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22.11.48.17 - January 2023 (EX)

Release category: **Recommended**

Enhancements

1. Improved cellular performance in 5G SA-mode [DAL-7033]

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.

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It is also recommended that you review the following:

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Glossary

#

2FA
Two Factor Authentication

A

AI
Artificial Intelligience

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