

# Digi Accelerated Linux (DAL) Release Notes

## IX-series

### Version 21.5.56.106

## INTRODUCTION

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This is a major firmware release for all DAL supported products

## SUPPORTED PRODUCTS

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- Digi IX10
- Digi IX14
- Digi IX15
- Digi IX20/IX20W
- Digi IX20-PR/IX20W-PR

## KNOWN ISSUES

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- Cellular metrics are not shown under the **Settings → Status → Communications** section of Digi Remote Manager, but are shown under the **Data Streams** for the device. [DALP-768]
- Health metrics are uploaded to Digi Remote Manager unless the **Monitoring > Device Health > Enable** option is de-selected and either the **Central Management > Enable option** is de-selected or the **Central Management > Service** option is set to something other than Digi Remote Manager [DAL-3291]
- The ability to send/receive data through a T-Mobile SIM in a 1003-CM11 (Telit LM940) modem running firmware version 24.01.547 can be delayed up to 15 minutes after initially connecting (downgrade the 1003-CM11 modem to 24.01.544 or older firmware to mitigate) [DAL-4981]

## UPDATE BEST PRACTICES

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Digi recommends the following best practices:

1. Test the new release in a controlled environment with your application before you update production devices.
2. Unless otherwise noted, apply updates in the following order:
  - a. Device firmware
  - b. Modem firmware
  - c. Configuration
  - d. Application

Digi recommends Digi Remote Manager or Digi aView for automated device updates. For more information, follow the instructions for Digi Remote manager or Digi aView in the links below:

1. **Instructions for Digi Remote Manager:**

[https://www.digi.com/resources/documentation/digidocs/90001436-13/default.htm#tasks/t\\_update\\_device\\_firmware.htm](https://www.digi.com/resources/documentation/digidocs/90001436-13/default.htm#tasks/t_update_device_firmware.htm)

## 2. Instructions for Digi aView:

<https://www.digi.com/resources/documentation/digidocs/acl-kb/default.htm#Subsystems/kb-6300-cx/update-firmware.htm>

If you prefer manually updating one device at a time, follow these steps:

1. Download the firmware file from the [Digi firmware support page](#).
2. Connect to the device's web UI by connecting your PC to the LAN Ethernet port of the device and then going to <http://192.168.210.1>.
3. Select the **System** tab on the top navigation bar of the page, then select **Firmware Update**.
4. Select the **Browse** button in the **Upload file** section.
5. Browse for and select the downloaded firmware file.
6. Click the **Update Firmware** button.

## TECHNICAL SUPPORT

Get the help you need via our Technical Support team and online resources. Digi offers multiple support levels and professional services to meet your needs. All Digi customers have access to product documentation, firmware, drivers, knowledge base and peer-to-peer support forums.

Visit us at <https://www.digi.com/support> to find out more.

## CHANGE LOG

**Mandatory release** = A firmware release with a critical or high security fix rated by [CVSS score](#).

For devices complying with ERC/CIP and PCIDSS, their guidance states that updates are to be deployed onto device within 30 days of release

**Recommended release** = A firmware release with medium or lower security fixes, or no security fixes

Note that while Digi categorizes firmware releases as mandatory or recommended, the decision if and when to apply the firmware update must be made by the customer after appropriate review and validation.

### VERSION 21.5.56.106 (May 31, 2021)

This is a **mandatory** release

Firmware	sha512sum	md5sum
IX10-21.5.56.106.bin	ec6989222c10826f1b8248dd7d17e573fabcd435bc03bca0e3111c8debd38f62431835e2c1dd348b9eb8f62d78e3b27879954c73ce28375f2b45dee7e7fd216	461c270cba2f0393dd2283e610d7d8f2
IX14-21.5.56.106.bin	098c09f80df65dfffa9050fab0d38bfb7f08d84b3964e137cc93a358551f7217d31bff65908ad9d6c724354f4634acd2a0aaf662af6e643bd63aae3ffeeafac9b4	976fe84d343cb7c4120a0d44f11297ed
IX15-21.5.56.106.bin	972d7a1bc7bbfb80040aed46c12f97626566872e4d379218509ac7aac8fc2de62fc50843ec87dc214792cbc3b5f375c90c5d8a8c244b6a49b0b35366a6c949ce	f038938d9a556142fca3c923055e31
IX20-21.5.56.106.bin	dc240873c338e5fb7df1df47e00664be7d896965808765958b67da9f16239f86fc13e2d9e8d79f61e1c4650121822006591986ef48afd9cfb6113987e27c1e76	4487a01d3a5430f448daf61a68129471
IX20-PR-21.5.56.106.bin	f2b98641e5d62a461f3e4c2dd7e3db63f1aa04a972fd4414ee9af893d693f3b5dd803e1095b9d2fcb210d9ca2664ac317a165e33a89f1c12d7288713b00c76f	5c13536b93607cbb6b0d2ad4799ab8cb

IX20W-21.5.56.106.bin	6f25269f1e35dbf61e536b33c9a6982196e83ca28ef4cd2652946e261899c6d7a6ba4351fb07eac1d0a240b86a4888d0fbc61e67fe45f5905451e1cc76ab7e91	34fc88207b8187623044ad8b8650a9dc
IX20W-PR-21.5.56.106.bin	4c70cbf4ccc7c2e9e98868a4bb85402c725a4fd88f35f001ab74ef450c2983f42545d66d53672fdaa00e1d6ad86bee661e61030059a2693784ceed69d4af8406	a487820df1e6f09714ad49e54dcfaef1

## FEATURES

- Added options under **VPN → IPsec → tunnels → Remote** endpoint to add multiple endpoints and either round-robin between the endpoint or randomly select an endpoint to establish the tunnel to [DALP-160]
- Added options under **VPN → IPsec → Advanced** to control IKE retransmit interval, IKE timeout, tunnel retry interval, and tunnel retry timeout [DALP-564]
- New Surelink configuration options [DALP-787, DALP-274, & DALP-84]
  - Restart fail count** and **Reboot fail count** options to specify how many times the Surelink test must run and fail before a reboot/restart action is taken
  - Pass threshold** option to specify the number of times Surelink tests must pass before the interface is marked as working
  - New **Test another interface's status** test type to pass/fail Surelink based on whether another network interface is up/down and has IP connectivity
- SNMPv2c read-only support [DALP-809]
- Enable SCEP client support for IPsec tunnel authentication [DALP-722]
- Add **Scan** button on the Modem status page to initiate a network scan, list available carriers the SIM can connect on, and allow the user to select a particular PLMN/network to use [DAL-4338]
- Add default **digi.device** local domain for simpler SSH/web access [DAL-4598]
  - Requires using the Digi device as your DNS server for resolving digi.device to an IP address
- New **UDP serial** mode that can be applied to one or more serial ports for setting up outbound serial-over-UDP connections [DALP-696]
- New **Autoconnect** options for streaming outbound serial traffic when in remote access mode
- Support for WPA3 Wi-Fi encryption [DALP-701]
  - WPA2/WPA3 Personal
  - WPA3 Enhanced Open
  - WPA3 Personal
- Support for WPA and WPA/WPA2 mixed modes with TKIP support [DALP-827]

## ENHANCEMENTS

- Add **System → Scheduled tasks → Reboot window** config option to add a random delay to the **Reboot time** if configured [DAL-4741]
- Add read-only console access via Digi Remote Manager [DALP-336]
- Add support for receiving additional remote commands from Digi Remote Manager:
  - Perform a speed test and send the results to DigiRM [DALP-490]
  - Perform automated cellular modem firmware update [DAL-4850]
- Add option to retain the unique default password of the admin user when initially configuring the device [DALP-758]
- Improved **Firewall → Port forwarding** options to support a range of ports, including 1:1 and many-to-one port mappings [DALP-560]

6. Added options to control packet filtering for the **Network → Analyzer** traffic analyzer [DALP-733]
7. Update voice settings on Telit and Quectel modems for continued connectivity after AT&T's 3G network sunset in February 2022 [DALP-760]
8. Add internet.gma.iot T-Mobile APN to fallback list [DAL-4906]
9. Support for Sierra cellular modem firmware with multiple CWE files in a single tarball [DAL-4860]
10. Include error messages along with error code if an issue is encountered when downloading device or cellular modem firmware [DAL-4854]
11. Added **Authentication → LDAP → Login attribute** configuration option to control the attribute ID used so it can match with the attribute set in an Active Directory server [DALP-120]
12. Update the titles of the columns in the **show dhcp-lease** CLI output to be more descriptive
13. Add **show dns** CLI command to display the active DNS servers and what interface they're associated to [DAL-3639]
14. Add **show ntp** CLI command to display the status of the NTP service and if it has synced with an external time server [DAL-4747]
15. Add **system firmware ota** commands to check, list, and update to new firmware from the Digi firmware server [DAL-4800]
16. Skip Auto-APN detection and use internet.telekom APN by default for Deutsche-Telekom SIMs [DAL-4622]
17. Add LWM2M parameters to include AT&T Host IDs for devices with EM9191/LM940/LM960 modems [DAL-4823, DAL-4844, & DAL-4845]
18. Update from Quagga to FRRouting for BGP OSPF, RIPNG, and other routing services [DAL-4798]
19. Update python to version 3.6.13 [DAL-3190]
20. Return proper status code for custom scripts configured on the device [DAL-4670]
21. Rename MAC address filtering options to be called **Allowlist** and **Denylist** [DAL-4677]

## BUG FIXES

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The below bugs are all present on firmware versions 21.2.39.67 and older unless otherwise specified

1. Fixed issue when authenticating users if multiple TACACS servers were configured and the first server is unresponsive [DAL-4748]
2. Clear PDP cid 1 APN for Verizon SIMs using a vzwentp private APN with a ME910c1-WW modem [DAL-4525]
3. Fixed issue preventing devices with LM940 modems from automatically connecting with T-Mobile Hungary SIMs [DAL-4679]
4. Fixed issue where outbound SMS messages couldn't be sent using various carrier SIM cards (bug present on firmware versions 21.2.39.67 through 19.11.x) [DAL-4794]
5. Fixed issue where cellular connectivity wouldn't re-establish if a Quectel modem reset itself [DAL-4612]
6. Fixed issue where the device could stop participating in RIP routing if network interfaces are reset [DAL-4704]
7. Fixed issue where RIP, BGP, and other routing services would not setup properly if a user updated the configuration for the routing services on the device [DAL-4784]
8. Fixed issue preventing acceptance of default routes advertised via RIP [DAL-4799]
9. Fix issue preventing GRE interfaces from being specified within BGP and other routing services [DAL-4695]
10. Fixed issue preventing VPN tunnels from being specified within port forwarding rules [DAL-

- 4524]
11. Fixed issue preventing configuration options from being applied en-masse from the CLI when using the output from the **show config cli\_format** command [DAL-4713]
  12. Fixed bug where a running network analyzer could be stopped in the CLI by issuing **Ctrl-C** [DAL-4652]
  13. Fixed issue where GPS-based location health metrics weren't being sent to Digi Remote Manager (Bug present on firmware versions 21.2.x) [DAL-4310]
  14. Fixed issue where the status of an OpenVPN client wasn't listed properly in the web UI [DAL-4357]
  15. Fixed issue preventing access to multiple remote networks through an IPsec tunnel with the same policy [DAL-4816]
  16. Fixed issue preventing multi-VRRP setups from setting up with the proper priority [DAL-4824]
  17. Fixed issue where devices could try recovering Sierra modems in the middle of a modem firmware update [DAL-3929]
  18. Fixed issue on the **Serial Configuration** page in the web UI where users could inadvertently bring up the Copy dialog window by dragging and dropping any element from the page [DAL-4923]
  19. Fixed issue where wired Internet connectivity is interrupted during cellular modem firmware updates [DAL-4647]
  20. Removed broken Babel routing service (bug present on firmware versions 21.2.39.67 through 19.11.x) [DAL-4769]
  21. Fixed overlapping 5GHz Wi-Fi channel ranges causing AP/client conflicts in connecting in Switzerland and Liechtenstein [DAL-4733]
  22. Removed error message caused by inability to access file descriptors on PR products [DAL-4930]
  23. Use PDP cid 1 for Telstra SIMs with a Quectel EG25-G modem [DAL-4810]
  24. *IX14*: Fixed issue preventing IX14 units from updating their cellular modem to firmware version 20.00.xx7 [DAL-4867]
  25. *IX10/IX15*: Fixed issue where RS485 serial connections would spit out junk messages during bootup [DAL-4724]

## SECURITY FIXES

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The highest level vulnerability that has been fixed in this release is listed as a Critical CVSS score of **9.8 Critical**

1. Reduce password complexity to 8-character minimum (PR products still have 10-character minimum) [DAL-4506]
2. Update to OpenSSL 1.1.1k [DAL-4755]
  1. CVE-2021-3450 CVE-2021-3449
3. Update libcurl to version 7.76.0 [DAL-4774]
  1. CVE-2021-22876  
CVE-2021-22890
4. Update netsnmp to version 5.9 [DAL-4669]
  1. CVE-2018-18066
5. Update tcpdump to version 4.99.0 [DAL-4587]
  1. CVE-2018-10103 CVE-2018-10105 CVE-2018-14461 CVE-2018-14462 CVE-2018-14463  
CVE-2018-14464 CVE-2018-14465 CVE-2018-14466 CVE-2018-14467 CVE-2018-14468  
CVE-2018-14469 CVE-2018-14470 CVE-2018-14879 CVE-2018-14880 CVE-2018-14881  
CVE-2018-14882 CVE-2018-16227 CVE-2018-16228 CVE-2018-16229 CVE-2018-16230

CVE-2018-16300 CVE-2018-16451 CVE-2018-16452 CVE-2019-15166  
CVE-2020-8037

6. Reduced listening network services to least-privilege access [DAL-4703]
7. Removed weak SSH algorithms and protocols [DALP-817]
  1. **Removed MAC Algorithms:** umac-64-etm@openssh.com, hmac-sha1-etm@openssh.com, umac-64@openssh.com, hmac-sha1
  2. **Removed Key Exchange Algorithms: diffie-hellman-group16-sha512, diffie-hellman-group18-sha512, diffie-hellman-group14-sha256**

## VERSION 21.2.39.79 (April 1, 2021)

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This is a **Recommended** release

IX20-21.2.39.67.bin

SHA512:

3dbcf33a66474d7fdb308d292868f8a044207f687039afb9404ae44d1feb30925075a993  
5cbb395a868398514343a2e97e0c4fd62ce1eda373152f6c13a86c3

MD5: 5aca7b9224e9d3104eb0f29d29883cf6

IX20-PR-21.2.39.67.bin

SHA512:

176308c72b7a706ca0c036314944a5b88a4e8451b3a5f9fe8230ee61588db265e27bf987  
21f5d23af83657a6baa68d7adc5d825498dab291ee2ccafeb5e98c95

MD5: 3993f737da1d405ce36fa7e0370ccd14

IX20W-21.2.39.67.bin

SHA512:

4bfb707b256352b2a44cde67ae2700c1f9f02acc785ab52a521934a5dec2b88f01b6564b  
05a7d3ee2be5ff3958273b9dc8eca17407e1efd24c985989f2b275a0

MD5: 1904551bb372c568cba6fc644912b18e

IX20W-PR-21.2.39.67.bin

SHA512:

f721b6ba36cc555b88e9e515dc6a96eae53b32abbe03b86e5d7158b5752078e2953d0cf  
67b55316dec12b073e413aa5113245d388ff8b470eebd4da002a32db7

MD5: aa85293fdc99c41c7a8b50926e029c46

## BUG FIXES

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26. *IX20W*: Fixed issue where Wi-Fi network crashes when under heavy load [DAL-4667]

## VERSION 21.2.39.67 (February 27, 2021)

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This is a **mandatory** release

IX14-21.2.39.67.bin

SHA512:

39234c8644fff88e0ac8503e80e023f92ebe768a5ce9cd7648be38e202fd592e0fd9f35ab4  
4fddd3d9321d50c42ad1146ae089875ffe8cccb0e60e23dd863502

MD5: d6ed79ec3b2db14738451c15038fd5aa

IX10-21.2.39.67.bin

SHA512:

72a8ef1e4e892ea431b101063eb040b6cffe37351f7d27556836a33915f0cf8e241b2296ed  
2d6cc3d69e2dee05bdba08273d58f81f2333fa36d88bc17a087547

MD5: 8e7d2ca15d40de7d7955fa5d5d7773cc

IX20-21.2.39.67.bin

SHA512:

525dbe3d67ae2db90c3c28bb98acbab9b893be87e7432d3930baad8fe827bed5a92231e8c7eaa4a9b945b231ddcb9f5972d552dc52aedabdcd1711431e281a1d

MD5: 1b6bc3ac24b0bd009177c77d076efbf8

IX20-PR-21.2.39.67.bin

SHA512:

33b393e3bfd347070b4086267dd29dfe327e2c81ae8a695635433f2fdbb156cd29af3ceb86feaf5731b7fc8fb07b58ba010ee1a749c2d165467d5e3b6428fd30

MD5: b8a737e16faee85f34678e2d9de8e330

IX20W-21.2.39.67.bin

SHA512:

ac896a32a704728834385eae13555d07c7901c8f74794c1848e592b1570268df0f9b4149f13f24bb807742cdfc493323d82ad9386efe33e82d118e403c1a8f1b

MD5: efa574c9e98186bddcbafdb2c7df56f9

IX20W-PR-21.2.39.67.bin

SHA512:

a3feb157fb421d8787d5f8c51a898f3bd88954874d7dd967ed56fd5fae60e25cead4cc4024eb0384b556635436bbc068e876721f4e44c0845b1deb9021f6307e

MD5: 3c1900f45ed730d15ae13ea5d074481c

## FEATURES

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1. Add the Location service to all DAL products. DAL devices can utilize several location sources (cellular, GNSS, or user defined) to determine where it's located and report that to Digi Remote Manager or other servers [DAL-724]
2. Add geo-fencing configuration options. This new features is found under **Services → Location → Geofence**. It can be utilized to define one or more circular or polygonal geo-fence areas and then perform a set of actions when the device enters or leaves that area. Current options for actions to perform are either factory erasing the device or running a custom script. [DALP-711]
3. New **modem scan** CLI command for listing available carriers for the current modem and SIM setup.
4. New **Network → Interface → Modem → Network PLMN ID** config setting to lock the SIM card to a particular carrier based on its PLMN ID(note that the **Carrier selection mode** must be set to **Manual** or **Manual/Automatic** in order to lock the SIM to a specific carrier) [DALP-637]
5. Added local API to the web UI for automated configuration of the device [DALP-777]
6. Support remote CLI commands through Digi Remote Manager [DAL-4273]
7. New configuration options under **System → Scheduled tasks → System maintenance** to automatically check for device and modem firmware updates, then notify in the CLI and web UI when updates are available [DAL-4413]

## ENHANCEMENTS

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1. Added new **DFS Client Support** configuration setting to support 5GHz DFS Wi-Fi channels in client mode [DALP-720]
2. Add 5GHz frequencies to the list of channels that can be scanned for client-mode Wi-Fi background scanning [DAL-2570]
3. Set 2.4GHz default Wi-Fi bandwidth to 20MHz [DALP-772]
4. Update default background scanning settings for Wi-Fi clients to the following:
  1. Scan threshold: -75dB
  2. Short interval: 5s

3. Long interval: 300s
5. Updated Surelink recovery of Wi-Fi connections to restart the Wi-Fi module if restarting the network connection fails to recover the setup [DAL-4387]
6. Added settings under **Authentication → Serial** to control Certificate Management for TCP and autoconnect serial port setups [DALP-682]
7. Allow hidden/debug config settings to be controlled and preserved by DigiRM [DAL-4445]
8. Asymmetric preshared keys for IPsec tunnels [DALP-707]
9. Don't display Aggressive/Main mode or Xauth selections for IKEv2 IPsec tunnels [DAL-4142]
10. Update name and description of certificate settings for OpenVPN clients and servers [DAL-4435]
11. Add digidevice.led python module to all products [DALP-710]
12. Add options to forward location information to a remote host over TCP [DALP-778]
13. Add new **Forward interval multiplier** configuration option under **Services → Location → Destination servers** to control the number of location update intervals to wait before sending location data to this server [DAL-4056]
14. Report location metrics as datapoints to DigiRM [DAL-4055]
15. Include the connection uptime of IPsec tunnels as datapoint metrics to Digi Remote Manager [DAL-4062]
16. Report the phone number of the SIM as a health metric datapoint to Digi Remote Manager [DAL-4440]
17. Fixed incorrect format of ICCID and IMEI metrics reported to Digi Remote Manager [DAL-4440]
18. Add iptables TRACE tool for enhanced firewall debugging [DAL-4182]
19. Improved accuracy of the status shown for a modem during a firmware update
20. *IX10/1002-CMG4*: Disable GEA1 on EG25-G modem [DAL-4250]
21. *IX10/1002-CMG4*: Disable voice services on EG25-G modules [DAL-4560]
22. *IX10*: Enable QXDM support on IX10 [DAL-4512]

## BUG FIXES

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1. *IX14*: Fixed reboot loop issue on IX14 device running default settings on 20.11.x firmware [DAL-4507]
2. Fixed issue with utilizing software flow control on serial ports set in remote-access mode [DAL-3630]
3. Fix issue where a serial port could lock up and prevent access if flow control was enabled [DAL-4585]
4. Fixed issue where non-primary DNS were queried through the wrong interface when **use\_dns** configuration option is set to primary [DAL-3156]
5. Report the phone number of the SIM as a health metric datapoint to Digi Remote Manager [DAL-4440]
6. Fixed incorrect format of ICCID and IMEI metrics reported to Digi Remote Manager [DAL-4440]
7. Fixed setup issue between custom firewall rules and IPsec tunnels [DAL-4433]
8. Fixed occasional issue preventing LM940 modems from re-establish their cellular connection after a modem firmware update [DAL-2933]
9. Fixed issue requiring a user to fix syslog configuration setting when updating from 20.5.x or older firmware to 20.8.x/20.11.x firmware [DAL-4426]
10. Fixed rare issue where **show system** CLI command would display incorrect uptime details [DAL-4350]



11. Fix issue with secondary CLI sessions showing stale configuration settings if the config is updated elsewhere [DAL-4446]
12. Updated message displayed in web UI to direct the user to refresh the page after erasing the device back to default settings [DAL-2326]
13. Fixed issue where dynamic DHCP leases were not displayed in the CLI or web UI (bug present on 20.11.x firmware versions) [DAL-4557]
14. Fixed inaccurate status of the Ethernet interface of a device in passthrough mode [DAL-4543]
15. Fixed issue preventing web UI access if two-factor authentication was enabled (bug present on 20.11.x firmware versions) [DAL-4509]
16. Fixed issue where CLI commands sent from DigiRM would crash the DAL device's connection to DigiRM [DAL-4412]
17. Fixed issue preventing WAN/cellular connections from working if the interface was configured with a single **Interface Up** Surelink test [DAL-4629]
18. Fix rare issue where Wi-Fi hotspots would stop responding to DHCP requests if restarted many times [DAL-4298]
19. Fixed output of the **show wifi ap name <ap\_name>** and **show wifi client name <client\_name>** CLI commands [DAL-1615]
20. Fixed inaccurate status of the Ethernet interface of a device in passthrough mode [DAL-4543]
21. *PR products*: Fixed issue preventing usage of the digidevice.config python module on PR firmware products [DAL-4378]
22. *1003-CM11*: Fixed occasional issue preventing LM940 modems from re-establish their cellular connection after a modem firmware update [DAL-2933]
23. *1003-CM11*: Fixed timing issue after updating firmware on LM940 modems that preventing the modem from reconnecting unless rebooted [DAL-4614]
24. Fixed issue causing aView-initiated speed tests to report the same upload/download speeds [DAL-4420]

## SECURITY FIXES

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The highest level vulnerability that has been fixed in this release is listed as a Critical CVSS score of 8.1 High

1. Update hostapd to address CVE-2019-16275 and CVE-2019-13377 [DAL-4232]
2. Update wpa\_supplicant to address CVE-2019-16275 [DAL-4233]
3. Update libcurl to version 7.74.0 (CVE-2020-8169, CVE-2020-8177) [DAL-4336]
4. Update to python version 3.6.12 (CVE-2020-14422) [DAL-4364]
5. Update OpenSSL to version 1.1.1i (CVE-2020-1971) [DAL-4326]
6. Update dnsmasq to version 2.83 (CVE-2019-14834, CVE-2020-25681, CVE-2020-25682, CVE-2020-25683, CVE-2020-25684, CVE-2020-25685, CVE-2020-25686, CVE-2020-25687) [DAL-3950]
7. Update web security settings with the following headers [DAL-4192]
  1. Pragma: no-cache
  2. Content-Security-Policy
  3. X-Content-Type-Options: nosniff
  4. X-XSS-Protection: 1; mode=block
8. Set SAMEORIGIN in X-Frame-Options to uppercase [DAL-4192]
9. Automatically de-activate active user logins/sessions if the password for that user changes
10. Removed support for https CBC ciphers [DAL-4408]

11. Fixed XSS vulnerability on serial page in the local web UI (Bug present on firmware versions 20.11.x and older) [DAL-4646]
12. *PR products*: Removed debug config options from PR firmware for changing https ciphers [DAL-4417]

## **VERSION 20.11.32.168 (December 23, 2020)**

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This is a recommended release.

### **ENHANCEMENTS**

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1. Use PDP context 1 with Telus carrier SIMs [DAL-4332]

### **BUG FIXES**

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1. Fixed bug preventing Ethernet speed/duplex adjustment (affects firmware version 20.11.32.138) [DAL-4414]
2. *IX10-only*: Fixed bug preventing serial port signal mode from being set to RS-485 when in application or modbus modes (affects firmware versions 20.11.32.138 through 20.8.22.32) [DAL-4424]

## **VERSION 20.11.32.138 (December 2, 2020)**

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This is a **mandatory** release

IX14-20.11.32.138.bin

SHA512:

723d71598e538fa1ad1dc4a54c9d80d6e7a0d2fcf67c9b040e8c181085e55a4f9958ace580b4fb68ebdaa4106ef1f9cba98520f43e54342fd5b13488cbde3e00

MD5: c0ffb2f67e9126ab15bb62cd92de94ab

IX10-20.11.32.138.bin

SHA512:

e4850185fa3714a4e15b78f620f3985bbe3c47564c7907a68a61b1a2814d7756d7c14fa811360ed6279bb7fd55fc47a6ba5a012a0a4c36d7852a312b366d454a

MD5: d1780394cbfdeb398e0dd7cfa8f07707

IX20-20.11.32.138.bin

SHA512:

00ed82ef515d85f624cbc8c5ccf04736f907e61e955655f7aa051c567599b69f7575892dbc214086b017176ce0260931601e3100d7c883bf1f3ff4f0cc9ec140

MD5: dce476fb431f95954776d783c26c2dda

IX20-PR-20.11.32.138.bin

SHA512:

12478faf7c902916ddd0e171efb19ba0b8773eec7ad6b97ba7bf797fefeb91cc3cfa57f078bfd475ac7692b2af22acfd2e63f3cb23e155c53d546d35162fc984

MD5: 2d0aa54d637a6579a9206dbf4b6b9797

IX20W-20.11.32.138.bin

SHA512:

a5f1fd71a11ac6f335124a709873b9315a9b46f01ed26ded488cc0b003e5d6cd0af93906f581494702dd06faf109a224e026246bb107945d9d8ba12bf970f27e

MD5: cdac8fb0a7cbb99649514d06f01680ec

IX20W-PR-20.11.32.138.bin

SHA512:

bc978f56f4cd58d22cfa928db3fa5c3fb3fa37eb9de9e08788b5b9baedfc1b742b1fc2197c4e4d69ee600f70d25460adc96bfc16975f49c4160ab5740d3a944c

## FEATURES

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1. *IX20/IX20W*: New PR product variants and firmware for FirstNet/ResponseVerify products [DALP-674]
  1. PR stands for Primary Responder and indicates a security hardened, feature-restricted firmware targeted to comply with AT&T FirstNet and Verizon ResponseVerify certification security requirements. It is the same DAL firmware under the hood, but with several features removed to comply with FirstNet and ResponseVerify security restrictions. Below is a list of changes for PR products:
    1. **Services** → **Telnet** removed
    2. Removed **Telnet** option from Remote access options if a serial port was set in Remote access mode
    3. WPA1 Wi-Fi encryption option (WPA Personal) removed
    4. Default Wi-Fi SSID disabled by default
    5. interactive shell removed
      1. **Firewall** → **custom rules** always has sandbox enabled with limited shell command and filesystem access to only allow iptables interaction
      2. **System** → **Scheduled tasks** → **Custom scripts** always has sandbox option enabled with limited shell command and filesystem access to allow CLI access and python script execution
      3. No inbound SCP/SFTP support
  2. Add **ssh** and **telnet** commands to Admin CLI [DALP-664]
  3. Add new **modem firmware** CLI commands for performing local or over-the-air remote firmware updates to the cellular modem(s) in the device [DAL-2811]
  4. Add new configuration options under **Network** → **Devices** for setting the link speed/duplex of the device's Ethernet port(s) [DALP-135]
  5. Add options for starting, stopping, and viewing serial port activity logs through the CLI, web UI, or Digi Remote Manager [DALP-458]
  6. Support for the Sierra EM9190/9191 5G modems [DALP-686]
  7. Support for the Sierra EM7411 LTE CAT7 modem [DALP-608]
  8. IPv6 IPsec tunnel support for full IPv6 tunnels, IPv6-over-IPv4, or IPv4-over-IPv6 tunnels [DALP-581]
  9. IPsec XFRM interfaces for enhanced control over IPsec tunnels and the network interfaces associated to them. This allows users to select tunnels for multiple networking features, including static routes, policy-based routes, access control lists, and routing priority based on metric. [DAL-490]
  10. Inclusion of the Python pip for installing external modules/libraries [DAL-4078]

## ENHANCEMENTS

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1. Add **Services** → **Location** options for configuring GPS or GNSS location communication [DALP-724]
2. GPS/GNSS support for the IX10 and 1002-CMG4 modem [DALP-713]
3. Add cellular technology icon to the Dashboard in the web UI [DAL-3673]
4. Add link to product User Guide under the User drop-down menu at the top-right of the web UI [DALP-569]
5. Added help button to **System** → **File System** page of the web UI [DALP-569]

6. Added new **Status → Modbus Gateway** service page to the web UI to display information about modbus clients and servers connected to the gateway [DALP-671]
7. Added **show modbus-gateway** CLI command to view the status of Modbus gateway service [DALP-671]
8. Updated **show modem** CLI command to display historical information about the modem if it is in the process of updating firmware [DAL-1504]
9. Added new **Services → Ping responder** configuration settings for controlling what interfaces and firewall zones the DAL device responds to ICMP requests on [DAL-1565]
10. Enhance IPsec tunnels to wait for passing Surelink tests (if configured) before initiating outbound tunnels [DAL-3878/DAL-3774]
11. Add m2m.telus.iot Telus APN to fallback list [DAL-3911]
12. Add psmtneorm and edneopate010.dpa AT&T APNs to fallback list [DAL-4041/DAL-4045]
13. Add reseller and tracfone.vzwentp Tracfone APNs to the AT&T and Verizon fallback lists [DAL-4098]
14. Add new 890103 and 890141 ICCID prefixes and 31030 PMND ID matchers to AT&T APN fallback list [DAL-3934/DAL-4041]
15. Add service.qcdm.secure option to enable/disable encrypted QXDM access to the cellular modem in the DAL device [DAL-3964]
16. Add missing modem firmware and SIM details to datapoints uploaded to Digi Remote Manager [DAL-4040]
17. Show uptime for connection to Digi Remote Manager on the Dashboard web UI page in days/hours/minutes/seconds instead of just minutes [DAL-3691]
18. Updated network bridges to use the MAC address of the first device listed in **Network → Bridges → [bridge\_name] → Devices** as the MAC address for the bridged interface [DAL-3949]
19. Add link in the firmware update window on the **Status → Modem** page to direct users to the configuration options to schedule a modem firmware update [DALP-725]
20. Updated the help text on the login page to provide a more generic image [DAL-3916]
21. Added option when copying serial port settings on the **System → Serial Configuration** page to optionally copy the label of the serial port [DAL-3842]
22. Removed duplicate modem signal information from the **Modem → Status** page [DAL-3680]
23. Added a **DSCP** option to policy-based routes to allow users to match the routing rule by the type of DSCP field in the packet [DAL-3867]
24. Added a **defaultroute** option for matching policy-based routes to the device's active default route [DAL-4130]
25. Hide the **Monitoring → Device Health** configuration options if the device is not enabled for Digi Remote Manager central management [DAL-3825]
26. Update header types for the cellular modem name and network type on the Dashboard page
27. Create system log when Surelink DNS tests are skipped because the interface doesn't have any DNS servers [DAL-4224]
28. Hide main/aggressive mode option when using IKEv2 [DAL-4142]
29. Add reboot watchdog to IX20/IX20W devices to prevent soft-reboot hangs [DAL-3392]

## BUG FIXES

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1. Fixed missing default settings in configuration profiles created in Digi Remote Manager (bug affects firmware versions 20.8.x and older) [DALP-658]
2. Fixed missing option for setting the **SIM Slot Preference** in configuration profiles in Digi Remote Manager (bug affects firmware versions 20.8.x and older) [DAL-3912]

3. Fixed format of user passwords when displayed in Digi Remote Manager (bug affects firmware versions 20.8.x and 20.5.338.58) [DAL-3889]
4. Fixed issue with policy-based routing not working in conjunction with multiple IPsec tunnels (bug affects firmware versions 20.8.x and older) [DAL-3515]
5. Fixed issue preventing OpenVPN server-managed certificates from being re-generated if the process was interrupted (bug affects firmware versions 20.8.x and older) [DAL-3803]
6. Fixed issue preventing OpenVPN client from using an autogenerated config file from a tap-bridge openvpn server (bug affects firmware versions 20.8.x and older) [DAL-3881]
7. Fixed some formatting output of the **show system verbose** CLI command (bug affects firmware versions 20.8.x and older) [DAL-3805]
8. Fixed issue preventing VRRP interoperability between DAL devices and SarOS devices (bug affects firmware versions 20.8.x and older) [DAL-4130]
9. Update VRRP+ to properly handle changes in network interface statuses bug affects firmware versions 20.8.x and older) [DAL-4274]
10. Removed poorly formatted script contents from the **show scripts** CLI command output [DAL-3315]
11. Fixed non-working **system disable-cryptography** CLI command [DAL-4169]
12. Fixed second-stage erase functionality on devices not enabled for aView management [DAL-3944]
13. Fixed issue preventing multicast traffic from being sent through a GRE tunnel [DAL-3879]
14. Fixed issue preventing a firewall rule from being setup for OSFPv2 entries [DAL-3869]
15. Fixed rare crash caused when a Quectel modem disconnected [DAL-3867]
16. Fixed behavior of the WWAN Service LED to blink when a modem firmware update is in progress (bug affects firmware versions 20.8.x and older) [DAL-3963]
17. Fixed issue preventing IX10 devices and 1002-CMG4 modems from connecting with Verizon private APNs (bug affects firmware versions 20.8.x and older) [DAL-3605/DAL-3276]

## SECURITY FIXES

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The highest level vulnerability that has been fixed in this release is listed as a Critical CVSS score of **9.1**

1. Disallow TCP forwarding from incoming SSH connections [DAL-3938]
2. Remove sensitive information from HTTP GET requests (CVSS score: 5.7 Medium CVSS:3.1/[AV:N/AC:H/PR:H/UI:R/S:U/C:H/I:H/A:N](#)) [DAL-3938]
3. Update to linux kernel 5.8 (CVSS score: 3.7 Low CVE-2020-16166 CVSS:3.1/[AV:N/AC:H/PR:N/UI:N/S:U/C:L/I:N/A:N](#)) [DALP-678]
4. OpenSSH updated to version 8.3p1 (CVSS score: 2.2 Low CVSS:3.1/[AV:N/AC:H/PR:H/UI:N/S:U/C:L/I:N/A:N](#)) [DAL-3299]
5. OpenSSL updated to version 1.1.1h (CVSS score: n/a) [DAL-4037]
6. OpenVPN updated to version 2.4.9 (CVSS score 9.1 Critical [CVE-2018-7544](#) CVSS:3.0/[AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:N/A:H](#)) [DAL-3862]
7. Linux shell/bash updated to version 5.0 (CVSS score: n/a) [DAL-3763]
8. jQuery updated to version 3.5.1 (CVSS Score: 6.1 Medium CVE-2020-11022 CVE-2020-11023) [DAL-3547]
9. Updated WebU session token to use AES-256-GCM cipher (CVSS score: n/a) [DAL-4000]
10. Prevent web asset access from unauthorized logins (CVSS score: 5.3 Medium CVSS:3.1/[AV:N/AC:L/PR:N/UI:N/S:U/C:L/I:N/A:N](#)) [DAL-3835]
11. Add script CSP headers to the web UI (CVSS score: n/a) [DAL-3629]
12. Added extra layer of firmware verification to ensure the firmware matches the target hardware variant and prevent firmware modifications (CVSS score 1.9 Medium

- CVSS:3.1/[AV:L/AC:H/PR:H/UI:N/S:U/C:N/I:L/A:N](#)) [DAL-3511]
13. Prevent command injection through modemadvanced, modem\_install, and firmware webpages (CVSS score: 6.8 Medium CVSS:3.1/[AV:N/AC:H/PR:N/UI:R/S:U/C:H/I:H/A:N](#)) [DAL-4093/DAL-4104/DAL-4046]
  14. Prevent manual addition of files to an encrypted filesystem outside of the device itself (CVSS score: 6.1 Medium CVSS:3.1/[AV:P/AC:L/PR:N/UI:N/S:U/C:N/I:H/A:H](#)) [DAL-4149]
  15. Restrict memory allocation of tcpdump (CVSS score: 7.5 High CVE-2020-8037 CVSS:3.1/[AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:H](#)) [DAL-4226]
  16. Removed expired aView and AVWOB certificates [DAL-3467]
  17. Encode MAC address in URL used to sync with aView to prevent privileged escalation [DAL-4304]

## VERSION 20.8.22.32 (August 28,2020)

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This is the initial production firmware release for the IX10 product. This is a **mandatory** release

IX14-20.8.22.32.bin

SHA512:

deea32a3fd22257be2e08596162a83778966cfec751725ae533ec90bf0cf43466e6cd21ba649ab4812fa6ffbcfb29400a71f3cca14dc27c478d9da69221fd1c5

MD5: 1c64b417f36e6425576f999506da9d79

IX10-20.8.22.32.bin

SHA512:

1b681cc342211b3ae2ee849ea3230670ab48a52b667b626520f40b6e33f316c320f2d9916ee5c63c371492a0ea632f979fc397f638ea111bafd243c4063f86b7

MD5: 3749095e4ef0e0d862a64cf1f01ba121

IX20-20.8.22.32.bin

SHA512:

8f7772b60cf18abdd8325dc6fa8e4e4cc7a0f1d4eb201070fc14e6855fc1f05170ba40cb45a83167170467d9e348e64f059184c25c82487005ea5691b8658cee

MD5: 55d7da428951313542aaf9a76e3eb410

IX20W-20.8.22.32.bin

SHA512:

c505383dd71a250f3692ea54ccc10e2e4b718670fb58afb4f8448f30cbd25620eb451d6e8123d7d0cad1e56a1f67f97c7bd997fa215053901c105884fa00ca9

MD5: afc9527ff7a3f03a617fbf8c6a1079ee

## FEATURES

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1. Add new **System → Scheduled tasks → Allow scheduled scripts to handle SMS** configuration option to allow custom python scripts to handle sending/receiving SMS messages [DALP-488]
2. Add digidevice.sms python module for sending/receiving SMS messages in a custom python script [DALP-488]
3. Add ability to load custom factory config file from the local filesystem, which if present is loaded when the device is reset to default settings [DALP-394]
  1. The config file is the same as what can be downloaded when a user saves/exports the configuration from the **Configuration Maintenance** page in the local web UI. That .bin config file can be placed in /opt/custom-default-config.bin
4. DMNR Verizon Private Network support with new settings under **VPN → NEMO** [DALP-457]
5. Added Serial Modbus Gateway service for utilizing the Modbus protocol to communicate

with serial ports [DALP-573]

1. Configuration settings for the Modbus Gateway are found under **Services → Modbus Gateway**
6. MQTT client support via Paho Python module [DALP-590]
7. Added Ethernet network bonding to allow the same MAC address and IP configuration to be shared for multiple physical Ethernet ports in either active/backup or round-robin mode [DALP-589]
  1. Configuration options found under **Network → Interfaces → Ethernet bonding**. Bond devices created here can then be assigned to network interfaces
  2. Note: not available on the IX14
8. VRRP+ options added under **Network → VRRP → VRRP+** for validating primary or backup connectivity and automatically changing VRRP priority [DALP-289]
  1. Note a SureLink test must also be enabled for the network interface the VRRP entry is assigned to
  2. Cisco Umbrella content filtering options added under **Firewall → Web filtering** service configuration section [DALP-524]

## ENHANCEMENTS

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1. Disable voice services on Quectel EC25-AF when using T-Mobile SIMs [DAL-3707]
2. Add **-I** source address option to the ping CLI command [DAL-3682]
3. Add **service.modbus.debug** config option to enable debug logging on Serial Modbus [DAL-3561]
4. Add **Central management** configuration options for any DAL product to sync with aView, ARMT, or AVWOB [DALP-626]
5. Add **4GM** and **4GT** options to the **Network->Modems->Access technology** settings to specify a CAT-M modem to only connect on LTE CAT-M1 or NB-IoT, respectively [DALP-472]
6. Add options under **System → Log → Server list** to allow users to specify the TCP/UDP protocol and port of the remote syslog server [DALP-593]
7. Added configuration option under **Serial → TCP connection** to specify encrypted vs non-encrypted connection types
8. Added configuration option under **Serial → TCP/Telnet/SSH connections** to enable/disable TCP keep-alive messages and nodelay
9. Added new **Base settings** checkbox on custom serial configuration page in the web UI to allow users to specify whether they want to copy the base serial settings or not [DAL-3775]
10. Added new **Monitoring->Device Health->Data point tuning** configuration options to fine tune what datapoints are uploaded as health metrics to Digi Remote Manager
11. Added new **Monitoring->Device Health → Only report changed values to Digi Remote Manager** option to control sending metrics to Digi Remote Manager on the basis of whether the values have changed since they were last reported [DAL-3386]
12. Reduced data usage by 80% (based on default settings) for reporting health metrics to Digi Remote Manager [DAL-3394]
13. Fade **Configuration saved** pop-up window 5 seconds after clicking the **Apply** button [DAL-3451]
14. Added new **Status → Scripts** page in the web UI to view custom scripts and applications configured in the device, along with their status (running vs idle) [DALP-533]
15. Add options in CLI to show and manually stop any custom scripts or applications [DALP-533]
16. Added **Duplicate firmware** option on the Firmware Update page in the local web UI to copy the active firmware to the secondary firmware partition [DALP-565]

17. Add **system duplicate-firmware** CLI command to copy active firmware to the secondary firmware partition [DALP-565]
18. Move **update firmware** CLI command to be under **system** [DAL-3092]
19. Add **show vrrp** CLI command to display the status of any configured VRRP instances [DAL-2953]
20. Use a random unprivileged port for performing ntp time syncs if standard port 123 fails [DAL-3650]
21. Added new **Authoritative** option under TACACS+, RADIUS, and LDAP user authentication methods to prevent falling back to additional authentication methods if enabled [DAL-3314 & DALP-540]
22. Added new options under **Network → Wi-Fi** to control Tx Power of the Wi-Fi module (default 100%) and allow multiple RADIUS servers for WPA2 Enterprise [DALP-85]
23. Include up/down status of hotspots in the **show hotspot** CLI output [DAL-2184]
24. Update to ModemManager 2020-05-19 [DAL-3254]
  1. libqmi: updated to 1.25.4+
  2. ibmbim: updated to 1.20.4+
  3. libgudev: updated to version 233
  4. Improved support for Quectel EC25/EG25 modules

## BUG FIXES

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1. Fix LED behavior to account for Surelink pass/fail results [DAL-3688]
2. Fixed issue preventing RADIUS/TACACS+ authentication from working unless local-user authentication was also configured [DAL-3701]
3. Fixed issue preventing 1002-CMG4 modem from connecting with Verizon private APN SIMs [DAL-3276]
4. Fixed issue where device would remain connected to Digi Remote Manager even after cloud.service was changed to aView or disabled. Rebooting the device previously resolved the issue [DAL-3504]
5. Fixed bug where IPsec tunnels with multiple policies would only properly route traffic for the last policy configured [DAL-3448]
6. Fixed missing CPU usage stats in **show system** CLI output [DAL-2540]
7. Fixed improper value of the active SIM slot in the **modem sim-slot show** CLI command output when SIM slot 2 was in use [DAL-3569]
8. Fixed issue preventing network interfaces from initializing if the interface name was longer than 7 characters [DAL-2327]
9. Fixed issue preventing WAN passthrough mode if WAN was configured with a static IP [DAL-3097]
10. Fixed errors displayed in CLI when configuring a USB serial port in remote access mode [DAL-3207]
11. Fixed issue preventing users from configuring an IP address as a remote syslog server [DAL-3433]
12. Handle incorrect value occasionally returned by by Telit LM940/LM960 module when querying to see which SIM slot is in use [DAL-3481]
13. Fixed issue preventing cellular modem connectivity if a custom gateway/subnet was configured but the modem wasn't in passthrough mode [DAL-3585]
14. Fixed issue causing aView IPsec tunnel (if enabled) to randomly fail when device was in passthrough mode [DAL-3657]
15. Fixed permission issue on /opt/custom/ directory preventing users from setting up custom CSS and logos [DAL-3710]



16. Fixed issue preventing VLANs from being assigned to Wi-Fi SSIDs [DAL-3113]

## SECURITY FIXES

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The highest level vulnerability that has been fixed in this release is listed as a High CVSS score of **6.7**

1. Update to Linux kernel 5.7 (CVE-2020-10732 CVSS Score: 4.4 Medium [CVSS:3.1/AV:L/AC:L/PR:L/UI:N/S:U/C:L/I:N/A:L](#)) [DAL-3322]
2. Added local user login rate limiting to default lockout additional login attempts for 15 minutes after 5 login failures per user (Score: 6.7 Medium [CVSS:3.1/AV:L/AC:H/PR:N/UI:N/S:U/C:H/I:H/A:N](#)) [DAL-3390 and DAL-3505]
  1. New configuration options are under the **Login failure lockout** section for each user in the **Authentication → User** settings
3. Prevent /etc/config/start from running when shell is disabled (Score: 5.2 Medium [CVSS:3.1/AV:L/AC:H/PR:H/UI:N/S:U/C:H/I:L/A:L](#)) [DAL-2846]
4. Prevent file path expansion on **Firmware Update** and **File System** pages in the local web UI (Score: 3.2 Low [CVSS:3.1/AV:L/AC:L/PR:H/UI:N/S:U/C:L/I:N/A:N](#)) [DAL-3513, DAL- 3471, & DAL-3518]
5. Prevent cross-site scripting on the Wi-Fi and Bluetooth scanner pages in the local web UI (Score: 3.8 Low [CVSS:3.1/AV:P/AC:H/PR:N/UI:R/S:U/C:L/I:L/A:L](#)) [DAL-3628]
6. Obfuscate text when showing the SIM PIN (Score: 3.2 Low [CVSS:3.1/AV:L/AC:L/PR:H/UI:N/S:C/C:L/I:N/A:N](#)) [DAL-3462]
7. Set HTTP Auth Cookie as secure in the local web UI (Score: 3.1 Low [CVSS:3.1/AV:N/AC:H/PR:N/UI:R/S:U/C:N/I:L/A:N](#)) [DAL-3393]
8. Fixed leaked file descriptors on serial connections [DAL-3202]

## VERSION 20.5.38.58 (July 20, 2020)

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This is a **recommended** release

## ENHANCEMENTS

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1. Increased minimum password complexity to at least 10 characters containing at least one uppercase letter, one lowercase letter, one number, and one special character [DAL-3491]
  1. Note: Devices that were running older firmware that had user passwords that do not meet these minimum requirements after upgrading to 20.5.38.58 will still be able to use that password to authenticate with the device. However, if the user attempts to update user's password in the DAL device's configuration settings after upgrading to 20.5.38.58, the updated password must comply with the new minimum requirements

## BUG FIXES

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1. Fixed delay in connecting with FirstNet SIMs caused by interference from Lightweight M2M (LWM2M) service on Telit modules [DAL-3236]
2. Prevent interruptions to QCDM/QXDM port on Sierra modems caused by ModemManager interaction [DAL-3469]
3. Fixed bug preventing dual-APN connectivity with AT&T SIMs and Sierra modems [DAL-3586]

## SECURITY FIXES

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The highest level vulnerability that has been fixed in this release is listed as a High CVSS score of 6.5, which is rated as a Medium

1. Removed **remote\_control** service used when receiving remote commands from aView/ARMT/AVWOB in favor of HTTPS secure commands. Vulnerability discovered by Stig Palmquist (CVE pending) [DAL-3460]
2. Add failed login attempts to event log sent to remote syslog servers, if enabled [DAL-3492]

## VERSION 20.5.38.39 (May 29, 2020)

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This is a **mandatory** release

### FEATURES

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1. LDAP user authentication [DALP-192]
2. Add option on the **System** → **Firmware Update** page in the web UI to have the DAL device query a firmware server for available firmware updates [DALP-481]
3. Added new **WiFi** → **Access points** → **[ssid\_name]** → **Isolate clients** option to enable/disable WiFi client isolation [DAL-2019]
4. Add configuration options under **Central management** for a proxy connection to Digi Remote Manager [DAL-3150]
5. Added new **Enable watchdog** configuration option to monitor the connection to Digi Remote Manager, along with options to reboot the device or restart its connection to Digi Remote Manager if the watchdog times out. The default settings are to restart the connection to Digi Remote Manager if the watchdog times out after 30 minutes [DAL-2954]
6. New **application** mode for serial ports to allow full control of serial ports through custom python/shell programs. Also allows additional USB-to-serial adapters to be configured and connected to using the `/dev/serial/<config_key_name>` path [DAL-2807]
7. *IX20W*: Add new WiFi SSID and passphrase, enabled by default. The default SSID is now `<device model>-<serial num>` and the default passphrase is the unique default password of the device [DAL-3050]

### ENHANCEMENTS

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1. Added the ability to configure DHCP pools larger than /24 subnets [DAL-2864]
2. Add a **statusall** option to the **show ipsec** CLI command to display verbose IPsec status [DAL-2711]
3. Use modem PDP context 1 when an AT&T SIM is inserted to match new requirements from AT&T [DAL-3093]
4. Add AT&T FirstNet IMSIs so they can be differentiated from other types of AT&T SIMs [DAL-3163]
5. Added Python HID module to allow the DAL device to control PSUs via Python programs [DAL-2092]
6. Allow network analyzer to be configured to monitor any network interface instead of just wired Ethernet ports [DAL-2146]
7. Added option to **ping** CLI command to ping a broadcast address [DAL-2571]
8. Added new health metric to report the interface used by the DAL device for its configured IPsec tunnels [DAL-2710]
9. Added new health metric to report the LTE SNR value of the modem(s) on the DAL device [DAL-2904]
10. Limit metrics upload to no more than 2 per minute if backlogged [DAL-2870]
11. Added new **Locally authenticate CLI** configuration option to control whether a user is required to provide device-level authentication when accessing the console of the device through Digi Remote Manager. Default is to allow console access without providing device-level authentication, since the user is already logged in and authenticated through Digi Remote Manager [DAL-1510]
12. Report device SKU in RCI response to Digi Remote Manager [DAL-2940]
13. *IX14*: Report the SKU on IX14 variants (was already reported for other IX-series products)

- [DAL-2539]
14. Add wldata APN to fallback list [DAL-3182]
  15. Improved recovery of Telit modem firmware updates should the update get interrupted [DAL-2984]
  16. Fixed spelling of **System utilization** chart on Intelliflow page in the local web UI [DAL-2260]
  17. Added new **Health sample upload window** debug configuration option to provide a delay window/jitter when uploading health metrics to Digi Remote Manager (default 2-minutes) [DAL-2607]
  18. Commonize the format and naming of rx/tx health metrics reported to Digi Remote Manager [DAL-2896]
  19. Add IPv6 options to **traceroute** CLI command [DAL-2618]
  20. Add count of bytes transmitted and received to the output of the **show network interface X** CLI command [DAL-2980]
  21. Updated **mmcli-dump** command used when generating a support report to only run its list of AT commands on the cellular modem once [DAL-3013]
  22. Updated placement of the **Apply** button on the **Device Configuration** page of the web UI to account for usability on smaller screens and keep it always visible when scrolling [DAL-3029]
  23. Display the secondary/alternate firmware image version as the **Alt. Firmware Version** in the output of the **show system** CLI command [DAL-3057]
  24. Retain modem firmware files in the event that the firmware upgrade was interrupted [DAL-2856]
  25. Renamed OpenVPN server **device type** configuration options to clarify which options are OpenVPN managed versus device-only [DAL-2857]
  26. Changed the **Idle timeout** configuration settings for remote-access serial ports to use to *blank* instead of *0s*, to better match the format of the **Idle timeout** option for user login sessions [DAL-2623]
  27. Added a 5-second wait time between setting LTE band configuration updates on a Telit modem and rebooting the modem to apply the configuration change [DAL-2972]
  28. Add support for AES\_GCM family of IPsec ciphers [DAL-2715]

## BUG FIXES

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1. Load FirstNet-specific firmware on Telit LM960 modems when a FirstNet SIM is present (bug affects firmware versions 20.2.x and older) [DAL-3163]
2. Fix VRRP crashes by upgrading keepalived to version 20.0.20 (bug affects firmware versions 20.2.x) [DAL-3181]
3. Prevent IPsec tunnel from being setup if its local network/interface is down (bug affects firmware versions 20.2.x and older) [DAL-2336]
4. Fixed rare issue where the cellular modem could not initialize after resetting the modem (bug affects firmware versions 20.2.x and older) [DAL-1409]
5. Update analyzer to continue running even if the users SSH session ends (bug affects firmware versions 20.2.x and older) [DAL-2154]
6. Prevent re-uploading of invalid health metrics data if Digi Remote Manager sends a response that the contents of the health metrics are invalid (bug affects firmware versions 20.2.x and older) [DAL-2868]
7. Fixed bug preventing stale conntrack entries from being flushed when a WiFi-as-WAN (client mode) network changes, connects, or re-connects (bug affects firmware versions 20.2.x and older) [DAL-2775]
8. Fixed timing issue where an IPsec tunnel configured to be built through a specific interface

- would not be brought down properly if that network interface went down (bug affects firmware versions 20.2.x and older) [DAL-3023]
9. Fixed issue preventing backup IPsec tunnel from being established when primary/preferred tunnel was down (bug affects firmware versions 20.2.x) [DAL-3024]
  10. Fixed intermittent reporting issue where web UI and CLI would list the modem as registered when it was actually connected (bug affects firmware versions 20.2.x and older) [DAL-2329]
  11. Fixed failing SureLink IPv6 ping tests (bug affects firmware versions 19.11.x through 20.2.x) [DAL-2488]
  12. Fixed issue with applying policy-based routes to incoming packets from the Internet (bug affects firmware versions 20.2.x and older) [DAL-2589]
  13. Fixed bug preventing passthrough mode from functioning if multicast was also enabled (bug affects firmware versions 20.2.x and older) [DAL-2709]
  14. Fixed rare issue with not receiving a SCEP certificate from the server due to timing issues between requesting the certificate with a private key and when that certificate can be downloaded (bug affects firmware versions 20.2.x and older) [DAL-2850]
  15. Fixed error displayed in **show modem** CLI output when modem was not connected (bug affects firmware versions 20.2.x and older) [DAL-2959]
  16. *IX20W*: Fixed bug preventing default WiFi settings from working on certain platforms (bug affects firmware versions 20.2.162.164) [DAL-3049]
  17. Fixed bug preventing local configuration backups if the configuration directory contained files or directory paths longer than 100 characters (bug affects firmware versions 20.2.x and older) [DAL-3137]
  18. Fix non-working custom DHCP options (bug affects firmware versions 20.2.x) [DAL-3071]
  19. Fix corrupted configuration schema settings after issuing a **config revert** CLI command (bug affects firmware versions 19.8.x through 20.2.x) (bug affects firmware versions 20.2.x and older) [DAL-3194]
  20. Fixed issue where IPsec tunnel is built through default route instead of the configured local interface (bug affects firmware versions 20.2.x) [DAL-2889]
  21. Removed unsupported LED options listed for LR54 units in their digidevice.led Python module options (bug affects firmware versions 20.2.x) [DAL-3250]
  22. *IX20W*: Fixed client connectivity through Captive Portals (bug affects firmware versions 20.2.x) [DAL-3251]
  23. Removed empty, blank row from **Filesystem** page in the web UI when listing the contents of an empty directory (bug affects firmware versions 20.2.x and older)
  24. Fixed issue preventing users from downloading the ovpn client configuration file from the web UI on the Chrome browser (bug affects firmware versions 20.2.x and older) [DAL-3262]

## SECURITY FIXES

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The highest level vulnerability that has been fixed in this release is listed as a High CVSS score of **7.5**

1. Update to openssl-8.2p1 (CVE-2019-6111 – CVSS Score: 5.8) [DAL-2860]
2. Fixed user escalation exploit through **cloud.drm.sms** configuration option (CVSS Score:6.0 Severity:Medium Matrix: [AV:L/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:N](#)) [DAL-2887]
3. Fixed user escalation exploit through **Label** configuration setting for serial ports (CVSS Score: 6.0 Severity: Medium Matrix: [AV:L/AC:L/PR:H/UI:N/S:U/C:H/I:H/A:N](#)) [DAL-3011]
4. Fixed password exploit through web token (CVSS Score: 5.6 Severity: Medium Matrix: [AV:L/AC:H/PR:H/UI:R/S:U/C:H/I:H/A:N](#)) [DAL-3069]
5. Update StrongSwan to 5.8.3 [DAL-2866]
6. Updated iputils to s20190709 and traceroute to version 2.1.0 [DAL-2338]

7. Upgrade Linux kernel to version 5.6 [DAL-2873]
8. Update ipset to version 7.6 [DAL-2853]
9. Update OpenSSL to 1.1.1g (CVE-2020-1967 - CVSS Score – 7.5 HIGH) [DAL-2977]
10. Prevent DOM XSS (cross-site scripting) exploit on **Terminal** page in the web UI (CVSS Score: 4.2 Severity: Medium Matrix: [AV:N/AC:H/PR:N/UI:R/S:U/C:L/I:L/A:N](#)) [DAL-3068]
11. Prevent user escalation exploit through netflash options in web UI (CVSS Score: 4.1 Severity: Medium Matrix: [AV:L/AC:H/PR:H/UI:N/S:U/C:N/I:H/A:N](#)) [DAL-3129]
12. Prevent use-after-free exploit in CLI configuration of OpenVPN (CVSS Score: 5.7 Severity: Medium Matrix: [AV:L/AC:H/PR:H/UI:N/S:U/C:H/I:H/A:N](#)) [DAL-2963]
13. Prevent XSS vulnerability on the **Filesystem** page in the web UI where a directory name with HTML embedded in it would be rendered as HTML rather than plain text (CVSS Score: 4.6 Severity: Medium Matrix: [AV:L/AC:H/PR:H/UI:R/S:U/C:L/I:H/A:N](#)) [DAL-3200]
14. Prevent unauthenticated users from downloading the ovpn client configuration file from the web UI (CVSS Score: 5.6 Severity: Medium Matrix: [AV:N/AC:L/PR:N/UI:N/S:U/C:L/I:N/A:N](#)) [DAL-3133]

## **VERSION 20.2.162.164 (May 6, 2020)**

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Initial product release for IX20 and IX20W

## **VERSION 20.2.162.162 (March 17, 2020)**

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This is a **mandatory** release

### **ENHANCEMENTS**

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1. Add MAC address is support report filename [DAL-2863]
2. Add firstnet-broadband APN for AT&T FirstNet SIMs [DAL-2876]
3. Use **ims** instead of **vzwims** APN on Verizon SIMs for proper IMS registration [DAL-2883]

### **BUG FIXES**

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1. **1002-CM04/1003-CM11**: Fixed cellular high-speed throughput performance issues caused by CPU slowdown and timing of gathering cellular signal details [DAL-2802]
2. **1003-CM11**: Fixed inability to utilize SIM slot 2 of an device with a Telit LE910c4-NF or LM940 modem when the two SIM slots contained SIMs from differing carriers [DAL-2897 & DAL-2986]
3. Fix health metrics warnings in Digi Remote Manager stating the local filesystem's /opt/ directory was full when it wasn't [DAL-2769]
4. Fixed missing Rx/Tx bytes in **show modem** CLI command output [DAL-2804]
5. Fixed issue preventing multicast packets from being sent through a network bridge [DAL-2774]
6. Fixed auto-reboot after restoring configuration file through local web UI [DAL-2862]
7. Fixed inability to update modem firmware on Sierra EM7511 modules [DAL-2794]
8. Fixed improper modem firmware selection on Telit LM960 module when using a T-Mobile SIM [DAL-2376]
9. Fixed bug causing the configured **Reboot Time** to always occur in UTC instead of local timezone (issue present in older 20.2.162.x firmware versions)[DAL-2859]
10. Fixed bug preventing analyzer from being stopped in the CLI [DAL-2892]

### **SECURITY FIXES**

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1. Fix cross-site scripting (XSS) vulnerability on various Status pages in the local web UI [DAL-2818]
2. Fix cross-site scripting (XSS) vulnerability on Configuration page in the local web UI [DAL-2819]

3. Fix cross-site scripting (XSS) vulnerability on Terminal page in the local web UI [DAL-2823]
4. Fix cross-site scripting (XSS) vulnerability on File System page in the local web UI [DAL-2823]
5. Prevent script injection exploit on the Configuration Maintenance page in the local web UI [DAL-2797]
6. Prevent unauthorized read/write access to /opt/config/ and /opt/boot when `Interactive Shell` is disabled [DAL-2865]
7. Prevent analyzer output from being saved outside of the /etc/config/analyzer directory [DAL-2672]

## **VERSION 20.2.162.90 (March 11, 2020)**

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This is a **mandatory** release.

### **NEW FEATURES**

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1. Telit LE910c1-LA modem support [DAL-2391]
2. Telit LM960 LTE CAT18 modem support [DALP-487]
3. Quectel EC25-AF LTE CAT4 modem support [DAL-1817]
4. [Digi Remote Manager](#) is set as the default portal for all DAL products [DALP-393]
  - Central management via Digi Remote Manager will not be enabled if you upgrade a device running 19.11.x or older firmware that was previously syncing with an aView instance to 20.2.x or newer firmware, but can be enabled if desired. However, if the device running 20.2.x or newer firmware gets reset (e.g. if someone presses the Erase button on the device, or erases its config through the web UI or Admin CLI), the device will sync with Digi Remote Manager by default.
5. Added SureLink™ default connectivity tests on all WAN interfaces [DALP-402]
  - SureLink tests (previously referred to as **Active Recovery**) will not be enabled by default if you upgrade a device from 19.11.x or older DAL firmware to 20.2.x or newer firmware, but can be enabled if desired. However, if the device running 20.2.x or newer firmware gets reset (e.g. if someone presses the Erase button on the device, or erases its config through the web UI or Admin CLI), the default SureLink tests **will be enabled** as part of the default settings of the device.
6. Background Wi-Fi AP roaming/scanning [DALP-435]
  - New **Background scanning** configuration settings under Client WiFi entries
7. New web UI pages added under the **System** drop-down with enhanced serial details and configuration [DALP-465]
8. Support for firmware/OTA updates on Quectel modems [DALP-419]
9. AT&T LWM2M support for Telit LM940/LM960 modems [DAL-2476]

### **ENHANCEMENTS**

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1. Prevent access to web UI until HTTPS is ready [DAL-603]
  1. Until the SSL cert is generated, users trying to access the web UI via standard http will receive a redirect page stating that the cert is generating. Once the SSL cert is generated, users accessing the web UI via standard http will be automatically redirected to the https link
2. Show multiple bands for Telit modems if carrier-aggregation is supported and active [DAL-2624]
3. Update wording of help text for WiFi Background Scanning config settings to better reflect their usage [DAL-6673]

4. Added additional Telit-specific AT commands to mmcli-dump of support report
5. Improved Role-based access on local web UI, SSH, and remote access [DALP-415]
  - Includes new configuration options
    - **Allow shell** - NOTE if this options is disabled and subsequently re-enabled, the DAL device will **reset to default settings**
      - **If disabled, the following changes are implemented**
        - a) Forced all custom scripts to be sandboxed.
        - b) Script sandboxing uses a tighter profile that prevents /bin/sh access.
        - c) Sandbox custom firewall scripts to a profile that only allows iptables/ipset/arptables/ip and access to /proc and /sys files. Basically all things firewall related but very locked down. The commands are still run in the shell, but no external commands are available, so the script is limited to basic loops and variable access and no escaping.
    - Under each user group under **Authentication → Groups** in the configuration settings:
      - **Admin access**
      - **Access level**
      - **Interactive shell access**
6. New default break sequence **~b** for serial connections [DALP-253]
7. Report MCC/MNC/CID/LAC values in health metrics to Digi Remote Manager [DAL-2502]
8. Add digicpn.gw12.vzwentp Verizon APN to fallback list [DAL-2283]
9. Change default OpenVPN Certificate Issuer details from Accelerated to Digi [DAL-2449]
10. Change default SSL certification from Accelerated to Digi [DAL-1336]
11. Dual-APN support on Sierra EM7511 modem [DAL-2311]
12. Include AT#RESETINFO and Quectel-specific AT commands in support report [DAL-2394]
13. Rename **Configuration Management** page under the System section of the web UI to **Configuration Maintenance** [DAL-2549]
14. Added link under **System** drop-down in web UI to download the support report
15. Update the **Digi Remote Manager** link under the **System** drop-down in the web UI to open in a new tab [DAL-2294]
16. Update the **Authentication → Idle** timeout setting to have a default value of 10-minutes (previously the default was blank) [DAL-2292]
17. Send up to 4 IPsec tunnels' details as health metrics reported to Digi RM [DAL-1476]
18. Change the default behavior of the **SIM failover alternative** settings from **None** to **Reset modem** [DAL-2687]
19. Renamed **Signal Strength** references to **Signal Quality** [DAL-2707]
20. On the Network Status page of the web UI, add **Interface is up** message in SureLink status details
21. Add **service.qcdm.modem.device** and **service.qcdm.modem.interface\_number** config options for specifying QCDM/QXDM port for a modem [DAL-2497]

## SECURITY FIXES

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1. Update to Linux kernel version 5.4.8

2. Removed plain-text passwords displayed in the output of the **show config** CLI command [DAL-2513]
3. Added backoff timer when maximum number of SSH/UI login retries is exceeded [DAL-2590]
4. Update to Python version 3.6.10 [DAL-2534]
5. Update tcpdump to version 4.9.3 (CVE-2017-16808 CVE-2018-14468 CVE-2018-14469 CVE-2018-14470 CVE-2018-14466 CVE-2018-14461 CVE-2018-14462 CVE-2018-14465 CVE-2018-14881 CVE-2018-14464 CVE-2018-14463 CVE-2018-14467 CVE-2018-14463 CVE-2018-10103 CVE-2018-10105 CVE-2018-14879 CVE-2018-14880 CVE-2018-16451 CVE-2018-14882 CVE-2018-16227 CVE-2018-16229 CVE-2018-16301 CVE-2018-16230 CVE-2018-16452 CVE-2018-16300 CVE-2018-16228 CVE-2019-15166 CVE-2019-15167) [DAL-2611]
6. Update libpcap to version 1.9.1 [DAL-2611]
7. Update e2fsprogs to version 1.45.5 (CVE-2019-15161 CVE-2019-15162 CVE-2019-15163 CVE-2019-15164 CVE-2019-15165 CVE-2017-16808) [DAL-2611]
8. Update openvpn to version 2.4.4 (CVE-2017-12166) [DAL-2614]
9. Update libldns to version 1.7.1 (CVE-2017-1000231 CVE-2017-1000232) [DAL-2613]
10. Update libxml2 to version 2.9.10 (CVE-2018-9251 CVE-2018-14567) [DAL-2612]
11. Restrict /etc/config/ to admin-only users [DAL-1396]
12. Remove plaintext password from RADIUS debug logs [DAL-2640]
13. Prevent Framebusting JavaScript click-jacking [SEC-494]
14. Prevent users from gaining elevated shell access through custom scripts [DAL-2628]
15. Update libcurl to version 7.69.0 (CVE-2019-15601) [DAL-2732]
16. Update pppd to version 2.4.8 (CVE-2020-8597) [DAL-2732]
17. Fix elevated root access through custom scripts when no-shell is enabled [DAL-2628]
18. Obfuscate sensitive device configuration settings [DAL-1388]

## BUG FIXES

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1. Fixed bug where SureLink™ DNS tests took longer than the configured timeout to complete [DAL-2702]
2. Fixed SSL validation bug preventing modem OTA updates [DAL-2547]
3. Fixed bug where WiFi hotspot intermittently worked [DAL-2547]
4. Fixed bug where newly-created network Bridges would not be listed as options under the Device drop-down for network interfaces [DAL-2575]
5. Fixed bug where the primary/active interface was not reported correctly to Digi aView when the DAL device was configured for load-balancing between two WAN interfaces [DAL-2568]
6. Fixed bug where a device configured with multiple SSH keys would only honor the last SSH key in the list [DAL-2506]
7. Display the active cellular band for Quectel modems [DAL-2298]
8. Fixed bug where the web UI would display bytes transmitted/received for network interfaces as **N/A** [DAL-2295]
9. Fixed bug where the web UI wouldn't show IP information for client devices connected to an OpenVPN server running on the DAL device [DAL-2251]
10. Fix formatting output of **show config** CLI command when the configuration settings contained an array [DAL-2594]



11. Fix bug when adding a new element to an array in the **config** mode of the CLI [DAL-2594]
12. Fix bug where CLI ping and traceroute commands would ignore any interface specified in the command [DAL-2605]
13. Fix bug where SureLink™ default tests would continue to pass if cellular modem lost its active data connection [DAL-2609]
14. Fix a bug handling certificate files with spaces
15. Fixed padding issue with downloading SCEP CA certificates [DAL-2212]
16. Fixed rare issue with passthrough ancillary DNS not resolving if **ancillary DNS redirect** issue was disabled
17. Fixed issue with active serial logins when a serial-related configuration change was applied to the DAL device [DAL-2696]
18. Fixed output of **show modem** CLI command when cellular modem re-initializes
19. Fix potential initialization issues after updating firmware [DAL-2762]

## **VERSION 19.11.72.85 (January 21, 2019)**

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This is a **recommended** release.

### **NEW FEATURES**

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1. Added new digidevice.led python module for controlling LEDs on the device [DAL-2303]

### **ENHANCEMENTS**

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1. Include each interface's MTU to the output of the **show route verbose** command in the Admin CLI [DAL-2378]

### **BUG FIXES**

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Unless otherwise stated, any bugs mentioned here only affect earlier versions of 19.11.x

1. Fixed bug preventing users from configuring an IPsec tunnel with a remote network of 0.0.0.0/0 [DAL-2253]
2. Fixed timing issue between Active Recovery tests and reloading the devices firewall rules, which if done in the wrong order could result in the device not sending traffic through the validated connection [DAL-2000]
3. Fixed bug where the local web UI would show a \*N/A\* value for an interface's bytes transmitted/received [DAL-2295]
4. Fixed slowdown in Wi-Fi bridge/repeater mode due to GRO (Generic Receive Offload) being enabled [DAL-2353]

## **VERSION 19.11.72.58 (December 6, 2019)**

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This is a **mandatory** release.

### **NEW FEATURES**

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1. [Re-themed web UI](#) with improved navigation and functionality. New functionality includes:
  - The ability to view local filesystem contents [DAL-2110]
  - Help-text on login page
  - Quick-config access on status pages
  - new Dashboard overview page

- Mobile-friendly UI
2. New network analyzer and packet capture tool, included in both the Admin CLI and web UI [DAL-1575]
  3. Added options under the *Network->Modem* section of the device configuration to setup SIM slot prioritization and SIM slot failback [DALP-287]
  4. Added new *Preferred tunnel* option under *VPN->IPsec->Tunnels* to configure a tunnel to be a primary or failover tunnel [DAL-1478]
  5. Add new **DHCP Hostname** option for IPv4 and IPv6 settings under the **Network->Interfaces** section of the configuration to allow the device to advertise its hostname to the DHCP server upon connection (disabled by default) [DALP-427]
  6. Added ability to receive encrypted SMS commands from Digi Remote Manager [DALP-270]
  7. Add support for the Telit LM960A18 LTE CAT18 module [DAL-1905]
  8. Add support for Sierra Wireless EM7511 LTE CAT18 module [DAL-1414]
  9. Add support for Quectel EG25-G LTE CAT4 module [DALP-339]
  10. Add support for Quectel EG06 LTE CAT6 module [DALP-403]
  11. Add Python support on all products (previously only available on the IX14 and Connect IT 16/48) [DAL-1907]
  12. Add *system disable-cryptography* Admin CLI command to configure a device for *nocrypt* mode [DALP-491]
  13. Once a device is set for *nocrypt* mode, a user must press the Erase button to reset the device to factory default settings to disable *nocrypt* mode and restore the device back to standard operation
  14. Add *show usb* Admin CLI command [DAL-2029]

## ENHANCEMENTS

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1. Improved WebUI performance with crypto speedup
2. Default user changed from root to admin [DAL-936]. Once a device is upgraded to 19.11.72.58 or newer firmware
  1. If you do have an admin user configured, it will not be touched by the update
  2. If you do not have an admin user configured, a new one will appear. It will have the same credentials/settings as the root user
  3. If you had a root user configured (e.g. not factory defaults) it will be preserved to maintain existing user access
  4. Restoring the device to factory defaults after update will result in only the admin user. If you have a root user and do a factory default, you have to login with the admin user instead of root, using the same default password printed on the bottom of the device
3. Added the ability to push OpenVPN routes in subnet mode [DAL-2224]
4. Add cellular IMEI and firmware version, along with bluetooth and accelerometer info to show manufacture command in the Admin CLI [DAL-2030]
5. Add the % measurement value to the CPU usage in the show system output of the Admin CLI
6. Device is passthrough mode with an IPv6 connection now honors and utilizes the MTU in IPv6 RAs
7. When using Verizon SIMs, utilize the OMADM process to auto-discover the APN [DAL-1371]
8. Enhance modem firmware update tool to support multiple modem installations [DAL-2148]
9. Created new Edge firewall zone to prevent the device's DNS services from being advertised on the network, which still allowing SSH and web UI access [DAL-2085]

10. Removed 192.168.210.254 Default IP gateway [DAL-2095]
11. Added support for sending RFC2136 compatible DNS updates to external DNS servers [DALP-446]
12. Add new options under **VPN->IPsec->Tunnels->Local endpoint->ID->ID Type** for using the device's MAC address or serial number as its local endpoint ID [DALP-437]
13. Updated the filename of the support report generated through the web UI or CLI to include the Digi name [DAL-1434]
14. Updated the filename of the support report generated through the web UI or CLI to include the Digi name [DAL-1434]

## SECURITY FIXES

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1. Provisioning the device via Bluetooth using the Digi Manager mobile app is disabled after first-time configuration of the IX14 is complete [DAL-673]
2. Updated OpenSSL to version 1.1.1d [DALP-304]

## BUG FIXES

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1. Fixed bug where provisioning an IX14 via Bluetooth using the Digi Manager mobile app would disable first-time configuration password requirements (bug present in firmware versions 19.8.1.61 and older) [DAL-552]
2. Fixed bug where Telit LM940 module inside the 1003-CM11 CORE modem could disconnect and not recover due to it starting up in the wrong mode or its serial ports not responding [DAL-1843]
3. Fixed bug where a device in passthrough mode drops received packets from cellular WAN larger than its MTU (bug present in firmware versions 19.5.x through 19.8.1.61) [DAL-2137]
4. Fixed bug with timing of RCI callbacks from Digi Remote Manager (bug present in firmware versions 19.8.1.61 and older) [DAL-2091]
5. Fixed bug where RX/TX data usage metrics reported to Digi Remote Manager could be mistakenly calculated as a negative sum [DAL-1972]
6. Fixed crash in IPsec configuration with more than 6 for IKE Phase 1 proposals or more than 10 IKE Phase 2 proposals [DAL-2066]
7. Fixed bug in reporting the reboot counter metric to Digi Remote Manager [DAL-1932]
8. Fixed bug where persistent system logs could not be remotely accessed through Digi Remote Manager [DAL-2060]
9. Fixed bug where Digi Remote Manager would always shows the device's connected method as ethernet [DAL-1993]
10. Prevent users from selecting non-production firmware versions when perform modem OTA updates [DAL-1662]
11. Fixed bug preventing Linux clients from querying a DAL device running a NTP server [DAL-1815]

## VERSION 19.8.1.61 (October 22, 2019)

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This is a **recommended** release.

## ENHANCEMENTS

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1. Skip auto-APN detection when using Telus SIM cards [DAL-1928]
2. Add QCDM service for accessing QXDM ports of Qualcomm-based modems [DAL-1904]

3. Add microcom tool [DAL-1872]

## **BUG FIXES**

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1. Fixed bug in runt where the boot version was reported incorrectly (bug present in firmware version 19.8.1.43) [DAL-1828]
2. Fixed registration delays on devices with Telit modems using Sprint SIM cards (bug present in firmware versions 19.8.1.43 and older) [DAL-1872]
3. Fixed stability issues with 1003-CM11 modem (bug present in firmware versions 19.8.1.43 and older) [DAL-1843]
4. Fixed bug preventing devices using a 1002-CM06 modem (Sierra MC7455) with a Telus SIM from loading the Telus carrier-firmware onto the modem (bug present in firmware versions 19.8.1.43 and older) [DAL-1823]
5. Fixed memory leak causing a DAL device in passthrough mode to stop responding to ARP requests on its LAN port (bug present in firmware versions 19.8.1.43 and older) [DAL-1686]
6. Fixed bug preventing SSH keys from being used to authenticate when establishing a SSH session to the DAL device (bug present in firmware version 19.8.1.43) [DAL-1742]

## **VERSION 19.8.1.43 (August 30, 2019)**

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This is a **mandatory** release.

## **NEW FEATURES**

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1. Telit LE910c4-NF modem support
2. WAN passthrough, allowing for [multi-WAN passthrough setups](#) [DALP-163 & DAL-959]
  - As a result, passthrough settings are not under the Modem section anymore, and instead are by default listed under the Network-Interface->LAN section for devices with passthrough enabled by default. To change a device defaulting in passthrough mode to router mode, simply change the "Network->Interfaces->LAN->Interface type" from "IP Passthrough" to "Ethernet", and then you'll see the normal router-mode configurations options available.
3. Auto-generated CLI documentation [DAL-1091]

## **ENHANCEMENTS**

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1. ModemManager update to version 1.10.2 [DAL-885]
2. Add verbose system log error messages when issues are encountered posting device health metrics to Digi Remote Manager [DAL-203]
3. Add system log when 1003-CM11 modem (LM940) carrier aggregation is disabled due to temperature limits
4. Include Telit carrier aggregation details in device support report [DAL-1435]
5. Add support for python RCI/SCI data\_service callbacks and requests from Digi Remote Manager [DAL-1003]
6. Implement protocol to be used for all local communication between cc\_acld and connector clients [DAL-203]
7. Include SIM locked/ready status in `show modem` CLI output [DAL-1320]
8. Update `show modem` CLI output formatting to have a summary mode that can be used to

- display the status of the modem(s) in the device, and the verbose output to display additional information for each modem, including the SIM, registration and attachment status [DAL-1184]
9. Improved formatting in the `show route` CLI output, including finer distinction of static routes [DAL-1176]
  10. Include policy and connection details in `show ipsec` CLI output, along with improved status details [DAL-1190 & DAL-1174]
  11. Improve labeling in output of the `show network interface X` CLI command
  12. Show OpenVPN client list and rx/tx bytes in `show openvpn` CLI output [DAL-1192]
  13. Add filtering options in `show log` CLI command [DAL-1181]
  14. Add CPU usage, device temperature (if available), device description, and location details in `show system` CLI output [DAL-1172]
  15. Updated local web UI logout link to list the name of the logged in user [DAL-1142]
  16. Renamed the section of central management options from `config` to `cloud` [DAL-1255 & DAL-1256]
  17. Added configuration option to have DHCP leases file persistent or clear across reboot [DAL-1196]
  18. Update CLI table formatting to double space & blank fields [DAL-1186]
  19. Add bypass-lan plugin to strongswan to allow 0.0.0.0/0 remote IPsec networks [DAL-1007]

## SECURITY FIXES

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1. Update Linux kernel to version 5.1.14 [DAL-1076]
2. Busybox update to version 1.31.0 [DAL-1161]
  - The new busybox shell environment no longer allows local variable statements such as the following:
    - `local ip_addr='1.2.3.4'`
  - and instead the variable must be set without the `local` option, such as:
    - `ip_addr='1.2.3.4'`
  - includes update to httpd webUI
3. Remove option to change Wi-Fi country code on US-products [DAL-1402]
4. Update dnsmasq2 to version 2.80 to address DNS cache snooping (CVE-2017-15107) [DAL-1386]
5. Update conntrack-tools to version 1.4.5
6. Update libnetfilter\_conntrack to version 1.0.7
7. Update libmnl to version 1.0.4
8. Update bind to version 9.14.2 [DAL-1338]
9. Update iptables to version 1.8.3
10. Update libqmi to version 1.23.1 [DAL-885]
11. Update libmbim to version 1.18.0 [DAL-885]
12. Update stunnel to version 5.54 [DAL-1162]
13. Update quagga to version 1.2.4 (CVE-2016-1245 and CVE-2017-5495) [DAL-1160]
14. Update tar to version 1.32 [DAL-1159]
15. Add Digi Remote Manager serial port configuration to all DAL products with managed serial ports (previously only available on Connect IT products) [DAL-1213]

16. Remove unused user passwords from /etc/passwd [DAL-1316]

## **BUG FIXES**

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1. Fixed bug causing loss of cellular connectivity on devices in passthrough mode with IPsec tunnels built through the cellular passthrough connection (issue present on firmware versions 19.5.x) [DAL-1612]
2. Fix issues where Telit QMI modems would disconnect from USB hub and not recover [DAL-1321/DAL-1556]
3. Fix issues where QMI-based modems would disconnect from cellular network and not automatically re-attach (bug present in 19.5.x firmware) [DAL-1375]
4. Fix issue where logging out of the local web UI from the Terminal page would result in the left-side navbar still showing the menu instead of the **Log in** link [DAL-863]
5. Fix issue where client devices sending a DHCP request over WiFi to an external server would fail due to the ARP broadcast reply packets having the wrong source MAC address [DAL-1526]
6. Fix issue where a DHCP relay endpoint couldn't be setup through modem or IPsec interfaces [DAL-956]
7. Close any open sessions on a serial port when configuration update changes the mode of the serial port
8. Fix bug in `show network` CLI output when both IPv4 and IPv6 networks were available
9. Fix bug where `show network` CLI command would show incorrect output when no SIM was present
10. Fix bug in returning dynamic-only `ref_enums` in device config to Digi Remote Manager [DAL-1323]
11. Fix service serversocket binding when `cc_acl` restarts [DAL-1411]
12. Fix reloading of displayed configuration options when enabling/disabling aView central management in the local web UI [DAL-834]
13. Fix reloading of the Dashboard page when enabling/disabling Intelliflow in the local web UI [DAL-780]
14. Reset LEDs displayed during reboot instead of freezing the LEDs to show the last known device state before the reboot [DAL-886]
15. Fix bug where Digi Remote Manager RCI thread blocks indefinitely waiting for config write lock [DAL-573]
16. Fix bug where `ls` command in the admin CLI required a terminating `/` on the path [DAL-1251]
17. Fix output of `show wifi` CLI output to show which physical radio a WiFi-as-WAN client is on, instead of a device name [DAL-1171]
18. Fix labeling and format errors in `show wifi` CLI output
19. Fix multiple SSID traversal with WiFi-as-WAN client setups [DAL-1246]
20. Fix bug with `show openvpn name` CLI command output [DAL-1191 & DAL-1192]
21. Fix bug with carrier, plmn, and modem status output in `show modem` CLI command
22. Fix column spacing and lower-casing consistency in `show arp` CLI output [DAL-1173]
23. Fix parsing of carrier names when posting cellular modem details to Digi Remote Manager [DAL-1553 & DAL-1326]

24. Fix error showing signal strength of WiFi network(s) when the signal was 0% [DAL-1404]
25. Limit decimal numbers reported to Digi Remote Manager to six decimal places [DAL-807]
26. Fixed issue with Telit LE910-NAv2 cellular modules not receiving SMS messages while cellular data session was active/online (bug present on firmware versions 19.8.1.30 and older) [DAL-1634]
27. Add Telus m2m APNs to fallback list [DALP-452]

## **VERSION 19.5.88.81 (June 26, 2019)**

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This is a **mandatory** release.

### **NEW FEATURES**

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1. Added support for getting NMEA location information from a UDP port (default port 2948) [DAL-1084]

### **SECURITY FIXES**

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1. Kernel patch for SACK attack (CVE-2019-11477). For more information, see <https://www.digi.com/resources/security>

### **BUG FIXES**

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1. Fixed bug where IPSec tunnel would cause a system crash when the tunnel was established over QMI-based modems [DAL-1170]
2. Fixed aView tunnel issue where the tunnel drops over time and remote commands fail [DAL-776]
3. Fixed bug preventing QMI-based Telit modems (CAT1 and CAT-M1 modules in particular) from connecting with vzwstatic APNs (bug present on 19.5.88.59 firmware)
4. Fixed bug where the 1003-CM modem (LTE CAT11 Telit LM940) would shut-down and not recover its cellular connection if temperatures were too high
5. Fixed bug where the cellular modem occasionally would not initialize properly on devices with a large number of serial ports

## **VERSION 19.5.88.59 (May 24, 2019)**

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This is a **mandatory** release.

### **NEW FEATURES**

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1. New CLI with more commands/consistency [DAL-773]
2. Enable Multicast DNS service on all platforms [DAL-972]
3. Implement RADIUS authentication support for users [DAL-903]
4. Add NTP Server option (disabled by default) [DAL-340]
5. Add sftp server to all DAL platforms [DAL-859]
6. ECC Custom Cert Support [DAL-764]

### **ENHANCEMENTS**

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1. Improvements to CLI show serial [DAL-1175]
2. Improved reliability of security chip from userspace access due to wakeup
3. Send interface name with cellular status events [DAL-916]
4. Updated ipset version to 7.1 [DAL-917]
5. Update to newest shadow-4.6 package
6. TACACS+ authorization for more server implementations [DAL-933]
7. stunnel updated to version 5.52 [DAL-915]



8. Additional health metrics required for Digi Remote Manager 3.0 [DAL-810]
9. Add support for Telit ME910C1\_WW
10. Direct remote serial port access via WebUI (shellinabox) [DAL-775]
11. Dual-APN Support on Telit LE910-NAv2 (1002-CM04) [DAL-818]
12. Improved OpenVPN operation and customization [DAL-798]
13. Update to linux-5.0 [DAL-842]
14. Add **description** field to system group [DAL-581]
15. Upgrade MC7455 to 02.30.01.01 (SWI9X30C 2.0 Release 23) added latest Sierra firmware for MC7455 and MC7430 [DAL-759]
16. Add an additional APN for Bouygues in France [DAL-840]
17. Improved Telit location reporting [DALP-226]
18. Improved collection of network LINK and Speed reporting
19. Implement Digi Remote Manager health metrics [DAL-707]
20. Added latest Telit LE910\_XX\_V2 firmware md5 sums

## SECURITY FIXES

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1. Update to openssl-1.0.2r (security) CVE-2019-1559
2. busybox: fix for CVE-2014-9645 [DAL-1159]
3. busybox: fix for CVE-2017-16544 [DAL-1159]
4. libcurl: update to 7.64.1 (CVE-2017-8816, CVE-2017-8817, CVE-2017-8818, CVE-2018-0500 CVE-2018-1000300, CVE-2018-1000301, CVE-2018-14618, CVE-2018-16839, CVE-2018-16840, CVE-2018-16842 CVE-2018-16890, CVE-2019-3822, CVE-2019-3823)
5. libcurl: fixes for CVE-2018-1000007, CVE-2017-8818, CVE-2017-8816, CVE-2018-1000005 Zebra 0.99.24: fix for CVE-2016-1245
6. busybox fixes for CVE-2016-6301, CVE-2016-2148, CVE-2017-16544, CVE-2016-2147, CVE-2017-15874, CVE-2014-9645, CVE-2011-5325 [DAL-1159]
7. pppd update to 2.4.7 (CVE-2014-3158, CVE-2015-3310)
8. Kernel patch to resolve CVE-2019-11815

## BUG FIXES

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1. Remote cloud connections were locked until while long running commands completed [DAL-1177]
2. Fix major issue with multiple IPsec policies When two remote subnets are configured in 2 Policies for an IKEv2 tunnel only Policy 2 traffic will pass [DAL-934]
3. Corrections to CLI show route [DAL-1176]
4. CLI **show system** output included outdated current time and uptime [DAL-1172]
5. Errors on console during WebUI firmware update [DAL-1140]
6. Faster fetching of signal attributes for LE910\_NA\_V2 modem
7. Fixed bug with parsing out MCC/MNC from AT#RFSTS response (LE910NAv2)
8. Fixed cloud connector crash on shutdown
9. Fixed process management issue with cloud connector and configuration
10. Check for configured serial ports in **show serial** command

11. Fixed bug where **show serial** option is visible for devices with no serial ports [DAL-1114]
12. Web GUI input validation rewording to be consistent
13. DAL-CLI: fix typos in descriptions, titles, and minimums
14. WebUI: Ensure correct versions of static files are loaded (using md5hash)
15. Serial ports were mistakenly listed under **Network** for metrics and state
16. Metrics had incorrect title, "System" in descriptors/state.
17. ModemManager: Telit error reporting patch
18. Intelliflow crash fix (divide by 0 on some datasets)
19. Intelliflow improve error reporting
20. System maintenance tasks do not run during duration window if reboot time is set [DAL-960]
21. SPIKE: Asynchronous CLI under Digi Remote Manager [URMA-1996]
22. Firmware update through WebUI doesn't recover when some other page is clicked during the update process [DAL-869]
23. Signal/dbm/percentage inaccurate on Verizon 2G and 3G connections with MC7354 [DAL-786]
24. Verify and fix dual APN support on the LM940 [DAL-742]
25. Unable to establish dual-APN connection with AT&T using Sierra modem [DAL-813]
26. Telit: Added logic to protect new C1\_AP modems from being bricked [DAL-744]
27. Telit: Added firmware check sum for version 414 of LE910-EU1 [DAL-822]
28. Update Telit LE910C1-NS modem firmware from 25.00.244 to 25.00.246 [NPIX-939]
29. Fix MTU support for PPP based connections
30. Added md5 sums for the latest Telit firmware for LE910\_NA1

## **VERSION 19.1.134.81 (Feb 14, 2019)**

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- Initial mass production release for Digi IX14
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