

# Security Advisory No. 001

Date: 22nd Dec 2021

# NicheStack Embedded TCP IP Stack Vulnerabilities (INFRA:HALT)

Advisory ID: PD-2021-0001 Document Version: 1.2 First published: 2021-12-22

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	ТСР	PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet)	<ul> <li>PDEG/PDEB 3.57b5</li> <li>DDRC-GRMS-E 1.08b1</li> <li>DDBC320-Dali v3 - FW release pending</li> </ul>
CVE-2021-31400	7.5	ТСР	PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet)	<ul> <li>PDEG/PDEB 3.57b5</li> <li>DDRC-GRMS-E 1.08b1</li> <li>DDBC320-Dali v3 - FW release pending</li> </ul>

CVE-2021-31401	7.5	ТСР	PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet)	<ul><li>PDEG/PDEB 3.57b5</li><li>DDRC-GRMS-E 1.08b1</li><li>DDBC320-Dali v3 - FW release pending</li></ul>
CVE-2020-35683	7.5	ICMP	PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet)	<ul> <li>PDEG/PDEB 3.57b5</li> <li>DDRC-GRMS-E 1.08b1</li> <li>DDBC320-Dali v3 - FW release pending</li> </ul>
CVE-2020-35684	7.5	ТСР	PDEG, PDEB, DDRC-GRMS-E, DDBC320-Dali v3 (Ethernet)	<ul> <li>PDEG/PDEB 3.57b5</li> <li>DDRC-GRMS-E 1.08b1</li> <li>DDBC320-Dali v3 - FW release pending</li> </ul>

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 <u>Vulnerability Disclosure</u> <u>page</u>.

#### **Acknowledgements**

These vulnerabilities were discovered and reported jointly by <u>Forescout Research Labs</u> and <u>JFrog Security Research</u>. We appreciate the coordinated disclosure of this vulnerability by the finders.

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