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Ethernet Routing Switch 5000 Series
Software Release 6.2.5

1. Release Summary

Release Date: 06-September-2012
Purpose: Software patch release to address customer and internally found software issues.

2. Important Notes Before Upgrading to This Release

Please note that Release Notes for all prior releases 6.2.X are still applicable to this release.

3. Platforms Supported

Ethernet Routing Switch 5510/5520/5530/5698TFD(-PWR)/5650TD(-PWR)/5632FD.

4. Notes for Upgrade

Please see "Ethernet Routing Switch 5000 Series, Configuration – System, Software Release 6.2" (NN47200-500, available at http://www.avaya.com/support. Click Products, select Ethernet Routing Switch 5000 Series from the A-Z list, then select Documentation > View All Documents) for details on how to upgrade your Switch.

File Names for This Release

File Name	Module or File Type	File Size (bytes)
5xxx_60015_diags.bin	Diagnostic image	2,467,848
5xxx_625026.img	Agent code image	18,476,200
5xxx_625027s.img	Agent code image (SSH)	19,227,428

5. Version of Previous Release

Software Version 6.2.4.

6. Compatibility

This software release is managed with Enterprise Device Manager.

7. Changes in This Release

7.1. New Features in This Release

7.1.1 IP netstat

This application displays information about active IPv4 sockets, resembling the output from Unix netstat application.

The application will display the following IPv4 socket information:

- Protocol type: TCP/UDP
- Number of bytes in Receive/Send buffers
- Local/Foreign Address
- Local/Foreign Port
- Socket state: CLOSED, LISTEN, SYN_SENT, SYN_RCVD, ESTABLISHED, CLOSE_WAIT, FIN_WAIT_1, CLOSING, LAST_ACK, FIN_WAIT_2, TIME_WAIT
- Service: SSH, TELNET, HTTP, HTTPS, SNTP, TFTP, RADIUS

Recv-Q/Send-Q counters will display a value different from 0 mostly during data transfer.
Local and foreign protocol ports are appended to the IP addresses.
Foreign IP and port will be 0.0.0.0.0 for opened sockets.
Only TCP entries will have a value in the State column.
The second part of the table (Proto/Port/Service) displays the active services on the device.
Application command will be available in standalone and stack mode. In stack mode it will be available on base and non-base units and the information displayed will be obtained from BU.
The information regarding IPv4 sockets is gathered from VxWorks TCP/IP stack structures.

New or Changed NNCLI List

IPv4 socket information:

```
#show ip netstat
Proto Recv-Q Send-Q  Local Address          Foreign Address        State
----- ------ ------  --------------------- ---------------------- -------
TCP        0      0  10.100.200.90.23      10.100.200.15.33114    ESTABLISHED
TCP        0      0  0.0.0.0.80            0.0.0.0.0              LISTEN
TCP        0      0  0.0.0.0.23            0.0.0.0.0              LISTEN
UDP        0      0  10.100.200.90.3490    0.0.0.0.0
------------------------------------------------------------------------
Proto Port   Service
----- ------ -------
TCP       23 TELNET
TCP       80 HTTP
UDP     3490 RADIUS

#show ip netstat tcp
Proto Recv-Q Send-Q  Local Address          Foreign Address        State
----- ------ ------  --------------------- ---------------------- -------
TCP        0      0  10.100.200.90.23      10.100.200.15.33114    ESTABLISHED
TCP        0      0  0.0.0.0.80            0.0.0.0.0              LISTEN
TCP        0      0  0.0.0.0.23            0.0.0.0.0              LISTEN
```

```
------------------------------------------------------------------------
Proto Port   Service
----- ------ -------
TCP       23 TELNET
TCP       80 HTTP

#show ip netstat udp
Proto Recv-Q Send-Q  Local Address          Foreign Address        State
----- ------ ------  --------------------- ---------------------- -------
UDP        0      0  10.100.200.90.3490    0.0.0.0.0
------------------------------------------------------------------------
Proto Port   Service
----- ------ -------
UDP     3490 RADIUS
```

Besides socket data we can access advanced statistics for TCP/UDP/ICMP/IP.
The statistics will be available in standalone or from BU when running a stack.
The statistics menu is under VxWorks menu from Engineering Menu:

```
#menu
x  VxWorks
6  TCP/IP statistics
      a-    ipstatShow
      b-    Clear ipstat
      i-    icmpstatShow
      t-    tcpStatShow
      u-    udpStatShow

a-    ipstatShow
               total       1326
              badsum          0
            tooshort          0
            toosmall          0
             badhlen          0
              badlen          0
          infragments         0
          fragdropped         0
          fragtimeout         0
              forward         0
          fastforward         0
          cantforward         0
        redirectsent          0
     unknownprotocol          0
           delivered       1326
            localout        876
           nobuffers          0
         reassembled          0
          fragmented          0
        outfragments          0
            cantfrag          0
          badoptions          0
             noroute          0
             badvers          0
              rawout          0
             toolong          0
           notmember          0
               nogif          0
             badaddr          0
```

```
i-    icmpstatShow
ICMP:
        0 call to icmp_error
        0 error not generated because old message was icmp
        Output histogram:
                echo reply: 3
        0 message with bad code fields
        0 message < minimum length
        0 bad checksum
        0 message with bad length
        Input histogram:
                echo: 3
        3 message responses generated

t-    tcpStatShow
TCP:
        825 packets sent
                810 data packets (153322 bytes)
                0 data packet (0 byte) retransmitted
                10 ack-only packets (0 delayed)
                0 URG only packet
                0 window probe packet
                0 window update packet
                5 control packets
        1285 packets received
                815 acks (for 153332 bytes)
                0 duplicate ack
                0 ack for unsent data
                550 packets (812 bytes) received in-sequence
                0 completely duplicate packet (0 byte)
                0 packet with some dup. data (0 byte duped)
                0 out-of-order packet (0 byte)
                0 packet (0 byte) of data after window
                0 window probe
                0 window update packet
                0 packet received after close
                0 discarded for bad checksum
                0 discarded for bad header offset field
                0 discarded because packet too short
        0 connection request
        5 connection accepts
        5 connections established (including accepts)
        4 connections closed (including 0 drop)
        0 embryonic connection dropped
        815 segments updated rtt (of 790 attempts)
        0 retransmit timeout
                0 connection dropped by rexmit timeout
        0 persist timeout
        0 keepalive timeout
                0 keepalive probe sent
                0 connection dropped by keepalive
        0 pcb cache lookup failed

u-    udpStatShow
UDP:
        93 total packets
        41 input packets
        52 output packets
        0 incomplete header
```

```
0 bad data length field
0 bad checksum
0 broadcasts received with no ports
0 full socket
0 pcb cache lookup failed
0 pcb hash lookup failed
```

7.1.2 New commands are added to backdoor menu for task monitoring purposes.

Previously these commands were available only from Engineering Menu.

```
     s - System Menu
       u - Utilities
            b - Task Backtrace
            c - Display complete task information
            f - inetstatShow
            t - Task Activity
```

b - Task Backtrace

This command displays a list of the nested routine calls that the specified task is in.

```
TaskName or TaskId (HEX):tIPv6
0x00fb54b0                    : 0x0098d5c8 ()
0x0098d6f8                    : 0x01042d5c ()
0x01043004                    : 0x010428d4 ()
```

c - Display complete task information

This command prints the task control block contents, including registers, for a specified task.

If no task name or task id is specified the command will display complete task information for all active tasks.

```
TaskName or TaskId(HEX) [All]:tIPv6

  NAME         ENTRY       TID    PRI   STATUS      PC       SP     ERRNO  DELAY
---------- ------------ -------- --- ---------- -------- -------- ------- -----
tIPv6       98d5c8        66d2fe0  50 PEND        1042a94  6760ef0  380003     0

task stack: base 0x6761000   end 0x675d000   size 16384  high 3632   margin 12752
exc. stack: base 0x6763000   end 0x6762010   start 0x6763010
exc. stack: size 4080        high 320        margin 3760

proc id: 0x2739f58 ((null))
options: 0x9005
VX_SUPERVISOR_MODE  VX_DEALLOC_STACK    VX_DEALLOC_TCB      VX_DEALLOC_EXC_STACK

VxWorks Events
--------------
Events Pended on    : Not Pended
Received Events     : 0x0
Options             : N/A

r0         = 0x0098dcf4   sp         = 0x06760ef0   r2         = 0x00000000
r3         = 0x00000000   r4         = 0x069fbfe0   r5         = 0x00000001
r6         = 0x20000000   r7         = 0x01649b28   r8         = 0x01652418
r9         = 0xffffffff   r10        = 0x066d2fe0   r11        = 0x00000000
r12        = 0x00000000   r13        = 0x00000000   r14        = 0x00000000
r15        = 0x00000000   r16        = 0x00000000   r17        = 0x00000000
r18        = 0x00000000   r19        = 0x00000000   r20        = 0x00000000
r21        = 0x00000000   r22        = 0x00000000   r23        = 0x018a29d0
r24        = 0x06760f28   r25        = 0xffffffff   r26        = 0x00000001
r27        = 0x00000001   r28        = 0x06866060   r29        = 0x018a26a4
r30        = 0x06866020   r31        = 0x00000000   msr        = 0x0000b032
lr         = 0x0098dcf4   ctr        = 0x010470ac   pc         = 0x01042a94
```

```
cr         = 0x40000440    xer        = 0x00000000    pgTblPtr    = 0x02c70000
scSrTblPtr = 0x02cb4014    srTblPtr   = 0x02cb4014
coprocTaskShow:  TaskId 0x66d2fe0 has no coprocessors selected

nullPointerProtection: read write (3)
```

f - inetstatShow

This command displays information about active IPv4 sockets, resembling the output from Unix netstat application.

```
Active Internet connections (including servers)
PCB       Proto Recv-Q Send-Q  Local Address          Foreign Address        (state)
--------  ----- ------ ------  --------------------- --------------------- -------
3078dc0   TCP            0          0   10.100.200.30.22          10.100.200.15.48448
ESTABLISHED
3078880   TCP            0          0   10.100.200.30.23          10.100.200.15.34924
ESTABLISHED
30780a0  TCP        0       0  0.0.0.0.22             0.0.0.0.0             LISTEN
3076e40  TCP        0       0  0.0.0.0.80             0.0.0.0.0             LISTEN
3075940  TCP        0       0  0.0.0.0.23             0.0.0.0.0             LISTEN
3047d60  UDP        0       0  10.100.200.30.3490     0.0.0.0.0
3047fe0  UDP        0       0  0.0.0.0.0              0.0.0.0.0
3047ea0  UDP        0       0  0.0.0.0.0              0.0.0.0.0
30479a0  UDP        0       0  0.0.0.0.161            0.0.0.0.0
```

t - Task Activity

a - Start profiling
r - Report
z - Stop profiling

This menu collects and reports data for the amount of CPU time utilized by each task, the amount of time spent at interrupt level, the amount of time spent in the kernel, and the amount of idle time. Time is displayed in ticks and as a percentage.

```
    NAME         ENTRY       TID      PRI   total % (ticks)   delta % (ticks)
------------ ------------ ----------  ---   ---------------   ---------------
tExcTask     0x1063a98    0x2c6a708     0     0% (        2)    0% (        2)
tJobTask     0x1064960    0x2cc62a0     0     0% (        0)    0% (        0)
tLogTask     0x10650ac    0x2cc66a0     0     0% (        0)    0% (        0)
tNbioLog     0x1065ff8    0x2cccc08     0     0% (        0)    0% (        0)
tZapKey      0xd103c4     0x65f2600     1     0% (        0)    0% (        0)
tPushBtn     0x16ffd4     0x6747ef8     5     0% (        0)    0% (        0)
tErfTask     0xfcec20     0x2cd9020    10     0% (        0)    0% (        0)
bcmLINK.0    0x43395c     0x3190968    40     0% (        4)    0% (        4)
bcmLINK.1    0x43395c     0x3581818    40     0% (       15)    0% (       15)
bcmLINK.2    0x43395c     0x3629ca8    40     0% (       15)    0% (       15)
bcmLINK.3    0x43395c     0x36d2148    40     0% (       14)    0% (       14)
bcmLINK.4    0x43395c     0x377a5f0    40     0% (       14)    0% (       14)
tHMOD        0xef133c     0x491b020    40     0% (        0)    0% (        0)
tXbdService  0x2781e0     0x2cd9ac0    50     0% (        0)    0% (        0)
tNetTask     0xfe15b0     0x2d14db0    50     0% (        5)    0% (        5)
.....
KERNEL                                       14% (     2179)   14% (     2160)
INTERRUPT                                     0% (       22)    0% (       22)
IDLE                                         29% (     4354)   29% (     4330)
TOTAL                                        95% (    14626)   95% (    14527)
```

7.1.3. Enhanced functionality for copper SFP

The enhancement adds the ability to set fixed speeds (5632 only) on the copper SFP, P/N AA1419043 (10H, 10F, 100H, 100F, 1000F as well as auto). It doesn't apply to any other SFPs/XFPs.

7.2 Old Features Removed From This Release

None.

7.3 Problems Resolved in This Release

In an IST setup where 5xxx stack of two units is connected to 5xxx standalone. Whenever the non- base unit is powered off or rebooted, the base units IST ports are going down along with the peer ports resulting in IST going down (**wi00927807**)

With DHCP snooping enabled, the TFTP transfer to the iMAC client is truncated (**wi00952434**)

EDM users were able to disable/enable ports on devices that were not assigned to users (**wi01035327**)

EDM was not properly showing port description for copper ports 91-96 on ERS5698 (**wi01035332**)

An EDM Topology Error message was generated when accessing the topology tab (**wi00958431**)

In a 2-unit stack the SLT is not behaving as expected after power on the BU of any of the stack in IST (**wi00975074**)

5xxx software exception with task tDCHP and DCHP relay related (**wi00978796**)

A data access exception "Task Name tOspfTxHel" was resolved in this release (**wi00975340**)

Missing egress OSPF hello packets at times caused OSPF adjacency to drop (**wi00955758**)

In a 2-unit stack IST configuration, when the BU was rebooted there were intermittent ping loss (**wi00984502**)

In an SMLT cluster made up of 2-unit stacks, inconsistent behavior was observed when a unit in one of the stacks failed **(wi01002374)**

Ping or Telnet to any DNS hostname could cause instability in management VLAN requiring a reboot of the stack (**wi00933202)**

"no qos dos" command was not available from Interface Configuration mode (**wi00981561**)

EAPOL authentication issue when Radius Queue is Full (**wi01014155**)

Stale EAP entries after the EAP clients have been disconnected (**wi01014163**)

6.2.4 code release was generating incorrect IPv4 ICMP redirect (**wi00996235**)

NMAP scanning tool blocked new telnet session to the switch requiring a reboot to recover (**wi00958131**)

An intermittent MAC Learning Issue was addressed in this release (**wi00984022**)

Wake-on-LAN (WOL) did not work for NEAP clients (**wi01034823**)

5600s Intermittently locks and stops forwarding traffic requiring a reboot to recover (**wi00980701**)

Read only user profiles were able to successfully edit port state & VLAN parameters using built in EDM (**wi00989751**)

Fix a silent reset that was reproduced with heavy ARP traffic and the ARP cache getting cleared every 4 minutes **(wi00993098)**

Addressed a console lockup issue that was reproduced under heavy ARP traffic and as the ARP cache was being cleared every 4 minutes **(wi00994932)**

Intermittent bcmTx task Lock up when switch stops forwarding traffic **(wi00980701)**

8. Outstanding Issues

wi01039414 - The enhancement for copper SFP AA1419043 is partially available for other fiber SFPs, causing the links to fail if you change the speed. The port's autonegotiation settings and speed may be set to 100 Mbps as well as 1000Mbps. The 100Mbps setting should not be utilized as it will cause loss of link. This will be corrected in the 6.2.6 code release.

9. Known Limitations

wi01006880 – There will be limited support for the NSNA feature in post-6.1 releases, no future enhancements to NSNA will be added and only service impacting defects will be addressed.

wi00960817 - On the ERS55xx platforms, if the port-mirroring feature is used and the mirror port/(one of the mirror ports) will be in the STP blocking state the connectivity with the switch can be affected. The ERS56xx platforms don't have this hardware limitation.

Workaround: Move the monitor port in a separate ASIC where you don't have active ports. (on that ASIC only monitor port has link up)

The assignment of the ports on the ASICs is:

5510/5520: ASIC 1 has ports 1-12
ASIC 2 has ports 13-24
ASIC 3 has port 25-36 (for models with 48 ports)
ASIC 4 has port 37-48 (for models with 48 ports)
5530: ASIC 1 has ports 1-12
ASIC 2 has ports 13-24
ASIC 3 has port 25

10. Documentation Corrections

None.

For other known issues, please refer to the product release notes and technical documentation available from the Avaya Technical Support web site at: http://www.avaya.com/support .