p>Issuer: DigiCert Global Root CA Valid until: 06/Nov/2027 Serial #: 0D:5E:0E:1D:E2:31:A1:C1:0A:1C:FC:69:0D:E3:B7:7C SHA1 Fingerprint: 63:B7:6F:FF:3B:38:64:EE:B5:49:B1:E3:78:51:D4:6B:60:3F:ED:DC SHA256 Fingerprint: A0:D1:52:3A:0B:F6:63:55:0E:B9:08:1E:9B:DD:ED:A1:28:14:F9:57:0B:76:97:D9:5D:F2:EA:53:D4:FF:75:E3</p>