



Configuring MAC/ARP Hardware Resource Carving Template

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Information About MAC/ARP Hardware Resource Carving Template

On the Cisco Nexus device, the IPv4/IPv6 and unicast/multicast entries share the same tables. In addition, the same tables are shared by Station Table Management (STM) and the Host Route Table (HRT). STM is the part of the host table that holds the MAC entries. HRT is the part of the host table that holds ARP, IPv6 ND, and /32 host routes. The STM/HRT template profile feature is specific to the Cisco Nexus device. This feature provides you with a flexibility to carve STM & HRT table sizes per their requirements. The total table size is 256k. You can apply any of the following four pre-defined templates:

| Template Profiles | Specifications |
|-------------------|---|
| hrt-128-stm-128 | HRT size: 128k, STM size: 128k (default size) |
| hrt-96-stm-160 | HRT size: 96k, STM size: 160k |
| hrt-64-stm-192 | HRT size: 64k, STM size: 192k |
| hrt-32-stm-224 | HRT size: 32k, STM size: 224k |



Note The hrt-96-stm-160 and hrt-32-stm-224 template profiles are not recommended in the presence of IPv6 entries. This is because these two profiles result in an odd number of SRAMs available for the HRT table. Insertion of IPv6 entries need free spaces in 2 consecutive SRAMs.

The recommended maximum ARP percentage of the configured value is 50%. The recommended maximum MAC percentage of the configured value is 90%. For example, if the profile is set to hrt-96-stm-160, 50% of 96k (48k) is the recommended maximum ARP entries that a switch can have.

When applying or unapplying a template profile, you need to enter the **copy running-config startup-config** command and reload the switch in order to activate the newly applied/default template. These commands are per-switch based, therefore they need to be configured explicitly on a vPC peer switch.

Configuring the MAC/ARP Hardware Resource Template

Procedure

| | Command or Action | Purpose |
|---------------|--|---|
| Step 1 | switch# configure terminal | Enters global configuration mode. |
| Step 2 | switch(config)# hardware profile route resource service-template <i>template-name</i> | Commits a specified pre-defined template. Four pre-defined stm/hrt templates exist: <ul style="list-style-type: none"> • hrt-128-stm-128 Default value • hrt-96-stm-160 • hrt-64-stm-192 • hrt-32-stm-224 When entering this command, a message is displayed telling you the applied stm/hrt template will be activated upon switch reload. Upon rebooting, this pre-defined template is applied. If this command is issued multiple times, the latest stm/hrt template is applied. |
| Step 3 | (Optional) switch(config)# copy running-config startup-config | Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration. |

Example

This example shows how to configure the hrt-96-stm-160 template:

```
switch# configure terminal
switch(config)# hardware profile route resource service-template hrt-96-stm-160
switch(config)# copy running-config startup-config
```

What to do next

Reload the switch.

Applying the Default Template

Procedure

| | Command or Action | Purpose |
|---------------|--|---|
| Step 1 | switch# configure terminal | Enters global configuration mode. |
| Step 2 | switch(config)# no hardware profile route resource service-template | Applies the default template. |
| Step 3 | (Optional) switch(config)# copy running-config startup-config | Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration. |

Example

This example shows how to apply the default template.

```
switch# configure terminal
switch(config)# no hardware profile route resource service-template
switch(config)# copy running-config startup-config
```

What to do next

Rebooting the switch applies the default template (hrt-128-stm-128).

Verifying the MAC/ARP Hardware Resource Carving Template Configuration

To display MAC/ARP Hardware Resource Carving Template configuration information, enter one of the following commands:

| Command | Purpose |
|--|--|
| show hardware profile route resource template | Displays all existing templates including the default. |
| show hardware profile route resource template <i>template-name</i> | Displays the details of a specific pre-defined template. |

| Command | Purpose |
|---|---|
| show hardware profile route resource template default | Displays the details of the default template. |
| show running-config hardware profile route resource template | Displays the running configuration information related to the template manager. Displays the currently applied non-default stm/hrt template. If the default template is applied, nothing is displayed here. |
| show startup-config hardware profile route resource template | Displays the startup configuration information related to the template manager. When entering the copy running-config startup-config command, the currently applied non-default stm/hrt template is displayed. If the default template is applied, nothing is displayed. |