How to check IRPP results, by using "diag pp last" command - in DNX devices

Doc ID: HT2310 (permalink (https://support.broadcom.com/KMS/Main.aspx?id=HT2310))

Version: 1.0

Published date: 05/20/2016

Products: 88670 (Jericho) (index?page=content&channel=HOW_TO&cat=88670_JERICHO) , 88660 (Arad+) (index?page=content&channel=HOW_TO&cat=88660_ARAD)

Domains: L3 (index?page=content&channel=HOW_TO&cat=L3) , L2 (index?page=content&channel=HOW_TO&cat=L2)

Summary

Starting from SDK 6.4.10, a new PP diagnostic command ("diag pp last") was introduced.

This command gives a brief description of what happened to a packet in Ingress Receive Packet Processor (IRPP).

Description

The full information is split into 9 sections:

a.   Port termination information

b.   Parser information

c.   VLAN translation information

d.   Tunnel termination information

e.   Forward lookup information

f.   PMF information

g.   FEC resolution information

h.   TM resolution

i.   Summary

Each of those sections is separated by a line of dashes.

Command usage:

diag pp last [core=<0|1>] [Detailed]

Port termination information section

This section includes the information of the TM port, PP port and system port for the last received packet, where system port can be a LAG, or a sim

An example output of this section is shown as follows:

```
----------------------------------------------------------------
|                      Port Termination                        |
|--------------------------------------------------------------|
|     TM Port     I      PP Port      I      System Port       |
|--------------------------------------------------------------|
|       13        I        13         I        13 (0x00D)       |
----------------------------------------------------------------
```

Parser information section

The parser information section shows the parser generated information, including packet format, initial VID, initial TC, initial DP, as well as the trap

An example output of this section is shown as follows:

```
----------------------------------------------------------------
|                          Parser                              |
|--------------------------------------------------------------|
| Packet Format  I  Init VID  I   TC   I  DP  I Mirror Profile |
|--------------------------------------------------------------|
|    IPv4oETH    I     1      I   0    I  1 I        0         |
----------------------------------------------------------------
```

If "Detailed" option is specified, trap and snoop information is also displayed:

```
|-----------------------------------------------------------------------------|
|                     Trap Code |                            Snoop Code        |
|-----------------------------------------------------------------------------|
|                           247 |                                   247        |
|             PORT_DEFAULT_TRAP |                     PORT_DEFAULT_TRAP         |
|       bcmRxTrapRedirectToCpuPacket |            bcmRxTrapRedirectToCpuPacket   |
|-----------------------------------------------------------------------------|
```

This gives the trap code and snoop code result at the link layer stage.

VTT lookups information section

This section includes the information of the keys and payloads of those lookups in VTT stage. This section is only show when "Detailed" option is s

An example output of this section is shown as follows:

```
|-----------------------------------------------------------------------------|
|                              VTT lookups                                    |
|-----------------------------------------------------------------------------|
|            |                   key                       |       payload    |
|-----------------------------------------------------------------------------|
|   SEMA 0   |              0x00000 00000c00                |         -        |
|   SEMB 0   |              0x01000 c0000001                |         -        |
|   TCAM 0   |0x00000000 00000000 00000c05 50102c00 00001001|         -        |
|   SEMA 1   |              0x00000 00000c00                |         -        |
|   SEMB 1   |              0x01000 c0000001                |         -        |
|   TCAM 1   |0x00000000 00000000 00000c05 50102c00 00001001|         -        |
|-----------------------------------------------------------------------------|
```

VLAN translation information section

This section includes the information of InLIF lookup result, including local LIF ID, system LIF ID (for Jericho), and VSI.

An example output of this section is shown as follows:

```
|-----------------------------------------------------------------------------|
|                            VLAN Translation                                 |
|-----------------------------------------------------------------------------|
|      Local LIF   |          System LIF    |              VSI                 |
|-----------------------------------------------------------------------------|
|      1 (0x00001) |          0 (0x00000)   |               1                  |
|-----------------------------------------------------------------------------|
```

Ingress VLAN editing information will be shown when "Detailed" option is specified, and when necessary (e.g., when InLIF has a meaningful IVE a

```
|-----------------------------------------------------------------------------|
|                                  IVE                                        |
|-----------------------------------------------------------------------------|
|     CMD ID     |   VID 0   |   VID 1    |TAGs to Remove|TPID Profile|
|-----------------------------------------------------------------------------|
|       5        |    20     |    20      |      1       |     0      |
|-----------------------------------------------------------------------------|
|                |  TPID index  |           VID src  | PCP-DEI src  |
|-----------------------------------------------------------------------------|
|    Outer       |     0        |   vid_edit_outer  |   outer_tag   |
|-----------------------------------------------------------------------------|
```

If "Detailed" option is specified, trap and snoop information is also displayed.

Tunnel termination information section

This section includes the information of the tunnel termination lookup result. If a header is terminated, the terminated header is described here. This profile/trap and snoop code after updated by VTT.

The following information is shown when there is a valid terminated header, or the destination is not drop after updated by VTT (e.g., P2P service):

```
|-----------------------------------------------------------------------------|
|                            Tunnel Termination                               |
|-----------------------------------------------------------------------------|
|  Terminated Header  |          destination   | TC | DP | Mirror Profile|
|-----------------------------------------------------------------------------|
|           none      |   Port         14      | 0 |  1 |       0       |
|-----------------------------------------------------------------------------|
```

If "Detailed" option is specified, trap and snoop information is also displayed.

Forward lookup information section

This section describes the key and payload of the forward lookup key. Note that only the lookup done in LEM or KBP is described.

```
|-----------------------------------------------------------------------------|
|                              Forward Lookup                                 |
|-----------------------------------------------------------------------------|
|    Header Offset    |     Type  | DB | TC | DP |   Mirror Profile |
|-----------------------------------------------------------------------------|
|         1           |     mact  | LEM | 0 | 1 |        0         |
|-----------------------------------------------------------------------------|
|        key          |            { DA, FID }                      |
|                     |-------------------------------------------  |
|                     |       { 00:00:00:00:00:02,    0 }           |
|-----------------------------------------------------------------------------|
|       result 0      |            Not Match                        |
|-----------------------------------------------------------------------------|
```

PMF information section

This section describes PMF action taken by the packet (PMF lookup keys are not described).

```
|-----------------------------------------------------------------------------|
|                               PMF actions                                   |
|-----------------------------------------------------------------------------|
|       DB   6        |                        dest  | 524287 (0x7FFFF)       |
|-----------------------------------------------------------------------------|
```

FEC resolution section

This section shows the destination information after ing resolved:

```
|------------------------------------------------------------|
|                        FEC Resolution                      |
|------------------------------------------------------------|
|      result      |                Drop                     |
|------------------------------------------------------------|
```

TM resolution section

This section describes the final TM decision send to ITM.

```
|------------------------------------------------------------|
|                        TM Resolution                       |
|------------------------------------------------------------|
|      result      |                Drop                     |
|------------------------------------------------------------|
```

More information can be found if "Detailed" is specified:

```
|------------------------------------------------------------|
|                        TM Resolution                       |
|------------------------------------------------------------|
|      result      |                Drop                     |
|------------------------------------------------------------|
| TC | DP |  LB key | counter 0 | counter 1 | meter 0| meter 1|Meter Cmd|
| 0  | 1  |   257   |    -      |    -      |   -    |   -    |    0     |
|------------------------------------------------------------|
|  Mirror Profile  |                Snoop code                |
|------------------------------------------------------------|
|        0         |                247                       |
|                  |           PORT_DEFAULT_TRAP              |
|                  |        bcmRxTrapRedirectToCpuPacket      |
|------------------------------------------------------------|
```

Summary section

This section summarizes those forward actions, such that:

If a packet is forwarded to a multicast group, what are the copies replicated – if it is ingress replication;

If a packet is forwarded to a LAG, which member is selected;

If a packet is forwarded to a UC port, what is the queue number:

```
The packet is forwarded to port 14, queue 136.
```

No luck? Click here to open a case (https://support.broadcom.com/IMS/Main.aspx?
Page=SubmitCase&params=nDeCaqq9kcZTQ2O8wRag3IWp9eE3yXx%2Frvy3aerYJA54N93XZbf%2BA8x3%2BhqlAdBKhH82MFVYdIPC84COXhTL0iSz7TCg09oPCriB9%2BQez4p7SwUYJWwE1BpsqvUMD6vhHh6vdU9tBIjiBkxxhfvNitTBm9E%2B%2FPjObCA0ye2aWp1L79gACPXzipRZ2DC4WiN0vndS6G2O1wA