Ports

This chapter describes how to identify and resolve problems with ports.

Information About Interface Characteristics

Before a switch can relay frames from one data link to another, you must define the characteristics of the interfaces through which the frames are received and sent. The configured interfaces can be Ethernet (physical) interfaces, virtual Ethernet interfaces, and the management interface (mgmt0).

Each interface has the following:

- Administrative configuration

  The administrative configuration does not change unless you modify it. This configuration has attributes that you can configure in administrative mode.

- Operational state

  The operational state of a specified attribute, such as the interface speed. This state cannot be changed and is read-only. Some values might not be valid when the interface is down (such as the operational speed).

For a complete description of port modes, administrative states, and operational states, see the *Cisco Nexus 1000V for KVM Interface Configuration Guide, Release 5.x*.

Information About Interface Counters

Port counters are used to identify synchronization problems. Counters can show a significant disparity between received and transmitted frames. To display interface counters, enter this command:

show interface ethernet *mod/port* **counters**

See Example 5-10 on page 5-9.

Values stored in counters can be meaningless for a port that has been active for an extended period. Clearing the counters provides a better idea of the actual link behavior at the present time. Create a baseline first by clearing the counters by entering this command:

clear counters interface ethernet *mod/port*

Information About Link Flapping

A port that continually goes up and down is called flapping or a link-flapping port. When a port is flapping, it cycles through the following states, in this order, and then starts over again:

1. Initializing—The link is initializing.
2. Offline—The port is offline.
3. Link failure or not connected—The physical layer is not operational and there is no active device connection.

To troubleshoot link flapping, see Information About Link Flapping, page 5-2.

Port Diagnostic Checklist

Use the following checklist to diagnose the port interface activity.

For more information about port states, see the *Cisco Nexus 1000V for KVM Interface Configuration Guide, Release 5.x*.

Checklist	Example	√
Verify that the module is active by entering the **show module command.**	See Example 5-1 on page 5-6.	
Verify that the ports have been created and the state of the interface by entering the **show interface brief** command.	See Example 5-7 on page 5-8.	

Problems with Ports

This section includes possible causes and solutions for the following symptoms:

- Cannot Enable an Interface, page 5-3
- Port Link Failure or Port Not Connected, page 5-3
- Link Flapping, page 5-3
- Port is ErrDisabled, page 5-4
- Port Troubleshooting Commands, page 5-5

Cannot Enable an Interface

Possible Cause	Solution
A Layer 2 port is not associated with an access VLAN or the VLAN is suspended.	1. Verify that the interface is configured in a VLAN by entering the **show interface brief command.** 2. If not already associated, associate the interface with an access VLAN. 3. Determine the VLAN status by entering the **show vlan brief command.** 4. If the VLAN is not already active, configure the VLAN as active by entering these commands: – **config terminal** – **vlan** *vlan-id* – **state active**

Port Link Failure or Port Not Connected

Possible Cause	Solution
The port connection is bad.	1. Verify the port state by entering the **show system internal ethpm info** command**.** 2. Disable and then enable the port by entering these commands: – **shut** – **no shut** 3. Enter **vemlog show all** on the VEM and collect the output.
The link is stuck in the initialization state or the link is in a point-to-point state.	1. Check for the link failure system message “Link Failure, Not Connected” by entering the **show logging** command. 2. Disable and then enable the port by entering these commands: – **shut** – **no shut** 3. Enter **vemlog show all** on the VEM and collect the output.

Link Flapping

When troubleshooting unexpected link flapping, it is important to have the following information:

- Who initiated the link flap.
- The actual reason for the link being down.

Possible Cause	Solution
The bit rate exceeds the threshold and puts the port into an error-disabled state.	Disable and then enable the port by entering these commands: • **shut** • **no shut** The port should return to the normal state.
A hardware failure or intermittent hardware error causes a packet drop in the switch. A software error causes a packet drop. A control frame is erroneously sent to the device.	An external device might choose to initialize the link again when encountering the error. If so, the exact method of link initialization varies by device. 1. Determine the reason for the link flap as indicated by the MAC driver. 2. Use the debug facilities on the end device to troubleshoot the problem.

Port is ErrDisabled

Possible Cause	Solution
The cable is defective or damaged.	1. Verify the physical cabling. 2. Replace or repair defective cables. 3. Reenable the port by entering these commands: • **shut** • **no shut**
You attempted to add a port to a port channel that was not configured identically and the port is then errdisabled.	1. Display the switch log file and identify the exact configuration error in the list of port state changes by entering the **show logging logfile** command. 2. Correct the error in the configuration and add the port to the port channel. 3. Reenable the port by entering these commands: • **shut** • **no shut**
A VSM application error has occurred.	1. Identify the component that had the error while bringing up the port by entering this command: **show logging log file | grep** *interface_number* See Example 5-6 on page 5-8. 2. Identify the error transition by entering this command: **show system internal ethpm event-history interface** *interface_number* 3. Open a support case and submit the output of the above commands. For more information, see Before Contacting Technical Support, page 16-1.

Port Troubleshooting Commands

You can use the commands in this section to troubleshoot problems related to ports.

Command	Purpose
show module *module-number*	Displays the state of a module. See Example 5-1 on page 5-6.
show svs domain	Displays the domain configuration. See Example 5-2 on page 5-7.
show cdp neighbors	Displays the neighbors connected to an interface. See Example 5-3 on page 5-7.
show system internal ethpm event-history interface interface	Displays information about the internal state transitions of the port. See Example 5-4 on page 5-7.
show logging logfile	Displays logged system messages. See Example 5-5 on page 5-7.
show logging logfile | grep *interface_number*	Displays logged system messages for a specified interface. See Example 5-6 on page 5-8.
show interface brief	Displays a table of interface states. See Example 5-7 on page 5-8.
show interface ethernet *mod/port*	Displays the status of a named interface. See Example 5-8 on page 5-9.
show running-config interface ethernet *mod/port* **expand-port-profile**	Displays the configuration for a named Ethernet interface, including the following: • Administrative state • Speed • Trunk VLAN status • Number of frames sent and received • Transmission errors, including discards, errors, CRCs, and invalid fames. See Example 5-9 on page 5-9.
show interface ethernet *mod/port* **counters**	Displays port counters for identifying synchronization problems. For information about counters, see Information About Interface Counters, page 5-1. See Example 5-10 on page 5-9.
show interface vethernet *number*	Displays the vEthernet interface configuration. See Example 5-11 on page 5-9.
show interface *mod/port* **status**	Displays the status of the named interface.
show interface capabilities	Displays a tabular view of all configured port profiles. See Example 5-12 on page 5-10.

Command	Purpose
show interface virtual attach binding	Displays the virtual port mapping for all vEthernet interfaces. See Example 5-13 on page 5-10.
show system internal ethpm errors	Displays the ethpm error logs. See Example 5-14 on page 5-10.
show system internal ethpm event-history errors	Displays the ethpm event logs. See Example 5-15 on page 5-11.
show system internal ethpm info	Displays the internal data structure information. See Example 5-16 on page 5-11.
show system internal ethpm mem-stats	Displays the ethpm memory allocation statistics.See Example 5-17 on page 5-11.
show system internal ethpm msgs	Displays the ethpm message logs. See Example 5-18 on page 5-13.
show system internal vim errors	Displays VIM error logs. See Example 5-19 on page 5-13.
show system internal vim event-history	Displays various VIM event logs. See Example 5-20 on page 5-13.
show system internal vim info	Displays internal data structure information. See Example 5-21 on page 5-14.
show system internal vim mem-stats	Displays memory allocation statistics of ethpm. See Example 5-22 on page 5-15.
show system internal vim msgs	Displays various message logs of ethpm. See Example 5-23 on page 5-16.
show system internal pktmgr interface brief	Displays a summary of the pktmgr interface status and configuration. See Example 5-24 on page 5-16.
show system internal pktmgr client detail	Displays detailed filter information. See Example 5-25 on page 5-17.

For detailed information about the **show** command output, see the *Cisco Nexus 1000V for KVM Command Reference*.

Example 5-1 show module command

```
vsm-p# show module

Mod  Ports  Module-Type                        Model               Status
---  -----  --------------------------------  ------------------  ------------
1    0      Virtual Supervisor Module         Nexus1000V          active *
4    1022   Virtual Ethernet Module           NA                  ok
5    1022   Virtual Ethernet Module           NA                  ok
6    1022   Virtual Ethernet Module           NA                  ok

Mod  Sw                  Hw
```

```
---  ------------------  ------------------------------------------------
1    5.2(1)SK3(2.0.190)  0.0
4    5.2(1)SK3(2.1)      Linux 3.13.0-34-generic
5    5.2(1)SK3(2.1)      Linux 3.13.0-34-generic
6    5.2(1)SK3(2.1)      Linux 3.13.0-34-generic

Mod  Server-IP        Server-UUID                           Server-Name
---  ---------------  ------------------------------------  --------------------
1    172.27.0.36      NA                                    NA
4    172.27.0.215     6AC6E608-C51D-E211-0010-20304050008D  compute-1
5    172.27.0.218     6AC6E608-C51D-E211-0010-20304050001E  network-2
6    172.27.0.216     6AC6E608-C51D-E211-0010-2030405000AD  compute-2

* this terminal session
```

Example 5-2 show svs domain command

```
switch# show svs domain
SVS domain config:
  Domain id:    942
  Control vlan: 1
  Packet vlan:  1
  Control mode: L3
  L3 control interface: mgmt0
  Status: Config push to Management Server successful.
switch#
```

Example 5-3 show cdp neighbors command

```
switch# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute

Device-ID             Local Intrfce Hldtme Capability  Platform      Port ID
vsm-p(2094532764140613037)
                       mgmt0         141    R B T S   Nexus1000V    control0
```

Example 5-4 show system internal ethpm event-history interface command

```
switch# show system internal ethpm event-history interface e1/7
>>>>FSM: <e1/7> has 86 logged transitions<<<<<
1) FSM:<e1/7> Transition at 647054 usecs after Tue Jan  1 22:44..
    Previous state: [PI_FSM_ST_IF_NOT_INIT]
    Triggered event: [PI_FSM_EV_MODULE_INIT_DONE]
    Next state: [PI_FSM_ST_IF_INIT_EVAL]
2) FSM:<e1/7> Transition at 647114 usecs after Tue Jan  1 22:43..
    Previous state: [PI_FSM_ST_IF_INIT_EVAL]
    Triggered event: [PI_FSM_EV_IE_ERR_DISABLED_CAP_MISMATCH]
    Next state: [PI_FSM_ST_IF_DOWN_STATE]
```

Example 5-5 show logging logfile command

```
switch# show logging logfile
 . . .
2014 Sep  4 16:49:08 vsm-p cdm[2329]: %CDM-5-CDM_APP_REGISTER: CDM main SAP(423)
 registered
2014 Sep  4 16:49:08 vsm-p %USER-2-SYSTEM_MSG: CLIS: loading cmd files begin  -
clis
2014 Sep  4 16:49:09 vsm-p vdc_mgr[2360]: %VDC_MGR-5-VDC_STATE_CHANGE: vdc 1 sta
```

```
te changed to create pending
2014 Sep  4 16:49:09 vsm-p module[2370]: %MODULE-5-ACTIVE_SUP_OK: Supervisor 1 i
s active (serial: T5400449D90)
2014 Sep  4 16:49:09 vsm-p cdm[2329]: %CDM-5-CDM_APP_REGISTER: Fwm SAP(602) regi
stered
2014 Sep  4 16:49:09 vsm-p platform[2290]: %PLATFORM-5-MOD_STATUS: Module 1 curr
ent-status is MOD_STATUS_ONLINE/OK
2014 Sep  4 16:49:10 vsm-p cdm[2329]: %CDM-5-CDM_APP_REGISTER: Aclmgr SAP(351) r
egistered
switch#
```

Example 5-6 show logging logfile | grep interface_number command

```
switch# show logging logfile | grep Vethernet3626
2011 Mar 25 10:56:03 n1k-bl %VIM-5-IF_ATTACHED: Interface Vethernet3626
is attached to Network Adapter 8 of gentoo-pxe-520 on port 193 of module
13 with dvport id 6899
2011 Mar 25 11:10:06 n1k-bl %ETHPORT-2-IF_SEQ_ERROR: Error ("Client data
inconsistency") while communicating with component MTS_SAP_ACLMGR for
opcode MTS_OPC_ETHPM_PORT_PRE_CFG (RID_PORT: Vethernet3626)
2011 Mar 25 11:10:06 n1k-bl %ETHPORT-2-IF_DOWN_ERROR_DISABLED: Interface
Vethernet3626 is down (Error disabled. Reason:Client data inconsistency)
```

Example 5-7 show interface brief command

```
switch# show interface brief
--------------------------------------------------------------------------------
Port     VRF          Status IP Address                              Speed    MTU
--------------------------------------------------------------------------------
mgmt0    --           up     172.27.0.36                             1000     1500

--------------------------------------------------------------------------------
Ethernet     VLAN    Type Mode    Status  Reason                     Speed    Port
Interface                                                                     Ch #
--------------------------------------------------------------------------------
Eth4/1       1       eth  trunk   up      none                       unknown  3
Eth4/2       1       eth  trunk   up      none                       unknown  3
Eth5/1       1       eth  trunk   up      none                       unknown  1
Eth5/2       1       eth  trunk   up      none                       unknown  1
Eth6/1       1       eth  trunk   up      none                       unknown  4
Eth6/2       1       eth  trunk   up      none                       unknown  4
2014 Sep 12 07:18:29 vsm-p %USER-2-SYSTEM_MSG: unknown enum:20000, tid(hex):22a01a0,
comp:41, cid(hex):b0 - vsh

--------------------------------------------------------------------------------
Port-channel VLAN    Type Mode    Status  Reason                   Speed     Proto
Interface
--------------------------------------------------------------------------------
Po1          1       eth  trunk   up      none                     a-20G(D) none
Po3          1       eth  trunk   up      none                     a-20G(D) none
Po4          1       eth  trunk   up      none                     a-20G(D) none

--------------------------------------------------------------------------------
Vethernet    VLAN/    Type Mode    Status  Reason                     MTU  Module
             Segment
--------------------------------------------------------------------------------
Veth6        40       virt access  up      none                       1500 4
Veth7        40       virt access  up      none                       1500 6
Veth9        40       virt access  up      none                       1500 5

--------------------------------------------------------------------------------
Port     VRF          Status IP Address                              Speed    MTU
```

```
--------------------------------------------------------------------------------
control0 --           up     --                                    1000     1500

NOTE : * Denotes ports on modules which are currently offline on VSM
```

Example 5-8 show interface ethernet command

```
switch# show interface e1/14
e1/7 is down (errDisabled)
```

Example 5-9 show running-config interface ethernet mod/port expand-port-profile command

```
switch# show running-config interface ethernet 3/2 expand-port-profile

!Command: show running-config interface Ethernet3/2 expand-port-profile
!Time: Thu Feb 14 17:33:21 2013

version 5.2(1)SK1(1.1)

interface Ethernet3/2
  switchport mode private-vlan trunk promiscuous
  switchport private-vlan trunk allowed vlan 214,224,234,244,254,260,284
  switchport private-vlan trunk allowed vlan add 294,298
  switchport private-vlan mapping trunk 264 10,20,30,40,50
  channel-group auto mode on mac-pinning
  no shutdown

switch#
```

Example 5-10 show interface ethernet counters command

```
switch# show interface eth3/3 counters

--------------------------------------------------------------------------------
Port                                  InOctets                      InUcastPkts
--------------------------------------------------------------------------------
Eth3/3                               167944438                          154350

--------------------------------------------------------------------------------
Port                               InMcastPkts                      InBcastPkts
--------------------------------------------------------------------------------
Eth3/3                                  68452                          298184

--------------------------------------------------------------------------------
Port                                 OutOctets                     OutUcastPkts
--------------------------------------------------------------------------------
Eth3/3                                1789120                             8738

--------------------------------------------------------------------------------
Port                              OutMcastPkts                     OutBcastPkts
--------------------------------------------------------------------------------
Eth3/3                                   1461                             3172
```

Example 5-11 show interface vethernet command

```
switch# show interface eth4/1
Ethernet4/1 is up
  Hardware: Ethernet, address: 0025.b520.20dd (bia 0025.b520.20dd)
  Port-Profile is sys-uplink-vpc
  MTU 1550 bytes
  Encapsulation ARPA
```

```
  Port mode is trunk
  full-duplex, 20 Gb/s
  5 minute input rate 8560 bits/second, 15 packets/second
  5 minute output rate 32 bits/second, 0 packets/second
  Rx
    27410453 Input Packets 0 Unicast Packets
    2346094 Multicast Packets 25064359 Broadcast Packets
    0 Jumbo Packets
    3129145055 Bytes
```

Example 5-12 show interface capabilities command

```
vsm-p# show interface capabilities
Ethernet4/1
  Model:                 --
  Type (Non SFP):        --
  Speed:                 10,100,1000,10000,auto
  Duplex:                half/full/auto
  Trunk encap. type:     802.1Q
  Channel:               yes
  Broadcast suppression: no
  Flowcontrol:           rx-(none),tx-(none)
  Rate mode:             none
  QOS scheduling:        rx-(none),tx-(none)
  CoS rewrite:           yes
  ToS rewrite:           yes
  SPAN:                  yes
```

Example 5-13 show interface virtual attach binding command

```
switch# show interface virtual attach binding

--------------------------------------------------------------------------------
Port        Bind-Type Hypervisor-Port
--------------------------------------------------------------------------------
Veth6       static    3b657f15-258c-4287-ad29-aa2362f1bba1
Veth7       static    b4d06158-f142-4073-82e9-150fa3918431
Veth9       static    bcfbf059-6452-4433-8a1e-46a2afc9a13c
switch#
```

Example 5-14 show system internal ethpm errors command

```
switch# show system internal ethpm errors
1) Event:E_DEBUG, length:90, at 774936 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

2) Event:E_DEBUG, length:90, at 771697 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

3) Event:E_DEBUG, length:90, at 770939 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

4) Event:E_DEBUG, length:90, at 770165 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

5) Event:E_DEBUG, length:90, at 768445 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080
```

```
6) Event:E_DEBUG, length:90, at 767550 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

7) Event:E_DEBUG, length:90, at 766780 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

8) Event:E_DEBUG, length:90, at 764775 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

9) Event:E_DEBUG, length:90, at 762975 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080

10) Event:E_DEBUG, length:90, at 761602 usecs after Fri Sep 12 07:21:21 2014
    [102] ethpm_cli_if_index_verify(2572): Module not ONLINE for ifindex 0x25008
080-0x25008080
```

Example 5-15 show system internal ethpm event-history errors command

```
switch# show system internal ethpm event-history errors
1) Event:E_DEBUG, length:59, at 900000 usecs after Mon May 27 16:56:25 2013
    [102] ethpm_shared_port_down_notif(616): seqno = 1 const= 0

2) Event:E_DEBUG, length:59, at 900000 usecs after Mon May 27 16:56:25 2013
    [102] ethpm_shared_port_down_notif(616): seqno = 1 const= 0

3) Event:E_DEBUG, length:59, at 830000 usecs after Mon May 27 16:56:25 2013
    [102] ethpm_shared_port_down_notif(616): seqno = 1 const= 0

4) Event:E_DEBUG, length:59, at 830000 usecs after Mon May 27 16:56:25 2013
    [102] ethpm_shared_port_down_notif(616): seqno = 1 const= 0
```

Example 5-16 show system internal ethpm mem-stats command

```
switch# show system internal ethpm mem-stats
ETHPM Log Buffer info:
[Mon May 27 16:57:58 2013] PORT_FSM_ACTION_INIT         fsm->prev_state:22, eve
nt_id: 65, if_index:0x250080c0 (Ethernet3/4), oper_port_state:0x1, layer:0x2
[Mon May 27 16:57:58 2013] PORT_FSM_ACTION_INIT         fsm->prev_state:22, eve
nt_id: 65, if_index:0x25008140 (Ethernet3/6), oper_port_state:0x1, layer:0x2
[Mon May 27 16:57:58 2013] PORT_FSM_ACTION_INIT         fsm->prev_state:22, eve
nt_id: 65, if_index:0x25008180 (Ethernet3/7), oper_port_state:0x1, layer:0x2
[Mon May 27 16:57:58 2013] PORT_FSM_ACTION_INIT         fsm->prev_state:22, eve
nt_id: 65, if_index:0x250081c0 (Ethernet3/8), oper_port_state:0x1, layer:0x2
```

Example 5-17 show system internal ethpm mem-stats command

```
switch# show system internal ethpm mem-stats
Private Mem stats for UUID : Malloc track Library(103) Max types: 5
-------------------------------------------------------------------------------
Curr alloc: 1812 Curr alloc bytes: 119848(117k)

Private Mem stats for UUID : Non mtrack users(0) Max types: 174
-------------------------------------------------------------------------------
Curr alloc: 558 Curr alloc bytes: 64702(63k)

Private Mem stats for UUID : libsdwrap(115) Max types: 22
-------------------------------------------------------------------------------
```

```
Curr alloc: 54 Curr alloc bytes: 1695892(1656k)

Private Mem stats for UUID : Associative_db library(175) Max types: 14
-------------------------------------------------------------------------------
Curr alloc: 278 Curr alloc bytes: 7892(7k)

Private Mem stats for UUID : Associative_db utils library(174) Max types: 4
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : libfsrv(404) Max types: 12
-------------------------------------------------------------------------------
Curr alloc: 161 Curr alloc bytes: 5100(4k)

Private Mem stats for UUID : Event sequence library(158) Max types: 4
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : FSM Utils(53) Max types: 68
-------------------------------------------------------------------------------
Curr alloc: 411 Curr alloc bytes: 92464(90k)

Private Mem stats for UUID : IM LIB(319) Max types: 34
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Bitlogic Library(517) Max types: 5
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing Heap Library(519) Max types: 3
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing KSINK (misc. utils) Li(521) Max types: 17
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing Hash Table Library(520) Max types: 2
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing Library for managing m(522) Max types: 6
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Patricia Trie Library(523) Max types: 3
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Cisco Regex Package(525) Max types: 2
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing Queue Library(526) Max types: 2
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing SYSLOG Library(527) Max types: 13
-------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing IPC Library(528) Max types: 10
-------------------------------------------------------------------------------
```

```
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Slab Library(529) Max types: 2
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing TIMER Library(530) Max types: 4
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : TSP Library(531) Max types: 3
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Routing SYSWRAP Library(534) Max types: 2
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : Test Ethernet Port Manager(306) Max types: 162
--------------------------------------------------------------------------------
Curr alloc: 93 Curr alloc bytes: 169672(165k)

Private Mem stats for UUID : Stats Client Library(1047) Max types: 39
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Curr alloc: 3367 Curr alloc bytes: 2155570 (2105k)
```

Example 5-18 show system internal ethpm msgs command

```
switch# show system internal ethpm msgs
1) Event:E_MTS_RX, length:60, at 431007 usecs after Fri Sep 12 03:45:26 2014
    [NOT] Opc:MTS_OPC_VEM_MGR_MOD_STATE_CHANGE(148531), Id:0X001A6B72, Ret:SUCCE
SS
    Src:0x00000101/744, Dst:0x00000101/0, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:100
    Payload:
    0x0000:  00 00 00 02 00 00 00 02 00 00 00 0c 00 00 00 2c

2) Event:E_MTS_RX, length:60, at 430416 usecs after Fri Sep 12 03:45:25 2014
    [NOT] Opc:MTS_OPC_VEM_MGR_MOD_STATE_CHANGE(148531), Id:0X001A6B50, Ret:SUCCE
SS
    Src:0x00000101/744, Dst:0x00000101/0, Flags:None
```

Example 5-19 show system internal vim errors command

```
switch# show system internal vim errors
1) Event:E_DEBUG, length:84, at 351393 usecs after Thu Sep 11 23:42:23 2014
    [102] vim_mod_fsm_ac_process_sync_att_ack(2875): Attach Eth5/2 port state out of sync

2) Event:E_DEBUG, length:84, at 381294 usecs after Thu Sep 11 23:42:22 2014
    [102] vim_mod_fsm_ac_process_sync_att_ack(2875): Attach Eth4/2 port state out of sync

3) Event:E_DEBUG, length:84, at 180587 usecs after Thu Sep 11 22:57:28 2014
    [102] vim_mod_fsm_ac_process_sync_att_ack(2875): Attach Eth5/2 port state out of sync
```

Example 5-20 show system internal vim event-history all command

```
switch# show system internal vim event-history all
>>>>FSM: <VIM Global FSM> has 353 logged transitions<<<<<

1) Event:E_VIM_ACT length:44, at 569244 usecs after Thu Sep  4 16:49:34 2014
```

```
    Slot:0

2) Event:E_PSS_RST length:44, at 570715 usecs after Thu Sep  4 16:49:34 2014
    Type:config Keys:6

3) FSM:<VIM Global FSM> Transition at 571171 usecs after Thu Sep  4 16:49:34 201
4
    Previous state: [VIM_N1K_FSM_ST_IDLE]
    Triggered event: [EV_STATELESS_START]
    Next state: [FSM_ST_NO_CHANGE]

4) FSM:<VIM Global FSM> Transition at 631676 usecs after Thu Sep  4 16:49:34 201
4
    Previous state: [VIM_N1K_FSM_ST_IDLE]
    Triggered event: [VIM_N1K_FSM_EV_CDM_SYNC_CHECK]
    Next state: [FSM_ST_NO_CHANGE]

5) FSM:<VIM Global FSM> Transition at 631798 usecs after Thu Sep  4 16:49:34 201
4
    Previous state: [VIM_N1K_FSM_ST_IDLE]
    Triggered event: [VIM_N1K_FSM_EV_CDM_REG]
    Next state: [VIM_N1K_FSM_ST_WAIT_CDM_REGISTER]

6) FSM:<VIM Global FSM> Transition at 656561 usecs after Thu Sep  4 16:49:34 201
4
    Previous state: [VIM_N1K_FSM_ST_WAIT_CDM_REGISTER]
    Triggered event: [VIM_N1K_FSM_EV_CDM_REG_DONE]
    Next state: [VIM_N1K_FSM_ST_IDLE]

7) Event:E_VIM_RDY length:44, at 678017 usecs after Thu Sep  4 16:49:34 2014
    Veths:3 Status:SUCCES
```

Example 5-21 show system internal vim info command

```
switch# show system internal vim info
auto_setup: true
auto_delete: true
issu_in_progress: false
auto_config_purge: true
veth_retention_time: 300 secs
fsm_state: VIM_N1K_FSM_ST_IDLE
veth_restore_and_launch: completed (3)
vim_ready: true
module 4:
  ports: ETH 32, LVETH 990
  node_addr: 0x00000402
  fsm_state: VIM_MOD_FSM_ST_INSERTED
  srv_license_state: licensed
  num_atts_in_progress: 0
  flags: mod=0x00000040, rt_info=0x0001
  lveth4/1:
    if_index: 0x1b030000
    attached: Veth6
    flags: 0x00000040
    attach_cookie: 0x00000001
    port_state: 0x01
    port_state_reason: 2
  Eth4/1:
    if_index: 0x2500c000
    pp_alias: sys-uplink-vpc (3)
    ds_id: 6bd22a84-b262-4327-8bd0-696109748c6a (7)
    ds_port_uuid: f310a54b-3051-4e5b-8807-ec1a2f592028 (4)
    conn_dev: eth1
```

```
    mac: 00:25:b5:20:20:dd
    flags: 0x00000304
    attach_cookie: 0x00000002
    port_state: 0x01
    port_state_reason: 2
    port_duplex: 2
    port_speed: 20000
    auto-negotiate: disabled
  Eth4/2:
    if_index: 0x2500c040
    pp_alias: sys-uplink-vpc (3)
    ds_id: 6bd22a84-b262-4327-8bd0-696109748c6a (7)
    ds_port_uuid: 2e2f9e58-6a6d-4aac-9f25-eeab6c5f9709 (4)
    conn_dev: eth0
    mac: 00:25:b5:20:20:ed
    flags: 0x00000304
    attach_cookie: 0x00000003
    port_state: 0x01
    port_state_reason: 2
    port_duplex: 2
    port_speed: 20000
    auto-negotiate: disabled
  Po3:
```

Example 5-22 show system internal vim mem-stats command

```
switch# show system internal vim mem-stats

Private Mem stats for UUID : Malloc track Library(103) Max types: 5
--------------------------------------------------------------------------------
Curr alloc: 1757 Curr alloc bytes: 117614(114k)

Private Mem stats for UUID : Non mtrack users(0) Max types: 167
--------------------------------------------------------------------------------
Curr alloc: 506 Curr alloc bytes: 53489(52k)

Private Mem stats for UUID : libsdwrap(115) Max types: 22
--------------------------------------------------------------------------------
Curr alloc: 36 Curr alloc bytes: 5092076(4972k)

Private Mem stats for UUID : Associative_db library(175) Max types: 14
--------------------------------------------------------------------------------
Curr alloc: 240 Curr alloc bytes: 6752(6k)

Private Mem stats for UUID : Associative_db utils library(174) Max types: 4
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : libfsrv(404) Max types: 12
--------------------------------------------------------------------------------
Curr alloc: 151 Curr alloc bytes: 4604(4k)

Private Mem stats for UUID : Event sequence library(158) Max types: 4
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)

Private Mem stats for UUID : FSM Utils(53) Max types: 68
--------------------------------------------------------------------------------
Curr alloc: 132 Curr alloc bytes: 71808(70k)

Private Mem stats for UUID : IM LIB(319) Max types: 34
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)
```

```
Private Mem stats for UUID : Bitlogic Library(517) Max types: 5
--------------------------------------------------------------------------------
Curr alloc: 0 Curr alloc bytes: 0(0k)
```

Example 5-23 show system internal vim msgs command

```
switch# show system internal vim msgs
1) Event:E_MTS_RX, length:60, at 300185 usecs after Fri Sep 12 07:49:16 2014
    [REQ] Opc:MTS_OPC_SDWRAP_DEBUG_DUMP(1530), Id:0X001B8395, Ret:SUCCESS
    Src:0x00000101/60500, Dst:0x00000101/403, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x001B8395, Sync:UNKNOWN, Payloadsize:216
    Payload:
    0x0000:  01 00 2f 74 6d 70 2f 64 62 67 64 75 6d 70 32 39

2) Event:E_MTS_RX, length:60, at 792564 usecs after Fri Sep 12 07:48:15 2014
    [REQ] Opc:MTS_OPC_SDWRAP_DEBUG_DUMP(1530), Id:0X001B812F, Ret:SUCCESS
    Src:0x00000101/60486, Dst:0x00000101/403, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x001B812F, Sync:UNKNOWN, Payloadsize:208
    Payload:
    0x0000:  01 00 2f 74 6d 70 2f 64 62 67 64 75 6d 70 32 39

3) Event:E_MTS_RX, length:60, at 33426 usecs after Fri Sep 12 07:47:14 2014
    [REQ] Opc:MTS_OPC_VSH_CMD_TLV(7679), Id:0X001B7F8B, Ret:SUCCESS
    Src:0x00000101/60069, Dst:0x00000101/403, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x001B7F8B, Sync:UNKNOWN, Payloadsize:264
    Payload:
    0x0000:  04 03 02 01 08 01 00 00 00 00 00 00 00 00 00 00

4) Event:E_MTS_RX, length:60, at 31581 usecs after Fri Sep 12 07:47:14 2014
    [REQ] Opc:MTS_OPC_VSH_CMD_TLV(7679), Id:0X001B7F89, Ret:SUCCESS
    Src:0x00000101/60069, Dst:0x00000101/403, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x001B7F89, Sync:UNKNOWN, Payloadsize:264
    Payload:
    0x0000:  04 03 02 01 08 01 00 00 00 00 00 00 00 00 00 00

5) Event:E_MTS_RX, length:60, at 28112 usecs after Fri Sep 12 07:47:14 2014
    [REQ] Opc:MTS_OPC_VSH_CMD_TLV(7679), Id:0X001B7F83, Ret:SUCCESS
    Src:0x00000101/60069, Dst:0x00000101/403, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x001B7F83, Sync:UNKNOWN, Payloadsize:244
    Payload:
    0x0000:  04 03 02 01 f4 00 00 00 00 00 00 00 00 00 00 00

6) Event:E_MTS_RX, length:60, at 308316 usecs after Fri Sep 12 07:46:19 2014
    [REQ] Opc:MTS_OPC_SDWRAP_DEBUG_DUMP(1530), Id:0X001B7BE9, Ret:SUCCESS
    Src:0x00000101/60460, Dst:0x00000101/403, Flags:None
    HA_SEQNO:0X00000000, RRtoken:0x001B7BE9, Sync:UNKNOWN, Payloadsize:216
    Payload:
    0x0000:  01 00 2f 74 6d 70 2f 64 62 67 64 75 6d 70 32 39

7) Event:E_MTS_RX, length:60, at 597180 usecs after Fri Sep 12 07:45:03 2014
    [REQ] Opc:MTS_OPC_SDWRAP_DEBUG_DUMP(1530), Id:0X001B7A2F, Ret:SUCCESS
```

Example 5-24 show system internal pktmgr interface brief command

```
switch# show system internal pktmgr interface brief
Interface      Type       Interface Status
mgmt0               protocol-up/link-up/admin-up
control0            protocol-up/link-up/admin-up
sup-eth1            protocol-up/link-up/admin-up
sup-eth2            protocol-up/link-up/admin-up
sup-eth3            protocol-up/link-up/admin-up
```

```
port-channel1        protocol-up/link-up/admin-up
port-channel2        protocol-up/link-up/admin-up
```

Example 5-25 show system internal pktmgr client detail command

```
switch# show system internal pktmgr client detail
Client uuid: 268, 3 filters, pid 2422
  Filter 1: EthType 0x0806,
  Rx: 62537, Drop: 0
  Filter 2: EthType 0xfff0, Exc 8,
  Rx: 0, Drop: 0
  Filter 3: EthType 0x8841, Snap 34881,
  Rx: 0, Drop: 0
  Options: TO 0, Flags 0x18040, AppId 0, Epid 0
  Ctrl SAP: 278, Data SAP 337 (1)
  Total Rx: 125074, Drop: 0, Tx: 2906, Drop: 0
  Recirc Rx: 0, Drop: 0
  Rx pps Inst/Max: 0/60
  Tx pps Inst/Max: 0/1
  COS=0 Rx: 0, Tx: 0    COS=1 Rx: 0, Tx: 0
  COS=2 Rx: 0, Tx: 0    COS=3 Rx: 0, Tx: 0
  COS=4 Rx: 0, Tx: 0    COS=5 Rx: 0, Tx: 0
  COS=6 Rx: 0, Tx: 2906    COS=7 Rx: 62537, Tx: 0
```