Release Notes for Cisco Embedded Service 6300 Series Router – Release 17.5.1

Revised February 11, 2022

The following release notes support the Cisco ESR6300 router. These release notes are updated to describe new features, limitations, troubleshooting, recommended configurations, caveats, and provide information on how to obtain support and documentation.

Table 1 provides the hardware product IDs and brief descriptions for the boards.

Table 1 Cisco ESR 6300 SKUs

SKU	Description	Ports/Module Interfaces
ESR-6300-NCP-K9	Embedded Router Board without a cooling plate. (NCP = No Cooling Plate)	4 GE LAN ports 2 combo GE WAN ports 1 USB 3.0 port 1 mSATA module interface
ESR-6300-CON-K9	Embedded Router Board with cooling plate. (CON = Conduction cooled).	4 GE LAN ports 2 combo GE WAN ports 1 USB 3.0 port 1 mSATA module interface

Contents

This publication consists of the following sections:

General Description

The ESR6300 is a small form factor embedded router module with a board size of 3.0" x 3.775" (76.2mm x 95.885mm). The more compact design simplifies integration and offers system integrators the ability to use the Cisco ESR 6300 in a wide variety of embedded applications.   The ESR card is available with a Cisco-designed cooling plate customized to the ESR, as well as without the cooling plate for system integrators who want to design their own custom thermal solution.

Image Information and Supported Platforms

Note: You must have a Cisco.com account to download the software.

Cisco IOS-XE Release 17.5.1 includes the following Cisco image:

- c6300-universalk9.17.05.01.SPA.bin

The latest software downloads for the ESR6300 can be found at:

https://software.cisco.com/download/home/286323433

Click on the ESR6300 link to take you to the specific software you are looking for.

Interface Naming Conventions

The following table shows the naming conventions.

Table 2   Hardware Interface Naming Convention

Port	Naming Convention
Gigabit Ethernet combo port WAN/Layer3	gigabitEthernet 0/0/0 gigabitEthernet 0/0/1
Gigabit Ethernet LAN/Layer 2 ports	gigabitEthernet 0/1/0 gigabitEthernet 0/1/1 gigabitEthernet 0/1/2 gigabitEthernet 0/1/3
USB Port	usbflash0: (IOS and rommon)
Console Port	Line console 0

Known Limitations

The following features are not supported on the ESR6300 with software release 17.5.1:

- No support for MacSec or DLEP in this release. (MQC: modular quality of service command line).

- Layer 2 COS to DSCP mapping does not work due to no ASIC chipset support for the feature.

- Copper FE SFPs are not supported on the ESR6300.

- Copper GE SFPs are only supported in config terminal > service internal > service unsupported-transceiver mode.

- Cisco does not claim IP Mobility for Ethernet support on the ESR6300.

- Auto-negotiation for 10Mbps, 100Mbps, 1000Mbps in full-duplex mode is supported. For half duplex, support is only on 10Mbps and 100Mbps.

- Refer to the Cisco Approved Vendor List (AVL]) for Cisco USBs. Kingston USB 3.0 works as well. Ensure the USB has a single partition and ext2, Fat16, or Fat32 format only.

- Cellular functionality is not supported.

- Radio Aware Routing is not supported.

- For Security: No support for TLS, TrustSec, MacSec, CWS [Cloud Web Security], IDS/IPS.

This release has the following limitations or deviations for expected behavior:

- The WebUI Licensing Page is unsupported for release 17.5.1. For all licensing configuration, please use CLI mode or CSSM.

- In the Web User Interface (WebUI), there are two known issues where erroneous information is displayed. In both of these cases, the information is present in the WebUI even though the functionality is **NOT** supported on the ESR6300.

  – Under **Configuration > Security > Threat Defense > snort** there is a RAM and DISK size prerequisite check that fails.

  – Under **Configuration > Security >** there is a category for Trustsec.

These are both cosmetic issues due to the features being unavailable in the 17.5.1 release.

■ The IOS boot system setting allows users to specify any flash-based storage URL for IOS image booting.

The rommon on the ESR6300 does not expose the non-IOX msata partition, therefore auto-booting from mSATA will not work even if it is configured in IOS.

Example: Users must not configure a boot system setting as follows:

```
(config)#boot system flash msata:ios-image
```

■ Receive a message 'unable to open bootflash:golden.bin (14)' during bootup.

Example: Pushing the reset button displays the unable to open message.

```
ESR-6300-CON-K9 platform with 4194304 Kbytes of main memory

MCU Version - Bootloader: 4, App: 10

MCU is in application mode.

Reset button push detected

unable to open bootflash:golden.bin (14)
```

This message is intended by design to inform the user they have not setup a golden.bin config file.

Note: Starting with Cisco IOS XE Amsterdam 17.3.2, with the introduction of Smart Licensing Using Policy, even if you configure a hostname for a product instance or device, only the Unique Device Identifier (UDI) is displayed. This change in the display can be observed in all licensing utilities and user interfaces where the hostname was displayed in earlier releases. It does not affect any licensing functionality. There is no workaround for this limitation.

The licensing utilities and user interfaces that are affected by this limitation include only the following: Cisco Smart Software Manager (CSSM), Cisco Smart License Utility (CSLU), and Smart Software Manager On-Prem (SSM On-Prem).

Major Enhancements

The following features are included in the Cisco IOS-XE release 17.5.1:

RFC4884 ICMPv6 and MPLSv6

RFC 4884 redefines selected ICMP error messages to support multi-part operation.

A multi-part ICMP message carries all of the information that ICMP messages carried previously, as well as additional information that applications may require.

RFC 4884 feature introduces an 8-bit length attribute to the following ICMPv6 messages with extensions.

■ Destination Unreachable (type = 1)

■ Time Exceeded (type = 3)

As part of RFC 4884 feature, for applications like MPLS/trace route which add extensions to type 1 and type 3 ICMPv6 error messages, original datagram length will be added in ICMPv6 header.

Also, infra is added as part of RFC 4884 support. If any new application is adding extensions it has to call defined registries to be compliant with RFC 4884.

Backward compatibility is also taken care of as part of this feature.

Major Enhancements

This feature is enabled by default and a CLI "[no] ipv6 icmp od-length enable" is provided which is enabled by default.

Command example

```
ipv6 icmp od-length enable
```

Note: RFC4884 ICMP v4 and MPLS v4 extensions will be supported in the IOS-XE 17.6.1 release.

Netboot Support

The Netboot (TFTP boot) feature is now supported on the ESR6300. The ESR6300 has two Combo ports, Copper and Fiber ports (SFP) ports that support TFTP boot.

The Netboot (TFTP boot) feature allows the user to recover their router in the case that there is no image in the bootflash or USB.

The following configuration needs to be in place in ROMMON:

- WAN port Gigabit-Ethernet 0/0/0 or 0/0/1 should be connected to a TFTP network

- Path to image should be in a TFTP directory

- set IP_ADDRESS=<IP address of router>

- set IP_SUBNET_MASK=<mask>

- set DEFAULT_GATEWAY=<IP address of gateway>

- boot tftp://<server IP address>/<path to image>

Alarm port Support on the ESR6300

There is one alarm port available on the ESR6300. The IOS name for the alarm port is Alarm Contact 0.

The following configuration commands are available in IOS:

- alarm contact 0 enable

- alarm contact 0 description

- alarm contact 0 severity

- alarm contact 0 trigger

The configuration commands also have their equivalent "no" prefaces.

Configuration

To configure the feature, the alarm contact 0 needs to be enabled first. Perform the following:

```
Router#config term
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#alarm contact 0 enable
Router(config)#alarm contact 0 description test
Router(config)#alarm contact 0 severity critical
```

To view the configuration:

```
Router#show alarm | section Alarm contact 0
```

```
Alarm contact 0:
Description: External alarm contact on Motherboard
Status: Not Asserted
Application: Dry
Severity: minor
Trigger: Closed
Mode: Input
Router#
```

Related Documentation

The following documentation is available:

- All of the Cisco ESR6300 documentation can be found here:

    https://www.cisco.com/c/en/us/support/routers/6300-series-embedded-service-routers/tsd-products-support-series-home.html

Caveats

Caveats describe unexpected behavior in Cisco IOS releases. Caveats listed as open in a prior release are carried forward to the next release as either open or resolved.

Note: You must have a Cisco.com account to log in and access the Cisco Bug Search Tool. If you do not have one, you can register for an account.

For more information about the Cisco Bug Search Tool, see the Bug Search Tool Help & FAQ.

Open Caveats

- **CSCvy13817**

    In release 17.5.1, CME works only in Network-Advantage, not in Network-Essential.

    Symptom: Up through release 17.4.1, CME worked with both Network-Advantage and Network-Essential license levels.

    Workaround: In the upcoming release 17.6.1 and beyond, CME will be supported on both license levels.

- **CSCvx62866**

    CAN bus baudrate set fails message seen during bootup in 17.5.1.

    Workaround: This message is benign and has zero functional impact. The message will be suppressed/hidden in the upcoming release 17.6.1.

Resolved Caveats

None at this time.

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