

TOC

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23.6.1.105 - July 2023, Feature

Release category: **Mandatory**

Features

1. Added new **Modem emulator** mode to serial ports to allow them to act as a dial-up modem emulator for handling incoming AT dial-ins [DAL-6669]
2. The ability to do a SIM survey on a device using Digi Remote Manager has been added. A connection will be attempted on each installed SIM and a report detailing the SIM connection details such as connection status, signal strength, APN used and cellular tower information is generated. The device will revert to the original setup once the SIM survey is complete.
3. New unsolicited query_state RCI responses in DigiRM for reporting system temperature and modem firmware versions [DAL-6550]

Enhancements

1. EX12, IX10: Removed the **Network** → **SD-WAN** configuration section [DAL-7881]
2. Add **System** → **Advanced Watchdog** configuration options to monitor memory usage, critical services and automatically reboot if those services fail
3. Automatically generate a support report in /opt/digi-support-watchdog-mem-full.bin before a device reboots due to a watchdog memory-full condition [DAL-7948]
4. Better support for updating cellular modem firmware using Digi Remote Manager has been added.

5. Added option for receiving **modem_firmware_update** remote command from Digi Remote Manager with a specific modem firmware version to update to [DAL-7656]
6. Added the following details to the metrics sent to Digi Remote Manager about the cellular modems inside the Digi device [DAL-7800]
 1. Add a unique ID tag to the response messages sent to Digi Remote Manager after a modem firmware update was initiated
 2. Include modem name and updated version in the modem firmware metric
 3. Ensures that modem firmware versions listed for the device are updated in Digi Remote Manager after a modem firmware update completes
7. Report the modem IMEI to Digi Remote Manager even when no SIM is installed [DAL-6778]
8. Added the following new values to the datastream metrics and RCI query_state responses reported to Digi Remote Manager [DAL-6868, DAL-6549, DAL-6655, DAL-6576]
 1. cellular/x/sim/y/registration - roaming/registration status of the modem
 2. metrics/eth/1/surelink/rtt - ICMP ping round-trip time for the Surelink ping test
 3. metrics/eth/1/surelink/fail_count - Count of failed Surelink tests, which gets reset if the tests start passing
 4. vpn/ipsec/x/disconnects - number of disconnects the device has had on an IPsec tunnel
 5. eth/x/link - up/down physical link status of the Ethernet port

6. `metrics/wifi/x/` - rx/tx/packet-count statistics for any configured Wi-Fi client-mode connections
7. `metrics/wifi-ap/` - rx/tx/packet-count statistics for any configured Wi-Fi access points
8. `sys/chassis/voltage` - input power supply voltage
9. `sys/chassis/temp` - temperature of the device
9. The device will immediately upload all health metrics to Digi Remote Manager when it establishes a connection for the first time. Previously it would take for the configured **Monitoring > Device Health** metric. [DAL-7559, DAL-7504]
10. Display the active interface used to connect to Digi Remote Manager in the Dashboard page of the web UI and the show cloud Admin CLI output [DAL-6446]
11. Updated the minimum-allowed location update and cellular modem update interval to 1- second [DAL-7440]
12. Added new Location source option to directly poll the cellular modem's GPS port [DAL-7682]
13. Added new **VPN → IP tunnels → Enable** open routing configuration setting to allows packets destined for an address which is not explicitly in our routing table to exit the iptunnel [DAL- 7076]
14. Added new **Network → Advanced → TCP retries2** configuration setting to control the number of times an unacknowledged TCP data packet will be retransmitted before the connection is considered lost (default 15 retries) [CEZ-570]
15. Update the help text descriptions for all serial port modes for additional clarity

16. Updated the SSH server enabled for serial ports to reference any configured custom SSH options in **Services** → **SSH** → **Custom** configuration [DAL-7863]
17. Added a new configuration setting under the options for a serial port set in PPP dial-in mode to control whether a default route gets added for the PPP interface (default: disabled) [DAL-7798]
18. Improved wording in the error message when a TACACS server cannot authorize the full CLI command due to RFC length constraints [DAL-7852]
19. Create a system log if WAN Bonding is enabled but unsubscribed [DAL-7882]
20. The Web UI dashboard has been updated to display the interface being used for the Digi Remote Manager connection.
21. IX10: Removed the **Network** → **SD-WAN** configuration configuration section [DAL-7881]

Security fixes

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

1. Update to Linux kernel version 6.3 [DAL-7606]
2. Updated busybox to version 1.36.1 [DAL-7819]
3. Update to OpenSSL version 1.1.1u [DAL-7818]
4. EX50: Update to OpenSSL version 3.1.1 [DAL-7818]
5. Update libcurl to version 8.1.2 [DAL-7817]
6. Update OpenSSH to version 9.3p1 [DAL-7816]

7. Update libgmp to version 6.2.1 [DAL-7820]
8. Update OpenVPN to version 2.6.4 [DAL-7822]
9. Update strongswan to version 5.9.10 [DAL-7823]
10. Update dnsmasq to version 2.89 [DAL-7533]
11. Update netifd/ubus/UCI/libublox to OpenWRT 19.07 build [DAL-6766]

Bug fixes

1. The incorrect reporting of the cellular TAC when using a TX54 5G device has been resolved. [DAL-7941]
2. An issue where a TX54 device getting stuck in a reboot loop if there are updated from 21.11 to 22.11 or 23.3 has been resolved. [DAL-7667]
3. An issue with TX64 devices where /opt directory was not being created during manufacturing, resulting in the device not being able to store configuration changes has been resolved. [DAL-7586]
4. The following issues with the LM940 cellular modem have been resolved:
 - The LM940 cellular modem could be powered off after a cellular modem firmware update has been resolved. [DAL-7719]
 - The LM940 cellular modem could disappear from the USB bus after switching SIMs. [DAL-7638]

5. Fixed errant IPv6 packets from being transmitted over a PPP dial-in serial connection [DAL-7799]
6. Fixed issue where WI-Fi hotspots would not startup correctly if they weren't linked to a network bridge [DAL-7623]
7. Fixed issue with improper LWM2M setting on LTE Cat-M modems preventing registration issues with AT&T and Verizon [DAL-7383]
8. Log message about intelliFlow being unsubscribed only if intelliFlow is enabled
9. Fixed configuration migration of IPsec Surelink settings from 23.3.x firmware to not add an update_routing_table action, as that action is not applicable to IPsec tunnels [DAL-7892]
10. Fixed incorrect status reported for Surelink status of IPsec and OpenVPN tunnels in the CLI and web UI [DAL-7893]
11. Fixed issue in Surelink migration from 22.11 and older firmware where IPsec and OpenVPN tunnels would not have their Surelink settings migrated over [DAL-7747]
12. Fixed issue in Surelink migration from 22.11 and older firmware where success_condition=all wasn't always properly migrated [DAL-7803]
13. Fixed issue in Surelink migration from 22.11 and older firmware where ping tests switched their default ping size from 20 to 1 byte, which can cause issues on some cellular networks [DAL-7769]
14. Fixed incorrect Surelink status reporting when Surelink was disabled on a network interface [DAL-7552]
15. Fixed logic of default DNS test so skipped tests are considered passing tests [DAL-7814]

16. Fixed rare issue where the device would report its MAC address as all zeroes when it initially connected to Digi Remote Manager [DAL-1609]
17. Fixed issue with utilizing BGP capability 70 to DMVPN hubs [DAL-7740]
18. Fixed bug where SNMP wouldn't provide updated settings if someone configured a new hostname for the device [DAL-7442]
19. Fixed bug where Intelliflow data would reset each time a network interface update happened on the Digi device [DAL-7579]
20. Fixed but preventing users from configuring network subnets in OSPF routes [DAL-7603]
21. Fixed issue where multiple SSIDs were not being scanned when DFS client support was enabled [DAL-7608]
22. Fixed issue preventing EG25-G & EC25-AF modems from connecting with certain SIMs with APNs that required username/password authentication [DAL-7644]
23. Fixed missing ICCID and modem firmware revision was not reported by the device [DAL-7757]
24. Fixed rare issue where LM940 would power off after a modem firmware update [DAL-7719]
25. Fixed intermittent issue where LM940 modem would disappear after switching SIM slots [DAL-7638]

26. Fixed 4G LTE connectivity on Bell Mobility SIMs by disabling auto-APN detection and using PDP context 1 [DAL-7350]
27. Fixed an issue preventing large file uploads through an EX50 [DAL-7729]
28. Fixed minor bugs in Realport authentication timing [DAL-7651]

DAL OS firmware update guidelines

Digi recommends that users of DAL OS devices update firmware in Digi Remote Manager.



TIP If you are updating many routers, see [Best practice | Update the firmware on multiple routers using a template](#).

It is also recommended that you review the following:

- Release information
- [What's new](#) and [release notes](#) for the current firmware version running on your devices, as well as any newer ones as this information may affect your update plan.

Known issues

- **TX54 product models**

The Serial status and statistics for the TX54 are incorrect on the Web UI and CLI (DAL-5763).

- **Bridging traffic from devices connected on an Ethernet port or Wi-Fi AP**

Due to the changes in the firewall, it is currently not possible to bridge traffic from devices connected on an Ethernet port or Wi-Fi AP in a bridged interface to a remote IP device via a gateway connected to an Ethernet port in the same bridged interface [DAL-9799].

- **IPsec using Default Router as the Local Endpoint**

There is an issue with IPsec where the tunnel will not come up when the default route is used as the Local Endpoint and the tunnel is not acting as the initiator. Specifying the interface type for the local endpoint should resolve the issue. [DAL-11361].

- **SSH / SCP login slow when FIPS mode is enabled**

Logging into SSH or SCP when FIPS mode is enabled can take more than 20 seconds. [DAL-12606].

Primary Responder mode considerations

DAL OS 23.9 and later supports a **PR¹** mode that can be enabled on any device. When enabled, the device acts as a Primary Responder PR device with a security-hardened, feature-restricted firmware targeted to comply with AT&T FirstNet® and Verizon ResponseVerify™ security requirements.

Features not available	Features available but disabled by default	Features enabled when PR mode is enabled
Telnet	SSH*	FIPS mode
Raw TCP listeners for serial ports	Wi-Fi pre-configured access points	
Wi-Fi WPA1 encryption	Internal serial console port	
Backup configuration file restore	USB ports	

*For DAL OS 25.8 feature release and newer, Primary Responder mode now requires key-based SSH authorization.

Additional considerations

- Users are prompted to enable two-factor authentication.
- A notification will appear in both the Web UI and CLI if the DAL device has Primary Responder mode enabled, but there are local users who do not have two-factor authentication enabled.

¹Primary responder

- The system `custom-default-config` CLI command available in release 24.12 cannot be run in Primary Responder mode.

Devices that use DAL OS firmware

Changes to DAL OS firmware for supported Cellular business unit devices are documented in this documentation portal and in the corresponding device user guides:

Console server	Enterprise	Industrial	IoT gateway and cellular router	Transportation
Connect IT Mini	EX12	IX10	IX15	TX40
	EX15	IX20		TX54
Connect IT 4	EX50	IX25		TX64
		IX30		TX64 RAIL
		IX40		


Step updates

If your devices are running a firmware version **earlier than 24.6.17.54** and you want to update them to version **24.9.79.151** or newer:

1. Do a step update to version **24.6.17.69**.
2. Proceed with updating to newer versions.

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Glossary

#

2FA

Two Factor Authentication

A

AI

Artificial Intelligence

API

Application Programming Interface

AT

Attention

C

CA

Carrier Aggregation

CLI

Command Line Interface

CMP

Connectivity Management Portal

CSV

Comma Separated Values

CTS

Clear to Send

D

DAL OS

Digi Accelerated Linux Operating System

DANI

Digi Artificial Network Intelligence

DCD

Data Carrier Detect

DL

Download

DRM

Digi Remote Manager

DSR

Data Set Ready

DSSS

Dual SIM Single Standby

E

eID

Embedded Identity Document

eIM

eSIM IoT Remote Manager

eMBB

Enhanced Mobile Broadband

ERC/CIP

Ethereum Request for Comments/Cardano Improvement Proposal

eSIM

Embedded Subscriber Identity Module

eUICC

Embedded Universal Integrated Circuit Card

EX

Enterprise

F

FOTA

Firmware Over-the-Air

G

GPS

Global Positioning System

GSMA

Global System for Mobile Communications Association

H

HTTPS

Hypertext Transfer Protocol Secure

I

IMSI

International Mobile Subscriber Identity

IP

Internet Protocol

IPA

IoT Profile Assistant

IX

Industrial

J

JSON

JavaScript Object Notation

L

LAN

Local Area Network

LPA

Local Profile Assistant

LTS

Long Term Support

M

MBIM

Mobile Broadband Interface Model

MCP

Model Context Protocol

mDNS

Multicast Domain Name System

MIoT

Massive Internet of Things

MNO

Mobile Network Operator

MSP

Managed Service Provider

MVNO

Mobile Virtual Network Operator

N

NMEA

National Marine Electronics Association

NSA

Non-Standalone

O

OTA

Over the Air

P

PLC

Programmable Logic Controller

PLMN ID

Public Land Mobile Network Identifier

PR

Primary responder

Q

QoS

Quality of Service

R

RSP

Remote SIM Provisioning

RTU

Remote Terminal Unit

S

SA

Standalone

SGP

Standardized Global Platform (for Secure Remote SIM Provisioning)

SIM

Subscriber Identity Module

SPN

Service Provider Name

SSH

Secure Shell or Secure Socket Shell

SSO

Single Sign On

T

TAIP

Trimble ASCII Interface Protocol

TCP

Transmission Control Protocol

TX

Transportation

U

UI

User Interface

UL

Upload

URL

Uniform Resource Locator

URLLC

Ultra-Reliable Low Latency Communication

V

VLAN

Virtual Local Area Network

VR

Virtual Reality

W

WAN

Wide Area Network

WLAN

Wide Local Area Network

WWAN

Wireless Wide Area Network