



Security Advisory No. 001

Date: 22nd Dec 2021

NicheStack Embedded TCP IP Stack Vulnerabilities (INFRA:HALT)

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Last updated: 2022-11-24, added fixed firmware versions for PDEG, PDEB, DDRC-GRMS-E

Advisory Title

Niche Ethernet stack vulnerabilities can lead to Denial of Service and Breach of Integrity if triggered by specially crafted IP packets.

Summary

Philips Dynalite is aware of multiple vulnerabilities in HCC Embedded's NicheStack TCP/IP third party component, which is integrated into Philips Dynalite's PDEG, PDEB, DDRC-GRMS-E, and DDBC320-Dali v3 (Ethernet).

Security researchers disclosed 14 vulnerabilities in the NicheStack TCP/IP component, of which 8 impact Philips Dynalite's PDEG, PDEB, DDRC-GRMS-E, and DDBC320-Dali v3 (Ethernet) products.

Advisory CVE IDs

| CVE ID | CVSSv3.1 base score | Affected protocols | Affected products | Firmware fix info |
|--------------------------------|---------------------|--------------------|---|--|
| CVE-2021-31226 | 9.8 | HTTP | PDEG | PDEG 3.57b5 |
| CVE-2021-27565 | 7.5 | HTTP | PDEG | PDEG 3.57b5 |
| CVE-2021-31227 | 7.5 | HTTP | PDEG | PDEG 3.57b5 |
| CVE-2020-35685 | 9.1 | TCP | PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet) | <ul style="list-style-type: none">• PDEG/PDEB 3.57b5• DDRC-GRMS-E 1.08b1• DDBC320-Dali v3 - FW release pending |
| CVE-2021-31400 | 7.5 | TCP | PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet) | <ul style="list-style-type: none">• PDEG/PDEB 3.57b5• DDRC-GRMS-E 1.08b1• DDBC320-Dali v3 - FW release pending |

| | | | | |
|--------------------------------|-----|------|---|--|
| CVE-2021-31401 | 7.5 | TCP | PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet) | <ul style="list-style-type: none"> • PDEG/PDEB 3.57b5 • DDRC-GRMS-E 1.08b1 • DDBC320-Dali v3 - FW release pending |
| CVE-2020-35683 | 7.5 | ICMP | PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet) | <ul style="list-style-type: none"> • PDEG/PDEB 3.57b5 • DDRC-GRMS-E 1.08b1 • DDBC320-Dali v3 - FW release pending |
| CVE-2020-35684 | 7.5 | TCP | PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet) | <ul style="list-style-type: none"> • PDEG/PDEB 3.57b5 • DDRC-GRMS-E 1.08b1 • DDBC320-Dali v3 - FW release pending |

Legend: "FW release pending" = Philips Dynalite will release fixed firmware for this issue. The release date has not been defined yet.

Affected products

| | |
|----------------------------|---------------------------------|
| PDEG/PDEB | Firmware version 3.55 and prior |
| DDRC-GRMS-E | Firmware version 1.06 and prior |
| DDBC320-Dali v3 (Ethernet) | Firmware version 2.03 and prior |

Obtaining Software Fixes

Software fixes will be made available through the Philips Dynalite Distributor Support website.

<https://support.dynalite.com/>

Mitigations and Workarounds

Customers using the affected devices are strongly recommended to operate the devices in closed networks or protected with a suitable firewall. Use network segmentation to minimize exposure to untrusted networks.

In addition, there are specific workarounds that customers can apply to reduce the risk of exploit:

- For the PDEG, disable the webserver in the device if it is not required, or whitelist HTTP connections. This will mitigate the three HTTP vulnerabilities CVE-2021-31226, CVE-2021-31227, and CVE-2021-27565.
- A properly configured firewall will greatly reduce the risk of malformed TCP and ICMP packets, to mitigate CVE-2021-31400, CVE-2021-31401, and CVE-2020-35684.

Additional Information

The products listed in this advisory are only affected by the subset of vulnerabilities listed here. They are not affected by the other vulnerabilities that are part of the "INFRA:HALT" publication.

More detail and in-depth advice on mitigations can be found in this Forescout [blog](#).

Philips Dynalite supports responsible vulnerability disclosures and encourages researchers and ethical hackers to report identified vulnerabilities. For more information visit our [Vulnerability Disclosure page](#).

Acknowledgements

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