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Linux display summary of protocol-level statistics for all network interfaces

Posted by Vivek Gite <vivek@nixcraft.com>

Q. How do I find out summary of protocol-level (IP, ICMP, TCPetc) statistics for all network interfaces such as eth0, eth1 under Linux?

A. You can use standard netstat command to print network connections, routing tables, interface statistics, masquerade connections, and multicast memberships etc. The same command to -s option displays nice summery summary of protocol-level statistics for all network interfaces

[1]

```
# netstat -s | head -11
```

Output:

```
Ip:
    65213088 total packets received
    0 forwarded
    0 incoming packets discarded
    65190740 incoming packets delivered
    69694203 requests sent out
    7 outgoing packets dropped
    7 fragments dropped after timeout
    74 reassemblies required
    31 packets reassembled ok
    7 packet reassembles failed
```

You can display a table of all network interfaces including send (TX) and received (RX) packets with following command:

```
# netstat -i
```

Output:

```
Kernel Interface table
Iface       MTU Met    RX-OK RX-ERR RX-DRP RX-OVR    TX-OK TX-ERR TX-DRP TX-OVR Flg
eth0       1500   0  2111089      0      0      0  3157931      0      0      0 BMRU
eth1       1500   0 24473949      0      0      0 27782130      0      0      0 BMRU
eth1:0     1500   0      - no statistics available -                           BMRU
eth1:1     1500   0      - no statistics available -                           BMRU
eth1:2     1500   0      - no statistics available -                           BMRU
eth1:3     1500   0      - no statistics available -                           BMRU
eth1:4     1500   0      - no statistics available -                           BMRU
lo        16436   0 38978328      0      0      0 38978328      0      0      0 LRU
vmnet8     1500   0        0      0      0      0        5      0      0      0 BMRU
```

You can display complete report using:

```
# netstat -s
```

Output:

```
Ip:
    65220448 total packets received
    0 forwarded
    0 incoming packets discarded
    65198100 incoming packets delivered
```

```
        69701981 requests sent out
        7 outgoing packets dropped
        7 fragments dropped after timeout
        74 reassemblies required
        31 packets reassembled ok
        7 packet reassembles failed
Icmp:
        16896 ICMP messages received
        81 input ICMP message failed.
        ICMP input histogram:
            destination unreachable: 6304
            timeout in transit: 513
            redirects: 324
            echo requests: 9728
            echo replies: 2
        28314 ICMP messages sent
        0 ICMP messages failed
        ICMP output histogram:
            destination unreachable: 18586
            echo replies: 9728
Tcp:
        748691 active connections openings
        2147903 passive connection openings
        6902 failed connection attempts
        59598 connection resets received
        7 connections established
        65031695 segments received
        69547445 segments send out
        538462 segments retransmited
        493 bad segments received.
        70494 resets sent
Udp:
        131034 packets received
        18475 packets to unknown port received.
        0 packet receive errors
        135063 packets sent
TcpExt:
        37314 invalid SYN cookies received
        7157 resets received for embryonic SYN_RECV sockets
      20008248 packets directly queued to recvmsg prequeue.
        97028771 packets directly received from backlog
        224583254 packets directly received from prequeue
        23444229 packets header predicted
        27244 packets header predicted and directly queued to user
        TCPPureAcks: 12740601
        TCPHPAcks: 29096274
        TCPRenoRecovery: 85917
        TCPSackRecovery: 0
        TCPSACKReneging: 0
        TCPFACKReorder: 0
        TCPSACKReorder: 0
        TCPRenoReorder: 5140
        TCPTSReorder: 0
        TCPFullUndo: 3
        TCPPartialUndo: 0
        TCPDSACKUndo: 0
        TCPLossUndo: 11
        TCPLoss: 0
        TCPLostRetransmit: 0
        TCPRenoFailures: 25218
        TCPSackFailures: 0
        TCPLossFailures: 25266
        TCPFastRetrans: 134351
        TCPForwardRetrans: 0
        TCPSlowStartRetrans: 172674
        TCPTimeouts: 99808
        TCPRenoRecoveryFail: 32234
        TCPSackRecoveryFail: 0
        TCPSchedulerFailed: 83
        TCPRcvCollapsed: 0
```

```
TCPDSACKOldSent: 0
TCPDSACKOfoSent: 0
TCPDSACKRecv: 0
TCPDSACKOfoRecv: 0
TCPAbortOnSyn: 0
TCPAbortOnData: 32369
TCPAbortOnClose: 12938
TCPAbortOnMemory: 0
TCPAbortOnTimeout: 3357
TCPAbortOnLinger: 0
TCPAbortFailed: 0
TCPMemoryPressures: 0
```

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