OPC Foundation Security Bulletin

Security Update for the OPC UA Client Applications

Published: September 25th, 2018
Version: 1.0

Executive Summary

This security update resolves a vulnerability in OPC UA client applications that could allow attacker to decrypt passwords sent to an OPC UA Server when the attacker has control over a piece of network infrastructure. The fix requires that OPC UA clients refuse to use untrusted certificates to encrypt data sent to the OPC UA server. This vulnerability only exists when the client uses UserIdentityToken encryption while establishing a Session with SecurityMode None.

Vendors need to review their applications and ensure trusted certificates are used before encrypting any UserIdentityToken.

This security update is rated 5.3 (medium) using the CVSS v3.0 guidelines.

The CVSS vector string is:

Affected Software

The following software downloads provided by the OPC Foundation are affected:

<table>
<thead>
<tr>
<th>Download</th>
<th>Release Date</th>
<th>Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>UA-.NETStandard Stack and Sample Code</td>
<td>Any version after date of fix.</td>
<td>Commit in GitHub on 2018-07-17.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NuGet Packages: Version 1.4.353.15 or later.</td>
</tr>
</tbody>
</table>

OPC Foundation Vulnerability Information
**CVE-2018-12087**  
Vulnerabilities and Exposures list:

<table>
<thead>
<tr>
<th>Vulnerability</th>
<th>CVE number</th>
<th>Publicly disclosed</th>
<th>Exploited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to validate certificates in OPC UA clients communicating without security allow attackers with control over a piece of network infrastructure to decrypt passwords.</td>
<td>CVE-2018-12087</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Mitigating Factors**

This attack only affects UserIdentityTokens encrypted when using SecurityMode None.

The attacker requires control over network infrastructure such as a router.

**Workarounds**

Clients can be configured to not allow the use of the SecurityMode None policy.

**Acknowledgments**

The OPC Foundation recognizes Bernd Edlinger at Softing for discovering and reporting this issue.

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**Revisions**

- V1.0 (September 25th, 2018): Bulletin published.