

Configuring Inner and Outer TPIDs and VLAN IDs

For some rewrite operations, you must configure the inner or outer TPID values and inner or outer VLAN ID values. These values can be applied to either the input VLAN map or the output VLAN map.

On Ethernet IQ, IQ2 and IQ2-E interfaces, on MX-series router Gigabit Ethernet, Tri-Rate Ethernet copper, and 10-Gigabit Ethernet interfaces, and on aggregated Ethernet interfaces using Gigabit Ethernet IQ2 and IQ2-E or 10-Gigabit Ethernet PICs on MX-series routing platforms, include the `inner-tag-protocol-id` statement to configure the inner TPID. For the inner VLAN ID, include the `inner-vlan-id` statement. For the outer TPID, include the `tag-protocol-id` statement. For the outer VLAN ID, include the `vlan-id` statement:

```
[Unresolved xref] {
    (pop | pop-pop | pop-swap | push | push-push | swap | swap-push | swap-swap);
    inner-tag-protocol-id tpid;
    inner-vlan-id number;
    [Unresolved xref] tpid;
    [Unresolved xref] number;
}
[Unresolved xref] {
    (pop | pop-pop | pop-swap | push | push-push | swap | swap-push | swap-swap);
    inner-tag-protocol-id tpid;
    inner-vlan-id number;
    [Unresolved xref] tpid;
    [Unresolved xref] number;
}
```

For aggregated Ethernet interfaces using Gigabit Ethernet IQ interfaces, include the `tag-protocol-id` statement for the outer TPID. For the outer VLAN ID, include the `vlan-id` statement:

```
[Unresolved xref] {
    (pop | push | swap);
    [Unresolved xref] tpid;
    [Unresolved xref] number;
}
[Unresolved xref] {
    (pop | push | swap);
    [Unresolved xref] tpid;
    [Unresolved xref] number;
}
```

For the input VLAN map, include these statements at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number* input-vlan-map]
- [edit logical-systems *logical-system-name* interfaces *interface-name* unit *logical-unit-number* input-vlan-map]

For the output VLAN map, include these statements at the following hierarchy levels:

- [edit interfaces *interface-name* unit *logical-unit-number* output-vlan-map]
- [edit logical-systems *logical-system-name* interfaces *interface-name* unit *logical-unit-number* output-vlan-map]

The VLAN IDs you define in the input VLAN maps are stacked on top of the VLAN ID bound to the logical interface. For more information about binding a VLAN ID to the logical interface, see [\[Unresolved xref\]](#).

All TPIDs you include in input and output VLAN maps must be among those you specify at the [edit interfaces *interface-name* *gigether-options* ethernet-switch-profile [\[Unresolved xref\]](#) [*tpids*]] hierarchy level or [edit interfaces *interface-name* *aggregated-ether-options* ethernet-switch-profile [\[Unresolved xref\]](#) [*tpids*]] hierarchy level. For more information, see Configuring Frames with Particular TPIDs to Be Processed as Tagged Frames.

Table 1 and Table 2 specify when these statements are required. Table 1 indicates valid statement combinations for rewrite operations for the input VLAN map. “No” means the statement must not be included in the input VLAN map for the rewrite operation. “Optional” means the statement may be optionally specified for the rewrite operation in the input VLAN map. “Any” means that you must include the *vlan-id* statement, *tag-protocol-id* statement, *inner-vlan-id* statement, or *inner-tag-protocol-id* statement.

Table 1: Rewrite Operations and Statement Usage for Input VLAN Maps

Input VLAN Map Statements				
Rewrite Operation	<i>vlan-id</i>	<i>tag-protocol-id</i>	<i>inner-vlan-id</i>	<i>inner-tag-protocol-id</i>
push	Optional	Optional	No	No
pop	No	No	No	No
swap	Any	Any	No	No
push-push	Optional	Optional	Optional	optional
swap-push	Optional	Optional	Any	Any
swap-swap	Optional	Optional	Any	Any
pop-swap	No	No	Any	Any
pop-pop	No	No	No	No

Table 2 indicates valid statement combinations for rewrite operations for the output VLAN map. “No” means the statement must not be included in the output VLAN map for the rewrite operation. “Optional” means the statement may be optionally specified for the rewrite operation in the output VLAN map.

Table 2: Rewrite Operations and Statement Usage for Output VLAN Maps

Output VLAN Map Statements				
Rewrite Operation	vlan-id	tag-protocol-id	inner-vlan-id	inner-tag-protocol-id
push	No	Optional	No	No
pop	No	No	No	No
swap	No	Optional	No	No
push-push	No	Optional	No	Optional
swap-push	No	Optional	No	Optional
swap-swap	No	Optional	No	Optional
pop-swap	No	No	No	Optional
pop-pop	No	No	No	No

The following examples use Table 1 and Table 2 and show how the **pop-swap** operation can be configured in an input VLAN map and an output VLAN map:

Input VLAN Map with inner-vlan-id Statement, Output VLAN Map with Optional inner-tag-protocol-id Statement	<pre>[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i>] [Unresolved xref] { pop-swap; inner-vlan-id <i>number</i>; } [Unresolved xref] { pop-swap; inner-tag-protocol-id <i>tpid</i>; }</pre>
Input VLAN Map with inner-tag-protocol-id Statement, Output VLAN map with Optional inner-tag-protocol-id Statement	<pre>[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i>] [Unresolved xref] { pop-swap; inner-tag-protocol-id <i>tpid</i>; } [Unresolved xref] { pop-swap; inner-tag-protocol-id <i>tpid</i>; }</pre>
Input VLAN Map with inner-tag-protocol-id and inner-vlan-id Statements	<pre>[edit interfaces <i>interface-name</i> unit <i>logical-unit-number</i>] [Unresolved xref] { pop-swap; inner-vlan-id <i>number</i>; inner-tag-protocol-id <i>tpid</i>; }</pre>

