



FPGA Profiles

This document outlines the structure and requirements for FPGA profiles used within the system architecture.

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FPGA Profile

The FPGA Profile is a configuration mechanism that manages the availability of hardware-assisted features on supported switches.

- Enables efficient allocation of platform resources.
- Supports multiple time-sensitive and resilient industrial protocols.
- Operates without requiring hardware changes.

FPGA Profile feature details

The switch supports three FPGA profiles, each with a different combination of features.

Table 1: FPGA Profile configurations

FPGA Profile Name	Description
Default	Supports one instance of PRP or HSR, one instance of DLR, and CTS IPv4 Security Group Tag, with VRF and Security Group Access Control List Logging.
cts-ipv6	Supports CTS IPv4 and IPv6 SGT with VRF and SGACL Logging.
Redundancy	Supports one instance of PRP or HSR and two instances of DLR.

**Note**

With the **default** FPGA profile, a Cisco Catalyst IE3400 Rugged Series Switch with an IEM-3400 expansion module supports two PRP instances and two DLR rings. You can configure one PRP instance and one DLR ring on the base switch and the other PRP instance and DLR ring on the expansion module, or vice versa. The switch supports only one HSR ring, regardless of whether an expansion module is installed. To support three DLR rings, use the **redundancy** FPGA profile. You can configure one DLR ring on the base switch and two on the expansion module.

Prerequisites

Remove the configurations related to the current active FPGA Profile before changing the FPGA Profile, as those configurations are not valid for the new profile.

Guidelines and limitations

- Configure the FPGA Profile globally on the switch. All base system and expansion modules use the same FPGA Profile. If your switch has an expansion module, the profile applies to it as well.
- You must reload the switch after changing the configured FPGA Profile to activate the profile.
- FPGA Profile is supported in Cisco IOS XE release 17.8 and later. If you upgrade from an earlier release that does not support FPGA Profile, such as Cisco IOS XE 17.7.1, the system installs the default FPGA Profile. Any FPGA Profile-controlled features that you configured in the earlier release and that the default profile does not include will be rejected.
- CTS IPv6 is not supported in the default profile, so CTS IPv6 configurations are rejected during bootup after the upgrade.
- After a Cisco IOS XE upgrade where the cts-ipv6 profile is loaded, existing PRP and DLR configurations are rejected upon bootup.
- To keep the existing profile and feature configurations after an upgrade, select the required FPGA Profile after booting the switch. Refer to the procedure in [Configure an FPGA profile, on page 3](#).
- Do not copy running-config to startup-config or write memory.
- Reload the switch to ensure the required feature configurations are not discarded.

Default settings

The default FPGA Profile name is "**default**".

Configure an FPGA profile

Configure and activate the required field-programmable gate array (FPGA) profile on the switch. The selected profile becomes active after the switch reloads.

Follow these steps to configure the FPGA Profile:

Procedure

Step 1 (Optional) Use the **show platform fpga-profile** command to display the currently active FPGA profile and the profile that will become active after the next reload.

Example:

```
Switch# show platform fpga-profile active
Active FPGA profile      : CTS-IPv6
Active feature set      : CTS IPv4 and IPv6 SGT, VRF, SGACL Logging

FPGA profile upon reload : CTS-IPv6
Feature set upon reload  : CTS IPv4 and IPv6 SGT, VRF, SGACL Logging
```

Step 2 Use the **fpga-profile activate { cts-ipv6 | default | redundancy }** command to select the FPGA profile to activate after the next reload.

- **cts-ipv6**: Activates the profile that supports CTS IPv4 and IPv6 SGT with VRF and SGACL logging.
- **default**: Activates the profile that supports CTS IPv4 SGT with VRF and SGACL logging, PRP, and DLR.
- **redundancy**: Activates the profile that supports PRP and DLR.

Example:

```
Switch# fpga-profile activate redundancy
```

Step 3 Use the **reload** command to reload the switch and activate the selected FPGA profile.

Example:

```
Switch# reload
```

Feature history

This section documents the release history and initial support information for the FPGA Profile feature.

Feature Name	Release	Feature Information
FPGA Profile	Cisco IOS XE 17.8.1	Initial support on Cisco Catalyst IE3400 Rugged Series Switches and Cisco Catalyst IE3400 Heavy Duty Series Switches.

