



Product Support Notice

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PSN # PSN020425u

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Severity/risk level

Medium

Urgency

Immediately

Name of problem **PSN020425u – G4xx Gateway WindRiver VxWorks IPNet Vulnerabilities**

Products affected

G450 Media Gateway

G430 Media Gateway

Problem description

On the 29th of July 2019, Wind River and security researchers at Armis disclosed a series of vulnerabilities affecting the VxWorks operating system version 6.5 and later.

CVE	CVSSv3 Score	Title
CVE-2019-12256	9.8	Stack overflow in the parsing of IPv4 packets' IP options
CVE-2019-12257	8.8	Heap overflow in DHCP Offer/ACK parsing inside ipdhcpc
CVE-2019-12255	9.8	TCP Urgent Pointer = 0 leads to integer underflow
CVE-2019-12260	9.8	TCP Urgent Pointer state confusion caused by malformed TCP AO option
CVE-2019-12261	8.8	TCP Urgent Pointer state confusion during connect() to a remote host
CVE-2019-12263	8.1	TCP Urgent Pointer state confusion due to race condition
CVE-2019-12258	7.5	DoS of TCP connection via malformed TCP options
CVE-2019-12259	6.3	DoS via NULL dereference in IGMP parsing
CVE-2019-12262	7.1	Handling of unsolicited Reverse ARP replies (Logical Flaw)
CVE-2019-12264	7.1	Logical flaw in IPv4 assignment by the ipdhcpc DHCP client
CVE-2019-12265	5.4	IGMP Information leak via IGMPv3 specific membership report

For more information see: <https://www.windriver.com/security/announcements/tcp-ip-network-stack-ipnet-urgent11/>

The G450 and G430 Media Gateways versions 31.17.0 and later use an affected operating system version. Successful exploitation of those vulnerabilities may have an impact on operation and could allow an unauthorized user to trigger denial of service conditions or execute arbitrary code.

The gateways are not affected by all vulnerabilities:

G430	CVE-2019-12256 and CVE-2019-12260 only affect G430s with hardware version 3. CVE-2019-12257 and CVE-2019-12264 have no impact because the VxWorks DHCP client is not used. CVE-2019-12262 has no impact because RARP packets are not forwarded to the VxWorks network stack
G450	CVE-2019-12256 and CVE-2019-12260 have no impact because the affected VxWorks version is not used. CVE-2019-12257 and CVE-2019-12264 have no impact because the VxWorks DHCP client is not used CVE-2019-12262 has no impact because RARP packets are not forwarded to the VxWorks network stack

Resolution

Avaya is developing new firmware images to address these vulnerabilities in the VxWorks software:

- 7.1.3.4 loads 39.28.0 / 39.28.30
- 8.0.1.2 loads 40.31.0 / 40.31.30
- 8.1.0.1 loads 41.10.0 / 41.10.30

In the meantime, Avaya strongly recommends following networking and security best practices by implementing firewalls, ACLs, physical security or other appropriate access restrictions to protect themselves from these vulnerabilities.

For applications where devices reside behind a firewall, the "TCP Urgent Pointer" vulnerabilities can be mitigated via the firewall. Administrators can add a rule to drop/block any TCP segment where the URG flag is set.

IP packets with options (that can affect the G430 hardware version 3) can also be blocked with an internal gateway access control list, for example:

```
G430v3-011(super)# ip access-control-list 301
G430v3-011(super-ACL 301)# ip-option-in Deny
G430v3-011(super-ACL 301)# exit
G430v3-011(super)# interface Vlan 1
G430v3-011(dev-if:Vlan 1)# ip access-group 301 in
```

To determine if the G430 is hardware version 3, you can use the Communication Manager 'list media-gateway' command or the 'show system' CLI command on the gateway.

Workaround or alternative remediation

n/a

Remarks

n/a

Backup before applying the patch

n/a

Download

n/a

Patch install instructions

Service-interrupting?

n/a

No

Verification

n/a

Failure

n/a

Patch uninstall instructions

n/a

Security Notes

The information in this section concerns the security risk, if any, represented by the topic of this PSN.

Security risks

n/a

Avaya Security Vulnerability Classification

Not Susceptible

Mitigation

n/a

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