TOC

23.12.1.56 - December 2023, Feature **2**

New features 2

Enhancements 2

Security fixes 5

Bug fixes 6

Deprecation 9

DAL OS firmware update guidelines **10**

Known issues **11**

Primary Responder mode considerations **12**

Devices that use DAL OS firmware **14**

Step updates **15**

DAL OS firmware update guidelines **16**

Glossary **17**

23.12.1.56 - December 2023, Feature

Release category: **Mandatory**

New features

1. Support for linking OSPF routes through a DMVPN tunnel has been added.

    a. A new configuration option **Point-to-Point DMVPN** has been added to **Network** > **Routes** > **Routing services** > **OSPFv2** > **Interface** > **Network parameter**.

    b. A new configuration parameter redirect has been added to the **Network**> **Routes** > **Routing services** > **NHRP** > **Network configuration**.

2. Support for the **Rapid Spanning Tree Protocol (RSTP)** has been added.

3. Support for **device initiated RealPort** connections has been added.

4. TX54: Support for configuring the **TX54 Ignition Sense** as a **digital input** has been added.

Enhancements

1. A new option **After** has been added to the **Network** > **Modems Preferred SIM** configuration to prevent a device from switching back to the preferred SIM for the configured amount of time.

2. The WAN Bonding support has been updated

   a. New options have been added to the **Bonding Proxy** and **Client devices** configuration to direct traffic from specified network through the internal WAN Bonding Proxy to provide improved TCP performance through the WAN Bonding server.

   b. New options have been added to set the **Metric** and **Weight** of the WAN Bonding route which can be used to control the priority of the WAN Bonding connection over other WAN interfaces.

   c. EX50: The EX50 CPU settings have been updated to improve WAN Bonding performance.

3. A new DHCP server option to support BOOTP clients has been added. It is disabled by default.

4. Support for recognizing USB-based CAN serial adaptors from Canable and ValueCAN has been added.

5. The status of Premium Subscriptions has been added the System Support Report.

6. A new object_value argument have been added to the local Web API that can be used to configure a single value object.

7. The SureLink actions **Attempts** parameter has been renamed to the **SureLink Test failures** to better describe its use.

8. A new **vtysh** option has been added to the CLI to allow access to the **FRRouting** integrated shell.

9. A new **RealPort** option has been added to control the minimum TLS version that can be used.

10. A new **modem sms** command has been added to CLI for sending outbound SMS messages.

11. A new **Authentication** > **serial** > **Telnet Login** parameter to been added to control whether a user must supply authentication credentials when opening a Telnet connection to direct access a serial port on the device.

12. The OSPF support has been updated to support the setting the Area ID to an IPv4 address or a number.

13. The mDNS support has been updated to allow a maximum TXT record size of 1300 bytes.

14. The migration of the SureLink configuration from 22.11.x.x or earlier releases has been improved.

15. A new **System** → **Advanced watchdog** → **Fault detection tests** → **Modem check and recovery** configuration setting has been added to control whether the watchdog will monitor the initialization of the cellular modem inside the device and automatically take recovery actions to reboot the system if the modem doesn't initialize properly (disabled by default)

16. The EX15 and EX15W bootloader has been updated to increase the size of the kernel partition to accommodate larger firmware images in the future. Devices will need to be updated to the 23.12.1.56 firmware before updating to newer firmware in the future.

17. EX50: Configuration parameters for the EX50 Ethernet speed and duplex settings have been added.

18. IX40: 5G slicing is now supported on the IX40.

19. TX40: The maximum of number of Wi-Fi clients supported on the TX40 has been increased to 16.

Security fixes

1. The Linux kernel has been updated to version 6.5 [DAL-8325]
2. An issue with sensitive SCEP details appearing the SCEP log has been resolved. [DAL-8663]
3. An issue where a SCEP private key could be read via the CLI or Web UI has been resolved. [DAL-8667]
4. The musl library has been updated to version 1.2.4 [DAL-8391]
5. The OpenSSL library has been updated to version 3.1.3 [DAL-8447]

   CVE-2023-4807 CVSS Score: 7.8 High

   CVE-2023-3817 CVSS Score: 5.3 Medium
6. The OpenSSH package has been updated to version 9.5p1 [DAL-8448]
7. The curl package has been updated to version 8.4.0 [DAL-8469]

   CVE-2023-38545 CVSS Score: 9.8 Critical

   CVE-2023-38546 CVSS Score: 3.7 Low
8. The frrouting package has been updated to version 9.0.1 [DAL-8251]

   CVE-2023-41361 CVSS Score: 9.8 Critical

CVE-2023-47235 CVSS Score: 7.5 High

CVE-2023-38802 CVSS Score: 7.5 High

9. The sqlite package has been updated to version 3.43.2 [DAL-8339]

   CVE-2022-35737 CVSS Score: 7.5 High

10. The netif, ubus, uci, libubox packages have been updated to OpenWRT version 21.02 [DAL-7749]

Bug fixes

1. An issue with DMVPN that cause NHRP routing through tunnels to Cisco hubs to be unstable has been resolved. [DAL-8668]

2. An issue that prevented the handling of incoming SMS message from Digi Remote Manager has been resolved. [DAL-8671]

3. An issue that could cause a delay in connecting to Digi Remote Manager when booting up has been resolved. [DAL-8801]

4. An issue with MACsec where the interface could fail to re-establish if the tunnel connection was interrupted has been resolved. [DAL-8796]

5. An intermittent issue with the SureLink restart-interface recovery action on an Ethernet interface when re-initializing the link has been resolved. [DAL-8473]

6. An issue that prevented the Autoconnect mode on a Serial port from reconnecting until the timeout had expired has been resolved. [DAL-8564]

7. An issue that prevented IPsec tunnels from being established through a WAN Bonding interface have been resolved. [DAL-8243]
8. An intermittent issue where SureLink could trigger a recovery action for an IPv6 interface even if no IPv6 tests were configured has been resolved. [DAL-8248]
9. An issue with SureLink custom tests has been resolved. [DAL-8414]
10. An issue with LDAP authentication not working when LDAP is the only configured authentication method has been resolved. [DAL-8559]
11. An issue where local non-admin user passwords were not migrated after enabling Primary Responder mode has been resolved. [DAL-8740]
12. An issue where a disabled interface would show received/sent values of N/A in the Web UI Dashboard has been resolved. [DAL-8427]
13. An issue that prevented users from manually registering some Digi router types with Digi Remote Manager via the Web UI has been resolved. [DAL-8493
14. An issue where the system uptime metric was reporting an incorrect value to Digi Remote Manager has been resolved. [DAL-8494]
15. An intermittent issue with migrating IPsec SureLink setting from devices running 22.11.x.x or earlier has been resolved. [DAL-8415]
16. An issue where SureLink was not reverting the routing metrics when failing back on an interface has been resolved. [DAL-8887]

17. An issue where the CLI and Web UI would not show the correct networking details when WAN Bonding was enabled has been resolved. [DAL-8866]

18. An issue with the show wan-bonding CLI command has been resolved. [DAL-8899]

19. An issue that prevent devices from connecting to Digi Remote Manager over a WAN Bonding interface has been resolved. [DAL-8882]

20. An issue where Digi Remote Manager would display an incomplete firmware version for the EG25-G modem has been resolved. [DAL-7108]

21. An issue with serial modbus connections that cause incoming Rx responses from a serial port configured in ASCII mode if the reported length of the packet didn't match the received length of the packet to be dropped has been resolved. [DAL-8696]

22. EX50: An issue on the EX50 where the details of connected Wi-Fi clients where not being displayed in the CLI or Web UI. [DAL-4987]

23. EX15/EX15W: A rare issue on the EX15 and EX15W where the modem could get into an unrecoverable state unless the device or modem was power cycled has been resolved. [DAL-8123]

24. EX50: An issue on the EX50 where DHCP reply packets could be dropped on a network bridge interface has been resolved. [DAL-8462]

25. EX50: An issue on the EX50 preventing it from establishing client-mode Wi-Fi connections has been resolved. [DAL-7592]

26. IX40: An issue where the IX40 WWAN LED should show an incorrect status for dual-APN configurations has been resolved. [DAL-8439]

27. IX40/TX40: An issue with the IX40/TX40 5G unit not connecting to the Orange network in France has been resolved. [DAL-8512]

28. TX54: An issue with TX54 Ethernet connectivity with Axoim devices has been resolved. [DAL-8499]

29. TX54: An issue with the Primary Responder (PR) mode not automatically enabling on some TX54 SKUs has been resolved. [DAL-8740]

30. TX64: An issue where the wrong modem type was being reported to Digi Remote Manager for the TX64 5G wwan2 interface has been resolved. [DAL-8893]

Deprecation

1. EX12/EX15/EX15W: The network routing services (e.g. OSPF, BGP) that are provided by the frrouting package have been removed from the EX12, EX15 and EX15W devices.

2. EX12: WAN Bonding has been removed from the EX12 firmware.

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 PR[1] 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.

[1]Primary 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 Connect IT 4	EX12 EX15 EX50	IX10 IX20 IX25 IX30 IX40	IX15	TX40 TX54 TX64 TX64 RAIL

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.

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.

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 Artifical Network Intelligience

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