



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 Microsoft Hyper-V Interface Configuration Guide, Release 5.2(1)SM1(5.1)*.

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 7-10 on page 7-10](#).

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 the [“Information About Link Flapping” section on page 7-2](#).

Information About Port Security

Port security enables you to secure a port by limiting and identifying the MAC addresses that can access the port. Secure MAC addressees can be manually configured or dynamically learned.

For detailed information about port security, see the *Cisco Nexus 1000V for Microsoft Hyper-V Security Configuration Guide, Release 5.2(1)SM1(5.1)*.

Type of Port	Is Port Security Supported?
vEthernet access	Yes
vEthernet trunk	Yes
vEthernet SPAN destination	No
Standalone Ethernet interfaces	No
Port channel members	No

To troubleshoot problems with port security, see the following topics:

- [VMs Cannot Ping a Secured Port, page 7-5](#)
- [Port Security Violations, page 7-6](#)

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 Microsoft Hyper-V Interface Configuration Guide, Release 5.2(1)SM1(5.1)*.

Checklist	Example	✓
Verify that the module is active by entering the show module command.	See Example 7-1 on page 7-8 .	

Checklist (continued)	Example	✓
On the VMM client that is connected to the Microsoft SCVMM server, verify that required port profiles are assigned to the physical NICs and the virtual NICs.		
Verify that the ports have been created and the state of the interface by entering the show interface brief command.	See Example 7-7 on page 7-10 .	

Problems with Ports

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

- [Cannot Enable an Interface, page 7-3](#)
- [Port Link Failure or Port Not Connected, page 7-4](#)
- [Link Flapping, page 7-4](#)
- [Port is ErrDisabled, page 7-5](#)
- [VMs Cannot Ping a Secured Port, page 7-5](#)
- [Port Security Violations, page 7-6](#)

Cannot Enable an Interface

Possible Cause	Solution
A Layer 2 port is not associated with an access VLAN or the VLAN is suspended.	<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> – config terminal – vlan <i>vlan-id</i> – state active

Port Link Failure or Port Not Connected

Possible Cause	Solution
The port connection is bad.	<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> - shut - no shut 3. Collect the Hyper-V side NIC configuration. In a PowerShell window, enter this command: PS C:\Program Files (x86)\Cisco\Nexus1000V\Support> .\vem-support.ps1
The link is stuck in the initialization state or the link is in a point-to-point state.	<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> - shut - no shut 3. Collect the Hyper-V side NIC configuration. In a PowerShell window, enter this command: PS C:\Program Files (x86)\Cisco\Nexus1000V\Support> .\vem-support.ps1

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: <ul style="list-style-type: none"> • 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.	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.
A software error causes a packet drop.	<ol style="list-style-type: none"> 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.
A control frame is erroneously sent to the device.	
A Windows error or link flapping on the upstream switch has occurred.	Use the troubleshooting guidelines in the documentation for your Windows or upstream switch.

Port is ErrDisabled

Possible Cause	Solution
The cable is defective or damaged.	<ol style="list-style-type: none"> 1. Verify the physical cabling. 2. Replace or repair defective cables. 3. Reenable the port by entering these commands: <ul style="list-style-type: none"> • shut • no shut
You attempted to add a port to a port channel that was not configured identically and the port is then errdisabled.	<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> • shut • no shut
A VSM application error has occurred.	<ol style="list-style-type: none"> 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 7-6 on page 7-9. 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 the “Before Contacting Technical Support” section on page 22-1.

VMs Cannot Ping a Secured Port

Possible Cause	Solution
The vEthernet interface is not up.	<ol style="list-style-type: none"> 1. Verify the state of the vEthernet interface by entering the show interface vethernet number command.
Drop on Source Miss (DSM) is set. New MAC addresses cannot be learned by this port.	<ol style="list-style-type: none"> 1. Verify the port security configuration by entering the module vem number execute vemcmd show portsec stats command. 2. If the DSM is set, clear the DSM bit on the VSM by entering the no port-security stop learning command.

Port Security Violations

Use these troubleshooting guidelines when a vEthernet port is disabled because of a security violation. For detailed information about port security, see the *Cisco Nexus 1000V for Microsoft Hyper-V Security Configuration Guide, Release 5.2(1)SM1(5.1)*.

Possible Cause	Solution
The configured maximum number of secured addresses on the port is exceeded.	<ol style="list-style-type: none"> 1. Display the secure addresses by entering these commands: <ul style="list-style-type: none"> – show port-security address vethernet <i>number</i> – show port-security 2. Identify ports with a security violation as follows: <pre>show logging inc “PORT-SECURITY-2-ETH_PORT_SEC_SECURITY_VIOLAT ION_MAX_MAC_VLAN”</pre> 3. Correct the security violation. 4. Enable the interface by entering these commands: <ul style="list-style-type: none"> – shut – no shut
A MAC address that is already secured on one port is then seen on another secure port.	

Port Troubleshooting Commands

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

Command	Purpose
show module <i>module-number</i>	Displays the state of a module. See Example 7-1 on page 7-8 .
show svcs domain	Displays the domain configuration. See Example 7-2 on page 7-8 .
show cdp neighbors	Displays the neighbors connected to an interface. See Example 7-3 on page 7-9 .
show system internal ethpm event-history interface <i>interface</i>	Displays information about the internal state transitions of the port. See Example 7-4 on page 7-9 .
show logging logfile	Displays logged system messages. See Example 7-5 on page 7-9 .
show logging logfile grep <i>interface_number</i>	Displays logged system messages for a specified interface. See Example 7-6 on page 7-9 .
show interface brief	Displays a table of interface states. See Example 7-7 on page 7-10 .

Command	Purpose
show interface ethernet <i>mod/port</i>	Displays the status of a named interface. See Example 7-8 on page 7-10 .
show running-config interface ethernet <i>mod/port expand-port-profile</i>	Displays the configuration for a named Ethernet interface, including the following: <ul style="list-style-type: none"> • Administrative state • Speed • Trunk VLAN status • Number of frames sent and received • Transmission errors, including discards, errors, CRCs, and invalid frames. See Example 7-9 on page 7-10 .
show interface ethernet counters	Displays port counters for identifying synchronization problems. For information about counters, see the “ Information About Interface Counters ” section on page 7-1. See Example 7-10 on page 7-10 .
show interface vethernet <i>number</i>	Displays the vEthernet interface configuration. See Example 7-11 on page 7-11 .
show interface <i>mod/port status</i>	Displays the status of the named interface.
show interface capabilities	Displays a tabular view of all configured port profiles. See Example 7-12 on page 7-11 .
show interface virtual attach binding	Displays the virtual port mapping for all vEthernet interfaces. See Example 7-13 on page 7-12 .
show system internal ethpm errors	Displays the ethpm error logs. See Example 7-14 on page 7-12 .
show system internal ethpm event-history errors	Displays the ethpm event logs. See Example 7-15 on page 7-13 .
show system internal ethpm info	Displays the internal data structure information. See Example 7-16 on page 7-13 .
show system internal ethpm mem-stats	Displays the ethpm memory allocation statistics. See Example 7-17 on page 7-13 .
show system internal ethpm msgs	Displays the ethpm message logs. See Example 7-18 on page 7-13 .
show system internal vim errors	Displays VIM error logs. See Example 7-19 on page 7-14 .
show system internal vim event-history	Displays various VIM event logs. See Example 7-20 on page 7-14 .
show system internal vim info	Displays internal data structure information. See Example 7-21 on page 7-15 .

Command	Purpose
<code>show system internal vim mem-stats</code>	Displays memory allocation statistics of ethpm. See Example 7-22 on page 7-15 .
<code>show system internal vim msgs</code>	Displays various message logs of ethpm. See Example 7-23 on page 7-15 .
<code>module vem execute vemcmd show portsec status</code>	Displays the port security status of the port. If enabled, the output shows a LTL connected to the VM network adapter. See Example 7-24 on page 7-16 .
<code>show port-security</code>	Displays information about the secured MAC addresses in the system. See Example 7-25 on page 7-16 .
<code>show port-security address vethernet</code>	Displays information about the secured addresses on an interface. See Example 7-26 on page 7-16 .
<code>show system internal port-security msgs</code>	Displays various message logs of eth_port_sec. See Example 7-27 on page 7-17 .
<code>show system internal port-security errors</code>	Displays error logs of eth_port_sec. See Example 7-28 on page 7-17 .
<code>show system internal pktmgr interface brief</code>	Displays a summary of the pktmgr interface status and configuration. See Example 7-29 on page 7-17 .
<code>show system internal pktmgr client detail</code>	Displays detailed filter information. See Example 7-30 on page 7-18 .

For detailed information about the **show** command output, see the *Cisco Nexus 1000V for Microsoft Hyper-V Command Reference, Release 5.2(1)SM1(5.1)*.

Example 7-1 `show module` command

```
n1000v# show module 3
Mod  Ports  Module-Type                Model                Status
---  ---
3    248    Virtual Ethernet Module
-----
Mod  Sw                Hw
---  ---
3    5.2(1)SM1(5.1)    Windows Server 8 - Datacenter (6.2.9200, 6.30)
-----
Mod  MAC-Address(es)      Serial-Num
---  ---
3    02-00-0c-00-03-00 to 02-00-0c-00-03-80  NA
-----
Mod  Server-IP          Server-UUID              Server-Name
---  ---
3    192.168.48.20      496e48fa-ee6c-d952-af5b-001517136344  frodo
```

Example 7-2 `show svcs domain` command

```
n1000v# show svcs 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.
n1000v#

```

Example 7-3 show cdp neighbors command

```

n1000V# 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
Nexus1000V(1)
                   mgmt0          145    B T B T S Nexus1000V    mgmt0
n1000V#

```

Example 7-4 show system internal ethpm event-history interface command

```

n1000v# 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 7-5 show logging logfile command

```

n1000v# show logging logfile
. . .
Jan  4 06:54:04 switch %PORT_CHANNEL-5-CREATED: port-channel 7 created
Jan  4 06:54:24 switch %PORT-5-IF_DOWN_PORT_CHANNEL_MEMBERS_DOWN: Interface port-channel 7
is down (No operational members)
Jan  4 06:54:40 switch %PORT_CHANNEL-5-PORT_ADDED: e1/8 added to port-channel 7
Jan  4 06:54:56 switch %PORT-5-IF_DOWN_ADMIN_DOWN: Interface e1/7 is down (Administratively
down)
Jan  4 06:54:59 switch %PORT_CHANNEL-3-COMPAT_CHECK_FAILURE: speed is not compatible
Jan  4 06:55:56 switch%PORT_CHANNEL-5-PORT_ADDED: e1/7 added to port-channel 7
n1000v#

```

Example 7-6 show logging logfile | grep Vethernet3626 command

```

n1000v# 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 7-7 show interface brief command

```
n1000v# show interface brief
-----
Port VRF Status IP Address Speed MTU
-----
mgmt0 -- up 172.23.232.141 1000 1500
-----
Ethernet      VLAN  Type Mode   Status Reason           Speed  Port
Interface                                           Ch #
-----
Eth3/1        1     eth  pvlan up     none              10G    2
Eth3/2        1     eth  pvlan up     none              10G    2
-----
Port-channel  VLAN  Type Mode   Status Reason           Speed  Protocol
Interface                                          
-----
Po1           1     eth  trunk up     none              a-1000(D) none
Po2           1     eth  pvlan up     none              a-10G(D) none
-----
Vethernet     VLAN  Type Mode   Status Reason           Speed
-----
Veth1         262   virt access up     none              auto
Veth2         262   virt access up     none              auto
-----
Port      VRF           Status IP Address           Speed  MTU
-----
control0 --           up     --                   --     1500
n1000v#
```

Example 7-8 show interface ethernet command

```
n1000v# show interface e1/14
e1/7 is down (errDisabled)
```

Example 7-9 show running-config interface ethernet mod/port expand-port-profile command

```
n1000v# 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)SM1(5.1)

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

n1000v#
```

Example 7-10 show interface ethernet counters command

```
n1000v# 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 7-11 show interface vethernet command

```
n1000v# show interface veth1
Vethernet1 is up
  Port description is LINUX-RHEL-01
  Hardware: Virtual, address: 001d.d8b7.1f81 (bia 001d.d8b7.1f81)
  Owner is VM "LINUX-RHEL-01"
  Active on module 3
  DVS port 4903633b-2994-4cc1-859d-f18030927ac4--ff1bb4d4-9edb-4784-b3cc-2399083355ea5
  Port-Profile is
dyncp_03ac7d00-933d-4fc6-89c6-83bdaadf4248_96d80bc3-aa5b-43b8-a784-ca023f59759a
  Port mode is access
  5 minute input rate 1975576 bits/second, 3723 packets/second
  5 minute output rate 89381728 bits/second, 7378 packets/second
Rx
  23088599 Input Packets 23088568 Unicast Packets
  4 Multicast Packets 27 Broadcast Packets
  1530981234 Bytes
Tx
  45745626 Output Packets 45744734 Unicast Packets
  382 Multicast Packets 511 Broadcast Packets 893 Flood Packets
  69252149146 Bytes
  0 Input Packet Drops 0 Output Packet Drops
n1000v#
```

Example 7-12 show interface capabilities command

```
n1000v# show interface capabilities
mgmt0
  Model: --
  Type: --
  Speed: 10,100,1000,auto
  Duplex: half/full/auto
  Trunk encap. type: 802.1Q
  Channel: no
  Broadcast suppression: none
  Flowcontrol: rx-(none),tx-(none)
  Rate mode: none
  QOS scheduling: rx-(none),tx-(none)
  CoS rewrite: yes
  ToS rewrite: yes
```

```

SPAN:                yes
UDLD:                yes
Link Debounce:       no
Link Debounce Time:  no
MDIX:                yes
TDR capable:         no
FabricPath capable:  no
Port mode:           Unknown

port-channel1
Model:               --
Type (Non SFP):      --
Speed:               10,100,auto
Duplex:              half/full/auto
Trunk encap. type:   802.1Q
Channel:             no
Broadcast suppression: no
Flowcontrol:         rx-(none),tx-(none)
Rate mode:           none
QOS scheduling:      rx-(none),tx-(none)
CoS rewrite:         no
ToS rewrite:         no
SPAN:                no
UDLD:                no
Link Debounce:       no
Link Debounce Time:  no
MDIX:                no
TDR capable:         no
FabricPath capable:  no
Port mode:           Unknown

```

```
n1000v#
```

Example 7-13 show interface virtual attach binding command

```

n1000v# show interface virtual attach binding
-----
Port          Bind-Type Hypervisor-Port
-----
Veth1         static    21e2dfd4-660e-4aa1-9813-bb02db4a5b6a--7c3f9397-c2c0-42bb-
a19d-1f3737e06b8f
Veth2         static    21e2dfd4-660e-4aa1-9813-bb02db4a5b6a--f4444d8b-5e95-41de-
a750-91fe500b221a
Veth3         static    21e2dfd4-660e-4aa1-9813-bb02db4a5b6a--284227ec-e395-4203-
aa10-67d40271c184
Veth4         static    21e2dfd4-660e-4aa1-9813-bb02db4a5b6a--0ee0a71e-5b55-4fdf-
a03f-7860ed6d1011

n1000v#

```

Example 7-14 show system internal ethpm errors command

```

n1000V# show system internal ethpm errors
1) Event:E_DEBUG, length:59, at 620000 usecs after Mon May 27 16:56:27 2013
   [102] ethpm_shared_port_down_notif(616): seqno = 1 const= 0

2) Event:E_DEBUG, length:59, at 620000 usecs after Mon May 27 16:56:27 2013

```

```
[102] ethpm_shared_port_down_notif(616): seqno = 1 const= 0
```

```
3) Event:E_DEBUG, length:59, at 160000 usecs after Mon May 27 16:56:26 2013
   [102] ethpm_shared_port_down_notif(616): seqno = 1 const= 0
```

Example 7-15 *show system internal ethpm event-history errors command*

```
n1000V# 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 7-16 *show system internal ethpm mem-stats command*

```
n1000V# 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 7-17 *show system internal ethpm mem-stats command*

```
n1000V# show system internal ethpm mem-stats
Private Mem stats for UUID : Malloc track Library(103) Max types: 5
-----
-
Curr alloc: 1587 Curr alloc bytes: 108176(105k)

Private Mem stats for UUID : Non mtrack users(0) Max types: 150
-----
-
Curr alloc: 1150 Curr alloc bytes: 94275(92k)
```

Example 7-18 *show system internal ethpm msgs command*

```
n1000V# show system internal ethpm msgs
1) Event:E_MTS_RX, length:60, at 770000 usecs after Mon May 27 16:57:58 2013
```

```
[NOT] Opc:MTS_OPC_IM_L2_BUNDLED_PHY_PORT_STATE_CHANGE(62485), Id:0X0001646D
, Ret:SUCCESS
  Src:0x00000101/175, Dst:0x00000101/0, Flags:None
  HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:1269
  Payload:
  0x0000: 00 00 00 02 00 00 00 02 00 00 00 0c 00 00 00 29

2) Event:E_MTS_RX, length:60, at 770000 usecs after Mon May 27 16:57:58 2013
  [NOT] Opc:MTS_OPC_IM_L2_BUNDLED_PHY_PORT_STATE_CHANGE(62485), Id:0X00016468
  , Ret:SUCCESS
  Src:0x00000101/175, Dst:0x00000101/0, Flags:None
  HA_SEQNO:0X00000000, RRtoken:0x00000000, Sync:UNKNOWN, Payloadsize:1269
  Payload:
  0x0000: 00 00 00 02 00 00 00 02 00 00 00 0c 00 00 00 29
```

Example 7-19 show system internal vim errors command

```
n1000V# show system internal vim errors
1) Event:E_DEBUG, length:82, at 940000 usecs after Mon May 27 16:40:10 2013
  [102] vim_mod_handle_att_ack(447): Received attach ack status 0x418f000c on
  Eth3/3

2) Event:E_DEBUG, length:139, at 990000 usecs after Mon May 27 16:10:36 2013
  [102] vim_vem_handle_veth_attach_pending_info(731): Dropping attach req for
  Veth2<->lveth4/1: removal of active attach on Veth2 in progress

3) Event:E_DEBUG, length:128, at 410000 usecs after Mon May 27 16:10:36 2013
  [102] vim_vem_bq_profile_bind_resp(235): Profile bind error on Veth2: statu
  s=no port-profile found matching request (0x41b00014)

4) Event:E_DEBUG, length:117, at 230000 usecs after Mon May 27 16:10:36 2013
  [102] vim_vem_handle_vem_lic_state_chg_notif(1285): Received License State
  Change Notification for non-existing VEM 4
```

Example 7-20 show system internal vim event-history all command

```
n1000V# show system internal vim event-history all
>>>FSM: <Vethernet1> has 3 logged transitions<<<<<

1) FSM:<Vethernet1> Transition at 410000 usecs after Mon May 27 15:46:33 2013
  Previous state: [VIM_VETH_FSM_ST_NOT_EXISTENT]
  Triggered event: [VIM_VETH_FSM_EV_CREATE]
  Next state: [VIM_VETH_FSM_ST_WAIT_INIT]

2) Event:ESQ_START length:38, at 410000 usecs after Mon May 27 15:46:33 2013
  Instance:-1073741824, Seq Id:0x1, Ret:SUCCESS
  Seq Type:SERIAL

3) Event:ESQ_REQ length:38, at 410000 usecs after Mon May 27 15:46:33 2013
  Instance:-1073741824, Seq Id:0x1, Ret:SUCCESS
  [E_MTS_TX] Dst:MTS_SAP_IFMGR(179), Opc:MTS_OPC_IM_IF_IOD_ASSIGN_RELEASE(624
  66)
```

Example 7-21 show system internal vim info command

```
n1000V# show system internal vim info
is_vmfex_enabled: false
auto_setup: true
auto_delete: true
issu_in_progress: false
auto_config_purge: false
module 3:
  ports: ETH 32, LVETH 256
  node_addr: 0x00000302
  fsm_state: VIM_MOD_FSM_ST_INSERTED
  srv_license_state: licensed
  num_atts_in_progress: 0
  flags: 0x00000040
  lveth3/1:
    if_index: 0x1b020000
    attached: Veth1
    flags: 0x00000048
    attach_cookie: 0x00000002
  Eth3/1:
    if_index: 0x25008000
    pp_alias: DATA-Macpin (11)
    ds_id: none
    ds_port_uuid: (5)
    mac: 00:25:b5:aa:ab:4f
    flags: 0x00000094
    attach_cookie: 0x00000011
    speed_cap: 0x00000010 0x00000004
    pp_guid: 33701631-C4FD-47E0-9C30-5AF1CAC4ACE8
```

Example 7-22 show system internal vim mem-stats command

```
n1000V# show system internal vim mem-stats
Private Mem stats for UUID : Malloc track Library(103) Max types: 5
-----
-
Curr alloc: 1727 Curr alloc bytes: 114526(111k)

Private Mem stats for UUID : Non mtrack users(0) Max types: 164
-----
-
Curr alloc: 474 Curr alloc bytes: 51576(50k)

Private Mem stats for UUID : libsdwrap(115) Max types: 22
-----
-
Curr alloc: 28 Curr alloc bytes: 715264(698k)

Private Mem stats for UUID : Associative_db library(175) Max types: 14
-----
-
Curr alloc: 210 Curr alloc bytes: 5912(5k)
```

Example 7-23 show system internal vim msgs command

```
n1000V# show system internal vim msgs
1) Event:E_MTS_RX, length:60, at 190000 usecs after Wed May 29 14:24:20 2013
```

```
[REQ] Opc:MTS_OPC_SDWRAP_DEBUG_DUMP(1530), Id:0X00106411, Ret:SUCCESS
Src:0x00000101/13924, Dst:0x00000101/403, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00106411, Sync:UNKNOWN, Payloadsize:216
Payload:
0x0000: 01 00 2f 74 6d 70 2f 64 62 67 64 75 6d 70 32 32
```

```
2) Event:E_MTS_RX, length:60, at 770000 usecs after Wed May 29 14:22:13 2013
[REQ] Opc:MTS_OPC_SDWRAP_DEBUG_DUMP(1530), Id:0X00105EC5, Ret:SUCCESS
Src:0x00000101/13909, Dst:0x00000101/403, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00105EC5, Sync:UNKNOWN, Payloadsize:208
Payload:
0x0000: 01 00 2f 74 6d 70 2f 64 62 67 64 75 6d 70 32 32
```

```
3) Event:E_MTS_RX, length:60, at 30000 usecs after Wed May 29 14:20:19 2013
[REQ] Opc:MTS_OPC_VSH_CMD_TLV(7679), Id:0X00104DF2, Ret:SUCCESS
Src:0x00000101/13798, Dst:0x00000101/403, Flags:None
HA_SEQNO:0X00000000, RRtoken:0x00104DF2, Sync:UNKNOWN, Payloadsize:244
Payload:
0x0000: 04 03 02 01 f4 00 00 00 00 00 00 00 00 00 00 00
```

Example 7-24 module vem execute vemcmd show portsec status command

```
n1000V# module vem 3 execute vemcmd show portsec status
```

LTL	if_index	Max	Secure	Aging	Aging	DSM	Sticky	VM
			Addresses	Time	Type	Bit	Enabled	Name
49	1b020000		1	0	Absolute	Clr	Yes	î
50	1b020010		1	0	Absolute	Clr	Yes	î

```
n1000V#
```

Example 7-25 show port security command

```
n1000V# show port-security
```

```
Total Secured Mac Addresses in System (excluding one mac per port) : 0
Max Addresses limit in System (excluding one mac per port) : 8192
```

```
-----
Secure Port  MaxSecureAddr  CurrentAddr  SecurityViolation  Security Action
          (Count)           (Count)           (Count)
-----
Vethernet1          1             0             0                Shutdown
=====
```

Example 7-26 show port security address interface vethernet command

```
n1000v# show port-security address interface vethernet 1
```

```
Secure Mac Address Table
```

```
-----
Vlan      Mac Address                Type           Ports          Configured Age
-----  -----
262      001D.D8B7.1F81            STICKY         Vethernet1     0
-----
```


Example 7-27 show system internal port-security msgs command

```
n1000v# show system internal port-security msgs
1) Event:E_MTS_RX, length:60, at 120000 usecs after Wed May 29 14:39:36 2013
   [REQ] Opc:MTS_OPC_SDWRAP_DEBUG_DUMP(1530), Id:0X00109749, Ret:SUCCESS
   Src:0x00000101/14132, Dst:0x00000101/191, Flags:None
   HA_SEQNO:0X00000000, RRtoken:0x00109749, Sync:UNKNOWN, Payloadsize:216
   Payload:
   0x0000: 01 00 2f 74 6d 70 2f 64 62 67 64 75 6d 70 32 34

2) Event:E_MTS_RX, length:60, at 430000 usecs after Wed May 29 14:38:53 2013
   [REQ] Opc:MTS_OPC_VSH_CMD_TLV(7679), Id:0X0010936C, Ret:SUCCESS
   Src:0x00000101/13798, Dst:0x00000101/191, Flags:None
   HA_SEQNO:0X00000000, RRtoken:0x0010936C, Sync:UNKNOWN, Payloadsize:288
   Payload:
   0x0000: 04 03 02 01 20 01 00 00 00 00 00 00 00 00 00 00

3) Event:E_MTS_RX, length:60, at 120000 usecs after Wed May 29 14:38:03 2013
   [REQ] Opc:MTS_OPC_VSH_CMD_TLV(7679), Id:0X00108FA0, Ret:SUCCESS
   Src:0x00000101/13798, Dst:0x00000101/191, Flags:None
   HA_SEQNO:0X00000000, RRtoken:0x00108FA0, Sync:UNKNOWN, Payloadsize:232
   Payload:
   0x0000: 04 03 02 01 e8 00 00 00 00 00 00 00 00 00 00 00
```

Example 7-28 show system internal port-security errors command

```
n1000v# show system internal port-security errors
1) Event:E_DEBUG, length:62, at 550000 usecs after Wed May 29 14:37:06 2013
   [102] psec_get_interface_info(8666): Port security not enabled

2) Event:E_DEBUG, length:63, at 550000 usecs after Wed May 29 14:37:06 2013
   [102] eth_port_sec_interface_port_status(409):admin_status is 1

3) Event:E_DEBUG, length:62, at 230000 usecs after Wed May 29 14:37:03 2013
   [102] psec_get_interface_info(8666): Port security not enabled

4) Event:E_DEBUG, length:63, at 230000 usecs after Wed May 29 14:37:03 2013
   [102] eth_port_sec_interface_port_status(409):admin_status is 1
```

Example 7-29 show system internal pktmgr interface brief command

```
n1000v# 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 7-30 show system internal pktmgr client detail command

```
n1000v# show system internal pktmgr client detail
Client uuid: 268, 3 filters, pid 2422
  Filter 1: EthType 0x0806,
  Rx: 62537, Drop: 0
  Filter 2: EthType 0xffff0, 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
```