

RHCS6: Debug and test multicast traffic between two hosts

Article Number: 205 | Rating: Unrated | Last Updated: Sun, Jun 3, 2018 9:52 AM

RHCS: Debug and test multicast traffic between two hosts

```
# Tested on RHEL 5 & 6

# Sometimes we may suspect of multicast traffic not working as
# expected. In this case we
# may carry out following tests to figure out whether it is working
# or not.

# On a RHEL 5, with <239.111.0.22> as multicast IP

# 'netstat -g' shows the interfaces' multicast group memberships

netstat -g
  IPv6/IPv4 Group Memberships
  Interface          RefCnt Group
  -----
  lo                 1      all-systems.mcast.net
  eth2               2      all-systems.mcast.net
  eth3              1      239.111.0.22
  eth3               2      all-systems.mcast.net
  bond0              2      all-systems.mcast.net
```

```
lo          1          ff02::1
eth2        1          ff02::1:ff5b:352
eth2        1          ff02::1
eth3        1          ff02::1:ff5b:353
eth3        1          ff02::1
bond0       1          ff02::3:1
bond0       1          ff02::1:ffc9:f168
bond0       1          ff02::1
```

'netstat -s' shows a multicast packet counter that should increase when traffic is received/sent

```
netstat -s | grep Mcast
  InMcastPkts: 378347
  OutMcastPkts: 230473
```

```
netstat -s | grep Mcast
  InMcastPkts: 378365
  OutMcastPkts: 230488
```

'tcpdump' shows the network traffic (eth3 being my cluster interface)

```
tcpdump -i eth3 | grep 239.111.0.22
tcpdump: verbose output suppressed, use -v or -vv for full
protocol decode
listening on eth3, link-type EN10MB (Ethernet), capture size 96
bytes
13:59:16.712278 IP myhost-priv.5149 > 239.111.0.22.netsupport:
UDP, length 118
13:59:17.116244 IP myhost-priv.5149 > 239.111.0.22.netsupport:
UDP, length 118
13:59:17.512239 IP myhost-priv.5149 > 239.111.0.22.netsupport:
```

```
UDP, length 118
  13:59:17.908238 IP myhost-priv.5149 > 239.111.0.22.netsupport:
UDP, length 118
  13:59:18.304221 IP myhost-priv.5149 > 239.111.0.22.netsupport:
UDP, length 118
  13:59:18.700217 IP myhost-priv.5149 > 239.111.0.22.netsupport:
UDP, length 118
  13:59:19.096197 IP myhost-priv.5149 > 239.111.0.22.netsupport:
UDP, length 118
  13:59:19.492195 IP myhost-priv.5149 > 239.111.0.22.netsupport:
UDP, length 118
  360 packets captured
  360 packets received by filter
  0 packets dropped by kernel
```

```
# On a RHEL 6, apart from the commands shown above, we can use
'omping'. It has to be
# started on all nodes indicating the IPs of the remote node(s) and
server's own IP as
# parameters:
```

```
myhostA:#> omping myhostA myhostB
  myhostA : waiting for response msg
  myhostA : waiting for response msg
  myhostA : waiting for response msg
  myhostA : waiting for response msg
  myhostA : waiting for response msg
  myhostA : joined (S,G) = (*, 232.43.211.234), pinging
  myhostA :   unicast, seq=1, size=69 bytes, dist=0, time=0.264ms
  myhostA : multicast, seq=1, size=69 bytes, dist=0, time=0.271ms
  myhostA :   unicast, seq=2, size=69 bytes, dist=0, time=0.312ms
  myhostA : multicast, seq=2, size=69 bytes, dist=0, time=0.320ms
  myhostA :   unicast, seq=3, size=69 bytes, dist=0, time=0.279ms
```

```
myhostA : multicast, seq=3, size=69 bytes, dist=0, time=0.287ms
```

```
myhostA : unicast, xmt/rcv/%loss = 3/3/0%, min/avg/max/std-dev =  
0.264/0.285/0.312/0.025
```

```
myhostA : multicast, xmt/rcv/%loss = 3/3/0%, min/avg/max/std-dev =  
0.271/0.293/0.320/0.025
```

```
myhostB:#> omping myhostA myhostB
```

```
myhostB : waiting for response msg
```

```
myhostB : joined (S,G) = (*, 232.43.211.234), pinging
```

```
myhostB : unicast, seq=1, size=69 bytes, dist=0, time=0.300ms
```

```
myhostB : multicast, seq=1, size=69 bytes, dist=0, time=0.306ms
```

```
myhostB : unicast, seq=2, size=69 bytes, dist=0, time=0.325ms
```

```
myhostB : multicast, seq=2, size=69 bytes, dist=0, time=0.331ms
```

```
myhostB : unicast, seq=3, size=69 bytes, dist=0, time=0.325ms
```

```
myhostB : multicast, seq=3, size=69 bytes, dist=0, time=0.332ms
```

```
myhostB : unicast, seq=4, size=69 bytes, dist=0, time=0.353ms
```

```
myhostB : multicast, seq=4, size=69 bytes, dist=0, time=0.359ms
```

```
myhostB : unicast, xmt/rcv/%loss = 4/4/0%, min/avg/max/std-dev =  
0.300/0.326/0.353/0.022
```

```
myhostB : multicast, xmt/rcv/%loss = 4/4/0%, min/avg/max/std-dev =  
0.306/0.332/0.359/0.022
```

Another idea could be making nodes answer multicast pings. In a normal configuration

when the multicast address is pinged by any node in the cluster there is no response.

By enabling multicast acknowledgements we will be able to receive a response to our

pings. If multicast is working well, all of the nodes should answer the ping.

```
# To enable this functionality temporarily, run following command on all nodes
```

```
sysctl -w net.ipv4.icmp_echo_ignore_broadcasts=0
```

```
# and test (For my cluster, formed by the nodes 192.168.100.101 and 192.168.100.102 with
```

```
# 239.111.0.22 as multicast address):
```

```
ping 239.111.0.22
```

```
  PING 239.111.0.22 (239.111.0.22) 56(84) bytes of data.
```

```
  64 bytes from 192.168.100.102: icmp_seq=1 ttl=64 time=0.027 ms
```

```
  64 bytes from 192.168.100.101: icmp_seq=1 ttl=64 time=0.334 ms
```

```
(DUP!)
```

```
  64 bytes from 192.168.100.102: icmp_seq=2 ttl=64 time=0.026 ms
```

```
  64 bytes from 192.168.100.101: icmp_seq=2 ttl=64 time=0.480 ms
```

```
(DUP!)
```

```
  64 bytes from 192.168.100.102: icmp_seq=3 ttl=64 time=0.029 ms
```

```
  64 bytes from 192.168.100.101: icmp_seq=3 ttl=64 time=0.309 ms
```

```
(DUP!)
```

```
  --- 239.111.0.22 ping statistics ---
```

```
  3 packets transmitted, 3 received, +3 duplicates, 0% packet loss, time 2630ms
```

```
  rtt min/avg/max/mdev = 0.026/0.200/0.480/0.182 ms
```

```
# To make this change permanent add following line to
```

```
/etc/sysctl.conf
```

```
net.ipv4.icmp_echo_ignore_broadcasts = 0
```

```
# and load the new setting
```

```
sysctl -p
```

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