

NCS5700 MDB Profile

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Hardware MDB Profiles for Layer 2 and 3 Services

Table 1: Feature History Table

Feature Name	Release	Description
Hardware MDB profiles for Layer 2 and Layer 3 services overlay scale increased to 32000	Release 25.2.1	Introduced in this release on: NCS 5700 fixed port routers, NCS 5700 line cards [Mode: Compatibility; Native] You can now configure hardware MDB profiles for Layer 2 and Layer 3 services together, over SRv6 underlay, enabling you to set overlay scales to 32000 in terms of the number of routers and sessions. This release adds the following hardware MDB profiles to the **hw-module profile mdb** command: • **l2max-srv6** • **l2max-se-srv6** • **l3max-srv6** • **l3max-se-srv6**

Feature Name	Release	Description
Hardware MDB Profiles for Layer 2 Services	Release 7.6.1	You can now configure hardware modular database (MDB) profiles for Layer 2 services, enabling you to achieve higher scales in terms of the number of routers and sessions. In earlier releases, you could configure hardware MDB profiles for Layer 3 services. This release adds the following hardware MDB profiles to the **hw-module profile mdb** command: • **l2max** • **l2max-se**

Hardware MDB profile is used to modify router resources for the specific needs during the router boot up time. You can configure the hardware MDB profile or you can view the default profile. The hardware MDB profiles are applicable for base and scale line cards of fixed and modular Cisco NCS 5700 Series Routers.

Hardware MDB profile feature was introduced in Cisco IOS XR software Release 7.4.1 with **l3max** and **l3max-se** configuration profile options.

Starting from Cisco IOS XR software Release 7.6.1, it supports **l3max**, **l3max-se**, **l2max**, and **l2max-se** profiles, and provides high scale layer 2 and layer 3 services. Router with base line cards supports **l2max** and **l3max** profiles, and routers with scale line cards support **l2max-se** and **l3max-se** profiles.

All features that are supported on **l3max** or **l3max-se** hardware profile are also supported on **l2max** or **l2max-se** hardware profile and the features that are supported on **l2max** or **l2max-se** hardware profile are also supported on **l3max** or **l3max-se** hardware profile respectively.

Use the **hw-module profile mdb** command in the Global Configuration mode to configure the hardware MDB profile options.

Modular routers boots up in the Cisco NCS 5700 Series compatibility mode by default. You can configure the router to boot up in native mode and with the desired MDB profile.

Following tables provides the base and scale profiles of MDB for Cisco NCS 5700 Series Routers and Line Cards.

Table 2: MDB Hardware Module Profile for Fixed System of Cisco NCS 5700 Series Routers

Base Profile	Scale Profile
• Default profile for Cisco NCS 5700 Series Base Router is **l3max**. • Use **hw-module profile mdb l2max** command to configure **l2max** profile.	• Default profile for Cisco NCS 5700 Series Scale Router is **l3max-se**. • Use **hw-module profile mdb l2max-se** command to configure **l2max-se** profile.

Table 3: MDB Hardware Module Profile for Modular System of Cisco NCS 5700 Series Routers and Line Cards

Type	Base Profile	Scale Profile
Description	Configure NCS 5700 MDB profile for the system which has the following line cards: • Cisco NCS 5700 Series base line cards alone. • Cisco NCS 5700 Series base and Cisco NCS 5700 Series scale line cards. • Cisco NCS 5700 Series scale line cards alone. **Note** Recommended the configuration of **l3max-se** and **l2max-se** only when Cisco NCS 5700 Series scale line cards are present.	Configure MDB scale profile for the system which has Cisco NCS 5700 Series scale line cards.
NCS5700 MDB Profile	• Ensure that the system has either base or scale Cisco NCS 5700 Series line cards. • Command to configure Cisco NCS 5700 Series native mode is **hw-module profile npu native-mode-enable**. • Command to configure **l3max** MDB profile is **hw-module profile mdb l3max**. System loads with native mode and **l3max** MDB profile in a single reload. • Command to configure **l2max** MDB profile is **hw-module profile mdb l2max**. System loads with native mode and **l2max** MDB profile in a single reload. **Note** Even if the system has only scale line cards, the default profile is **l3max**. Other profiles can be configured as specified in the Configuration Example section.	• Ensure that the system has Cisco NCS 5700 Series scale line cards. • Command to configure Cisco NCS 5700 Series native mode is **hw-module profile npu native-mode-enable**. • Command to configure **l3max-se** MDB profile is **hw-module profile mdb l3max-se**. System loads with native mode and **l3max-se** MDB profile in a single reload. • Command to configure **l2max-se** MDB profile is **hw-module profile mdb l2max-se**. System loads with native mode and **l2max-se** MDB profile in a single reload.

Note

- You must reload the router to activate the newly configured MDB profile.
- The default profile for a NCS-57C3-MOD-SYS (base) router is **l3max**. As per the requirements, you can configure it to **l2max** profile.
- The default profile for a NCS-57C3-MOD-SE-S (scale) router is **l3max-se**. As per the requirements, you can configure it to **l2max-se** profile. Even though base profiles can be configured on SE systems, it is not recommended to use low scale profile.

Restrictions

The following hardware doesn't support hardware MDB profiles.

- Cisco NCS 5500 Series line cards
- Cisco NCS 5700 Series line cards operating in compatible mode.
- Cisco NCS-57D2-18DD-SYS line card operating in native mode does not support these MDB profiles:
  - l2max-srv6
  - l2max-se-srv6
  - l3max-srv6
  - l3max-se-srv6

Configure Hardware MDB Profiles for Layer 2 Services

Router supports configuration of hardware MDB profiles for layer 2 services in the following combination of line cards:

- Cisco NCS 5700 Series base line cards alone.
- Cisco NCS 5700 Series base and Cisco NCS 5700 Series scale line cards.
- Cisco NCS 5700 Series scale line cards alone.

Prerequisites:

- Ensure that the system has either base or scale Cisco NCS 5700 Series line cards.
- Use **hw-module profile npu native-mode-enable** command to configure Cisco NCS 5700 Series in native mode.

Configuration Example

This example shows how to configure the hardware MDB profile as **l3max** in the Cisco NCS 5700 Series base line cards.

```
Router# configure
Router(config)# hw-module profile mdb l3max
Router(config)# commit
```

Verification

```
Router# show hw-module profile mdb-scale
MDB scale profile: l3max
```

Configuration Example

This example shows how to configure the hardware MDB profile as **l2max** in the Cisco NCS 5700 Series base line cards.

```
Router# configure
Router(config)# hw-module profile mdb l2max
Router(config)# commit
```

Verification

```
Router# show hw-module profile mdb-scale
MDB scale profile: l2max
```

Configuration Example

This example shows how to configure the hardware MDB profile as **l3max-se** profile in the Cisco NCS 5700 Series scale line cards.

```
Router# configure
Router(config)# hw-module profile mdb l3max-se
Router(config)# commit
```

Verification

```
Router# show hw-module profile mdb-scale
MDB scale profile: l3max-se
```

Configuration Example

This example shows how to configure the hardware MDB profile as **l2max-se** profile in the Cisco NCS 5700 Series scale line cards.

```
Router# configure
Router(config)# hw-module profile mdb l2max-se
Router(config)# commit
```

Verification

```
Router# show hw-module profile mdb-scale
MDB scale profile: l2max-se
```