Cyber Security Advisory #06/2021

Stack crash in B&R Industrial Automation X20 EthernetIP Adapter

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Executive Summary

CVE-2021-20987  Stack crash in B&R Industrial Automation X20 EthernetIP Adapter
Improper buffer restrictions in the EtherNet/IP component of B&R Industrial Automation X20IF10D3-1 revisions prior to 1.5 and X20cIF10D3-1 revisions prior to 1.5 may allow an unauthenticated and network based attacker to potentially enable a denial of service or to execute code.

Affected Products

Affected versions: Please refer to Table 1

<table>
<thead>
<tr>
<th>Material Number</th>
<th>Affected hardware revision</th>
<th>Patched hardware revision</th>
<th>Patch Availability</th>
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</thead>
<tbody>
<tr>
<td>X20IF10D3-1</td>
<td>&lt;1.5.0.0</td>
<td>1.5.0.0</td>
<td>Sept 2020</td>
</tr>
<tr>
<td>X20cIF10D3-1</td>
<td>&lt;1.5.0.0</td>
<td>1.5.0.0</td>
<td>Sept 2020</td>
</tr>
</tbody>
</table>

Table 1: Overview on affected, patched versions and release dates

Vulnerability ID

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Vulnerability Severity

The severity assessment is based on the FIRST Common Vulnerability Scoring System (CVSS) v3.1.

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CVSS v3 Base Score: 7.5 (High)
CVSS v3 Vector: CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:H

Corrective Actions or Resolution

The described vulnerabilities will be fixed in the product versions as listed in Table 1.
B&R recommends applying product updates at the earliest convenience.

Vulnerability Details

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Description
B&R products X20IF10E3-1 and X20cIF10E3-1 are affected by a vulnerability of Hilscher EtherNet/IP Core V2.
The EtherNet/IP Core V2 processes a CIP service request received from the network. During that process, the attached service data is copied into an internal buffer without checking the size of the data.
This can result in memory corruption which in turn could be used for remote code injection and a denial-of-service attack.

**Impact**

An attacker could leverage this vulnerability with specially crafted packets which may cause denial of service, remote code execution and code exposure

**Workarounds and Mitigations**

B&R has not identified any workarounds or mitigating factors. In general, B&R recommends implementing the B&R [Cyber Security Guideline](https://www.br-automation.com/en/service/cyber-security/).

**Supporting information and guidelines**

The B&R Cyber Security webpage provides further information including Cyber Security guidelines. Please find these resources here: [https://www.br-automation.com/en/service/cyber-security/](https://www.br-automation.com/en/service/cyber-security/)

**References**

[1] Hilscher Cyber Security


**Document History**

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