

Configure FPGA Profile

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FPGA Profile

The FPGA Profile feature turns certain software features assisted by field-programmable gate array (FPGA) on or off. Some switch features such as Parallel Redundancy Protocol (PRP), High-Availability Seamless Redundancy (HSR), and Device Level Ring (DLR) rely heavily on FPGA implementation. FPGA Profiles allow for efficient allocation of platform resources for the operation of multiple time sensitive, resilient industrial protocols without changes to hardware.

Note FPGA Profiles are supported only on Cisco IE3505 and IE3505H Series Switches. FPGA Profiles are applied globally to the base switch. If an expansion module is present, it uses the same FPGA Profile as configured for the base switch.

The switch supports two FPGA profiles with different combinations of features supported in each profile, as shown in the following table.

FPGA Profile Name	Description
default	Supports 1 instance of PRP or HSR and 3 instance of DLR.
redundancy	Supports 2 instance of PRP or HSR and 2 instances of DLR. **Note** The number of HSR rings supported on the system remains 1 and cannot be increased by the use of expansion module. The same profile that is configured for the switch must be used for the expansion module.

Prerequisites

- Before changing the FPGA Profile, we suggest that you remove the configurations related to the current active FPGA Profile, because those configurations are not valid for the new profile.

Guidelines and Limitations

- FPGA Profile is configured globally on the switch. All base system and expansion modules load the same FPGA Profile configured for the switch. If an expansion module is present, the FPGA Profile configured for the switch also applies to the expansion module.
- You must reload the switch after changing the configured FPGA Profile to activate the profile.
- FPGA Profile is supported on Cisco IE3505 and Cisco IE3505H switches in the Cisco IE3500 Rugged Series.

  To keep the existing profile and feature configurations after an upgrade:

  1. After booting the switch, select the required FPGA Profile as described in Configure the FPGA Profile, on page 2.

     The selected FPGA profile takes effect only after you reload the switch. To prevent unsupported feature configurations from being saved or discarded before the new profile becomes active, do not copy the running configuration to the startup configuration or run the **write memory** command before reloading the switch.

  2. Reload the switch.

     The required feature configurations will not be discarded because they are supported by the selected profile.

Default Settings

The default FPGA Profile name is "default".

Configure the FPGA Profile

Follow these steps to configure the FPGA Profile.

Procedure

Step 1 Use the **fpga-profile activate { default | redundancy }** command in EXEC mode to activate the required FPGA profile.

Example:

```
Switch# fpga-profile activate ?
  default     3 DLR rings and a PRP-channel/HSR-ring
  redundancy  2 DLR rings and 2 PRP-channels/1 HSR-ring
Switch# fpga-profile activate redundancy
```

If you use the switch as a PRP or HSR RedBox and require one PRP channel or one HSR ring, you can use either the, **default** profile or the **dlr** profile. Use the **dlr** profile when the deployment also requires 3 DLR rings.

- **default**: 2 DLR rings and 1 PRP-channel or 1 HSR-ring
- **dlr**: 3 DLR rings and 1 PRP-channel or 1 HSR-ring
- **hsr-quadbox**: HSR-HSR quadbox
- **redundancy**: 2 PRP-channels or 1 HSR-ring

Step 2 (Optional) Use the **fpga-profile deactivate** command in EXEC mode to change to the default FPGA profile.

Example:

```
Switch# fpga-profile deactivate
```

Step 3 (Optional) Use the **show platform fpga-profile active** command to display the FPGA profile that is currently active on the switch:

Example:

```
Switch# show platform fpga-profile active?
        active: current active application profile information
```

Displays the active FPGA profile and FPGA profile after reload.

- **active**: Displays the current active application profile information.
- **all**: Displays all supported application profile information.
- **default**: Displays the default application profile.

Example:

```
Switch# show platform fpga-profile active
Active FPGA profile       : default
Active feature set        : 3 DLR rings and a PRP-channel/HSR-ring

FPGA profile upon reload  : default
Feature set upon reload   : 3 DLR rings and a PRP-channel/HSR-ring
```

Displays default FPGA-profile

```
Switch# show platform fpga-profile default
FPGA profile  : default
Feature Set   : 3 DLR rings and a PRP-channel/HSR-ring
```

```
Switch# show platform fpga-profile default
FPGA profile  : default
Feature Set   : 2 DLR rings and 1 PRP-channel/1 HSR-ring
```

Step 4 Use the **reload** command to reload the switch.

Example:

```
Switch#reload
```