

Re: Improving FreeBSD NFS performance (esp. directory updates)

Source: <http://unix.derkeiler.com/Mailing-Lists/FreeBSD/questions/2003-06/0449.html>

From: Thomas A. Limoncelli (*tal_at_lumeta.com*)

Date: 06/05/03

Date: Thu, 5 Jun 2003 11:13:45 -0400

To: Marc Wiz <marc@wiz.com>

On Thu, May 29, 2003 at 04:05:04PM -0500, Marc Wiz wrote:

> *On Thu, May 29, 2003 at 04:54:00PM -0400, Tom Limoncelli wrote:*

> > *I have a NFS server with (so far) a single NFS client. Things work*

> > *fine, however if (on the client) I do an "rm -rf foo" on a large (deep*

> > *and wide) directory tree the tty receives "NFS server not*

> > *responding"/"NFS server ok" messages.*

> >

> > *I don't think the network is at fault, nor is the server really going*

> > *away. I think the client is just impatient. Is there a way to speed*

> > *up a large "rm -rf"? I have soft-writes enabled but alas....*

>

> *Tom,*

>

> *please reproduce the problem but before doing it run the following commands*

> *and save the output:*

>

> *On the client:*

>

> *nfsstat -c*

> *netstat -m*

> *netstat -s*

>

> *On the server:*

>

> *nfsstat -s*

> *netstat -m*

> *netstat -s*

>

> *Run the rm -rf /foo*

>

> *Rerun the above commands on both the client and server and of course*

> *save the output again :-)*

>

> *RTFM-ing for nfsstat I am disappointed that nfsstat does not have -z*

> *option for zeroing out the counters. Time to look at the source :-)*

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It turns out the issue isn't only the "rm -rf", so I've eliminated that. The process is creating many subdirectories and files.

Here's the output that you requested. I've generated the output at a "baseline", 1 minute into the process, and then every 4 hours. Sorry for the flood of information but I figure "more is better". You can look at the first and last items if you prefer.

I really appreciate the help!

--tal

```
--
Tom Limoncelli -- tal@lumeta.com -- www.lumeta.Com
##### CLIENT BASELINE:
Thu Jun 5 01:41:32 UTC 2003
Client Info:
Rpc Counts:
  Getattr  Setattr  Lookup  Readlink  Read  Write  Create  Remove
16222151  2470  9976708  91232  23111364  23342730  544746  51291
  Rename   Link  Symlink  Mkdir  Rmdir  Readdir  RdirPlus  Access
   385     0   11004  760080  13602  16651     0  69815088
  Mknod   Fsstat  Fsinfo  PathConf  Commit  GLease  Vacate  Evict
    0    309621     58      0  21980734     0     0     0
Rpc Info:
  TimedOut  Invalid X Replies  Retries  Requests
    0         0         0      239  166249915
Cache Info:
Attr Hits  Misses Lkup Hits  Misses BioR Hits  Misses BioW Hits  Misses
359087567  84614481 137095640  9976703 201904089 23084158 15151506 23342730
BioRLHits  Misses BioD Hits  Misses DirE Hits  Misses
 5296031   91232   817844   16635   53658     0
257/608/18240 mbufs in use (current/peak/max):
  257 mbufs allocated to data
256/312/4560 mbuf clusters in use (current/peak/max)
776 Kbytes allocated to network (5% of mb_map in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
tcp:
  205722821 packets sent
    155645171 data packets (2158194817 bytes)
    109 data packets (89632 bytes) retransmitted
    0 resends initiated by MTU discovery
    34720623 ack-only packets (365546 delayed)
    0 URG only packets
    0 window probe packets
    15355469 window update packets
    1449 control packets
  213168802 packets received
    152983420 acks (for 2158194689 bytes)
    1424 duplicate acks
    0 acks for unsend data
    208828275 packets (1042433032 bytes) received in-sequence
    3 completely duplicate packets (192 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    62 out-of-order packets (5136 bytes)
    0 packets (0 bytes) of data after window
    0 window probes
    62774 window update packets
```

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```
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
671 connection requests
119 connection accepts
1 bad connection attempt
0 listen queue overflows
790 connections established (including accepts)
777 connections closed (including 2 drops)
    202 connections updated cached RTT on close
    202 connections updated cached RTT variance on close
    3 connections updated cached ssthresh on close
0 embryonic connections dropped
152983420 segments updated rtt (of 149305673 attempts)
74 retransmit timeouts
    1 connection dropped by rexmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
31 keepalive timeouts
    31 keepalive probes sent
    0 connections dropped by keepalive
3834814 correct ACK header predictions
60088755 correct data packet header predictions
119 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    119 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
udp:
32505483 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
32505483 delivered
32505508 datagrams output
ip:
245675002 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
```

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```
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
245674285 packets for this host
0 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
717 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
238228361 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header

icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
0 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled

igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

ipsec:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound packets considered authentic
0 inbound packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route

pfkey:
0 requests sent to userland
0 bytes sent to userland
0 messages with invalid length field
```

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```
0 messages with invalid version field
0 messages with invalid message type field
0 messages too short
0 messages with memory allocation failure
0 messages with duplicate extension
0 messages with invalid extension type
0 messages with invalid sa type
0 messages with invalid address extension
0 requests sent from userland
0 bytes sent from userland
0 messages toward single socket
0 messages toward all sockets
0 messages toward registered sockets
0 messages with memory allocation failure
##### SERVER BASELINE:
Thu Jun  5 01:41:32 UTC 2003
Server Info:
  Getattr   Setattr   Lookup   Readlink   Read   Write   Create   Remove
  296048   39773   26020818   9055   49805225   50475378   1571354   260814
  Rename   Link     Symlink   Mkdir     Rmdir   Readdir  RdirPlus  Access
  1976     56      11005    1508265   54648   59650    0         137413975
  Mknod    Fsstat   Fsinfo    PathConf   Commit   GLease   Vacate    Evict
  0        702791   137      0         47931951   0         0         0
Server Ret-Failed
  14095198
Server Faults
  0
Server Cache Stats:
  Inprog   Idem   Non-idem   Misses
  0        1      0         16460
Server Lease Stats:
  Leases   PeakL   GLeases
  0        0       0
Server Write Gathering:
  WriteOps WriteRPC  Opsaved
  50475365 50475378 13
325/656/26624 mbufs in use (current/peak/max):
  325 mbufs allocated to data
320/480/6656 mbuf clusters in use (current/peak/max)
1124 Kbytes allocated to network (5% of mb_map in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
tcp:
  472654157 packets sent
    451424444 data packets (3239599777 bytes)
    104 data packets (196240 bytes) retransmitted
    0 resends initiated by MTU discovery
    14282277 ack-only packets (319920 delayed)
    0 URG only packets
    24 window probe packets
    6942082 window update packets
    5226 control packets
  459147669 packets received
    371905696 acks (for 3239762566 bytes)
    980 duplicate acks
    0 acks for unsent data
    346810946 packets (60213319 bytes) received in-sequence
    90 completely duplicate packets (115 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    317 out-of-order packets (190339 bytes)
```

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```
    24 packets (24 bytes) of data after window
    24 window probes
    14815430 window update packets
    7 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
536 connection requests
4224 connection accepts
10 bad connection attempts
0 listen queue overflows
4756 connections established (including accepts)
4830 connections closed (including 12 drops)
    494 connections updated cached RTT on close
    494 connections updated cached RTT variance on close
    9 connections updated cached ssthresh on close
1 embryonic connection dropped
371902485 segments updated rtt (of 319713706 attempts)
90 retransmit timeouts
    2 connections dropped by rexmit timeout
24 persist timeouts
    0 connections dropped by persist timeout
44 keepalive timeouts
    40 keepalive probes sent
    4 connections dropped by keepalive
557433 correct ACK header predictions
62671106 correct data packet header predictions
4224 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    4224 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
udp:
10221344 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
0 dropped due to no socket
8 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
10221336 delivered
10221340 datagrams output
ip:
469369070 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
```

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```
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
469369040 packets for this host
30 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
0 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
482876841 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header

icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
Output histogram:
    echo reply: 22
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
Input histogram:
    echo reply: 5
    echo: 22
    time exceeded: 30
22 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled

igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

SLEEPING 1 MINUTE
##### CLIENT STATS:
Thu Jun  5 01:42:33 UTC 2003
Client Info:
Rpc Counts:
  Getattr  Setattr  Lookup  Readlink  Read  Write  Create  Remove
16238191  2472    9984994  91234   23122643  23350186  544770  52991
  Rename   Link     Symlink  Mkdir   Rmdir   Readdir RdirPlus Access
   385     0       11004   760083  13809   16868   0       69816796
  Mknod   Fsstat   Fsinfo   PathConf Commit  GLease  Vacate  Evict
   0      310035   58       0       21981230  0       0       0

Rpc Info:
```

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```
TimedOut      Invalid X Replies    Retries  Requests
0              0              0          239 166297749

Cache Info:
Attr Hits      Misses Lkup Hits      Misses BioR Hits      Misses BioW Hits      Misses
359237130      84631814 137107918      9984989 202039399 23095436 15263002 23350186
BioRLHits      Misses BioD Hits      Misses DirE Hits      Misses
5301370        91234     818917         16852     54050         0

258/608/18240 mbufs in use (current/peak/max):
    258 mbufs allocated to data
256/312/4560 mbuf clusters in use (current/peak/max)
776 Kbytes allocated to network (5% of mb_map in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines

tcp:
    205825744 packets sent
        155713107 data packets (2222668523 bytes)
        109 data packets (89632 bytes) retransmitted
        0 resends initiated by MTU discovery
        34744649 ack-only packets (365792 delayed)
        0 URG only packets
        0 window probe packets
        15366429 window update packets
        1450 control packets
    213282692 packets received
        153036028 acks (for 2222668398 bytes)
        1425 duplicate acks
        0 acks for unsent data
        208915722 packets (1139446386 bytes) received in-sequence
        3 completely duplicate packets (192 bytes)
        0 old duplicate packets
        0 packets with some dup. data (0 bytes duped)
        62 out-of-order packets (5136 bytes)
        0 packets (0 bytes) of data after window
        0 window probes
        63036 window update packets
        0 packets received after close
        0 discarded for bad checksums
        0 discarded for bad header offset fields
        0 discarded because packet too short
    671 connection requests
    121 connection accepts
    1 bad connection attempt
    0 listen queue overflows
    792 connections established (including accepts)
    780 connections closed (including 2 drops)
        203 connections updated cached RTT on close
        203 connections updated cached RTT variance on close
        3 connections updated cached ssthresh on close
    0 embryonic connections dropped
    153036028 segments updated rtt (of 149336451 attempts)
    74 retransmit timeouts
        1 connection dropped by rexmit timeout
    0 persist timeouts
        0 connections dropped by persist timeout
    31 keepalive timeouts
        31 keepalive probes sent
        0 connections dropped by keepalive
    3859386 correct ACK header predictions
    60149659 correct data packet header predictions
    121 syncache entries added
        0 retransmitted
```

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```
    0 dupsyn
    0 dropped
    121 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
udp:
32537570 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
32537570 delivered
32537595 datagrams output
ip:
245820979 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
245820262 packets for this host
0 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
717 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
238363371 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header
icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
```

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```
0 multicast timestamp requests ignored
0 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled

igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

ipsec:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound packets considered authentic
0 inbound packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route

pfkey:
0 requests sent to userland
0 bytes sent to userland
0 messages with invalid length field
0 messages with invalid version field
0 messages with invalid message type field
0 messages too short
0 messages with memory allocation failure
0 messages with duplicate extension
0 messages with invalid extension type
0 messages with invalid sa type
0 messages with invalid address extension
0 requests sent from userland
0 bytes sent from userland
0 messages toward single socket
0 messages toward all sockets
0 messages toward registered sockets
0 messages with memory allocation failure

##### SERVER STATS:
Thu Jun 5 01:42:33 UTC 2003
Server Info:
  Getattr  Setattr  Lookup  Readlink  Read  Write  Create  Remove
  296048   39775   26033686  9055  49816504  50482834  1571378  262514
  Rename   Link     Symlink  Mkdir    Rmdir  Readdir RdirPlus Access
  1976     56      11005   1508268  54855  59867   0 137415739
  Mknod    Fsstat   Fsinfo  PathConf Commit  GLease  Vacate  Evict
  0        703205  137     0 47932447  0        0        0
Server Ret-Failed
  14105293
Server Faults
```

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```
0
Server Cache Stats:
  Inprog      Idem  Non-idem  Misses
    0         1         0      16464
Server Lease Stats:
  Leases     PeakL  GLeases
    0         0         0
Server Write Gathering:
  WriteOps  WriteRPC  Opsaved
 50482821 50482834      13
321/656/26624 mbufs in use (current/peak/max):
  321 mbufs allocated to data
320/480/6656 mbuf clusters in use (current/peak/max)
1124 Kbytes allocated to network (5% of mb_map in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
tcp:
  472772952 packets sent
    451516794 data packets (3337218203 bytes)
    104 data packets (196240 bytes) retransmitted
    0 resends initiated by MTU discovery
    14297089 ack-only packets (319989 delayed)
    0 URG only packets
    24 window probe packets
    6953712 window update packets
    5229 control packets
  459255666 packets received
    371972861 acks (for 3337381593 bytes)
    981 duplicate acks
    0 acks for unsend data
    346883630 packets (125214181 bytes) received in-sequence
    90 completely duplicate packets (115 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    317 out-of-order packets (190339 bytes)
    24 packets (24 bytes) of data after window
    24 window probes
    14817344 window update packets
    7 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
  538 connection requests
  4224 connection accepts
  10 bad connection attempts
  0 listen queue overflows
  4758 connections established (including accepts)
  4835 connections closed (including 12 drops)
    495 connections updated cached RTT on close
    495 connections updated cached RTT variance on close
    9 connections updated cached ssthresh on close
  1 embryonic connection dropped
  371969641 segments updated rtt (of 319749615 attempts)
  90 retransmit timeouts
    2 connections dropped by rexmit timeout
  24 persist timeouts
    0 connections dropped by persist timeout
  44 keepalive timeouts
    40 keepalive probes sent
    4 connections dropped by keepalive
  557900 correct ACK header predictions
```

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```
62709321 correct data packet header predictions
4224 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    4224 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received

udp:
10221649 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
0 dropped due to no socket
8 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
10221641 delivered
10221645 datagrams output

ip:
469477372 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
469477342 packets for this host
30 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
0 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
482995940 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header

icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
Output histogram:
    echo reply: 22
```

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```
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
Input histogram:
    echo reply: 5
    echo: 22
    time exceeded: 30
22 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled

igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

SLEEPING 4 HOURS...
##### CLIENT STATS:
Thu Jun  5 05:42:36 UTC 2003
Client Info:
Rpc Counts:
  Getattr   Setattr   Lookup   Readlink   Read      Write     Create     Remove
18291843   2782     11804529  91808     28332701  28504676  572757     65380
  Rename    Link      Symlink   Mkdir     Rmdir     Readdir   RdirPlus   Access
   475      0         11004     1070856   15708     18944     0          84606016
  Mknod     Fsstat    Fsinfo    PathConf  Commit    GLease    Vacate     Evict
   0        345403    66        0         26827076  0         0          0
Rpc Info:
  TimedOut  Invalid X Replies  Retries  Requests
   0         0         0         258     200562024
Cache Info:
Attr Hits   Misses Lkup Hits   Misses BioR Hits   Misses BioW Hits   Misses
430263931  101304136  168652620  11804524  220203253  28295909  18967389  28504676
BioRLHits   Misses BioD Hits   Misses DirE Hits   Misses
 5976150    91808     918922     18928     69517     0
265/608/18240 mbufs in use (current/peak/max):
 265 mbufs allocated to data
256/312/4560 mbuf clusters in use (current/peak/max)
776 Kbytes allocated to network (5% of mb_map in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
tcp:
 250515434 packets sent
   189292111 data packets (897582854 bytes)
   109 data packets (89632 bytes) retransmitted
   0 resends initiated by MTU discovery
  42441733 ack-only packets (395535 delayed)
   0 URG only packets
   0 window probe packets
  18779923 window update packets
   1558 control packets
 259694133 packets received
  186005916 acks (for 897582671 bytes)
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
    1489 duplicate acks
    0 acks for unsent data
    254318401 packets (2377797713 bytes) received in-sequence
    3 completely duplicate packets (192 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    62 out-of-order packets (5136 bytes)
    0 packets (0 bytes) of data after window
    0 window probes
    76135 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
722 connection requests
122 connection accepts
1 bad connection attempt
0 listen queue overflows
844 connections established (including accepts)
837 connections closed (including 2 drops)
    226 connections updated cached RTT on close
    226 connections updated cached RTT variance on close
    3 connections updated cached ssthresh on close
0 embryonic connections dropped
186005916 segments updated rtt (of 181466275 attempts)
74 retransmit timeouts
    1 connection dropped by rexmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
38 keepalive timeouts
    38 keepalive probes sent
    0 connections dropped by keepalive
4763103 correct ACK header predictions
73571780 correct data packet header predictions
122 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    122 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
udp:
    36591654 datagrams received
    0 with incomplete header
    0 with bad data length field
    0 with bad checksum
    0 with no checksum
    0 dropped due to no socket
    0 broadcast/multicast datagrams dropped due to no socket
    0 dropped due to full socket buffers
    0 not for hashed pcb
    36591654 delivered
    36591679 datagrams output
ip:
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
296286546 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
296285789 packets for this host
0 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
757 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
287107153 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header

icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
0 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled

igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

ipsec:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound packets considered authentic
0 inbound packets failed on authentication
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route

pfkey:
0 requests sent to userland
0 bytes sent to userland
0 messages with invalid length field
0 messages with invalid version field
0 messages with invalid message type field
0 messages too short
0 messages with memory allocation failure
0 messages with duplicate extension
0 messages with invalid extension type
0 messages with invalid sa type
0 messages with invalid address extension
0 requests sent from userland
0 bytes sent from userland
0 messages toward single socket
0 messages toward all sockets
0 messages toward registered sockets
0 messages with memory allocation failure
##### SERVER STATS:
Thu Jun 5 05:42:37 UTC 2003
Server Info:
  Getattr   Setattr   Lookup   Readlink   Read      Write     Create    Remove
  323632    40085    28932799 9055      55052735 55637328 1599365   274903
  Rename    Link      Symlink   Mkdir     Rmdir     Readdir   RdirPlus  Access
  2066      56       11005    1819041   56754     61943     0         152208744
  Mknod     Fsstat   Fsinfo    PathConf  Commit    GLease    Vacate    Evict
  0         738573   148      0         52778344 0         0         0
Server Ret-Failed
  16557700
Server Faults
  0
Server Cache Stats:
  Inprog    Idem     Non-idem  Misses
  0         1        0         17472
Server Lease Stats:
  Leases    PeakL    GLeases
  0         0        0
Server Write Gathering:
  WriteOps  WriteRPC  Opsaved
  55637315  55637328  13
323/656/26624 mbufs in use (current/peak/max):
  323 mbufs allocated to data
321/480/6656 mbuf clusters in use (current/peak/max)
1124 Kbytes allocated to network (5% of mb_map in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
tcp:
  521067987 packets sent
    498582868 data packets (1076833566 bytes)
    104 data packets (196240 bytes) retransmitted
    0 resends initiated by MTU discovery
    15093544 ack-only packets (341285 delayed)
    0 URG only packets
    24 window probe packets
    7386063 window update packets
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
5384 control packets
505814899 packets received
411042377 acks (for 1076996152 bytes)
1030 duplicate acks
0 acks for unsent data
381993718 packets (3666877800 bytes) received in-sequence
105 completely duplicate packets (115 bytes)
0 old duplicate packets
0 packets with some dup. data (0 bytes duped)
520 out-of-order packets (374013 bytes)
24 packets (24 bytes) of data after window
24 window probes
16390306 window update packets
7 packets received after close
0 discarded for bad checksums
0 discarded for bad header offset fields
0 discarded because packet too short
567 connection requests
4329 connection accepts
10 bad connection attempts
0 listen queue overflows
4892 connections established (including accepts)
4998 connections closed (including 12 drops)
    538 connections updated cached RTT on close
    538 connections updated cached RTT variance on close
    9 connections updated cached ssthresh on close
1 embryonic connection dropped
411039150 segments updated rtt (of 353221110 attempts)
90 retransmit timeouts
    2 connections dropped by rexmit timeout
24 persist timeouts
    0 connections dropped by persist timeout
44 keepalive timeouts
    40 keepalive probes sent
    4 connections dropped by keepalive
590778 correct ACK header predictions
67706696 correct data packet header predictions
4329 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    4329 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
udp:
10224158 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
0 dropped due to no socket
8 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
10224150 delivered
10224154 datagrams output
ip:
516039114 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
516039084 packets for this host
30 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
0 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
531293484 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header
icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
Output histogram:
    echo reply: 22
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
Input histogram:
    echo reply: 5
    echo: 22
    time exceeded: 30
22 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled
igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent
SLEEPING 4 HOURS...
##### CLIENT STATS:
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

Thu Jun 5 09:42:40 UTC 2003

Client Info:

Rpc Counts:

Getattr	Setattr	Lookup	Readlink	Read	Write	Create	Remove
18727442	2783	13820168	93199	29959434	30375868	899832	78504
Rename	Link	Symlink	Mkdir	Rmdir	Readdir	RdirPlus	Access
475	0	11004	1070861	15708	18960	0	90654145
Mknod	Fsstat	Fsinfo	PathConf	Commit	GLease	Vacate	Evict
0	366772	68	0	28641396	0	0	0

Rpc Info:

TimedOut	Invalid X	Replies	Retries	Requests
0	0	1	282	214736619

Cache Info:

Attr Hits	Misses	Lkup Hits	Misses	BioR Hits	Misses	BioW Hits	Misses
453186427	106936311	181352599	13820163	220428945	29922317	19614972	30375868
BioRLHits	Misses	BioD Hits	Misses	DirE Hits	Misses		
6120879	93199	962636	18944	69975	0		

261/608/18240 mbufs in use (current/peak/max):

261 mbufs allocated to data

257/312/4560 mbuf clusters in use (current/peak/max)

776 Kbytes allocated to network (5% of mb_map in use)

0 requests for memory denied

0 requests for memory delayed

0 calls to protocol drain routines

tcp:

266966200 packets sent

202841477 data packets (3366927201 bytes)

109 data packets (89632 bytes) retransmitted

0 resends initiated by MTU discovery

44598697 ack-only packets (465127 delayed)

0 URG only packets

0 window probe packets

19524236 window update packets

1681 control packets

276560865 packets received

199474517 acks (for 3366927079 bytes)

1559 duplicate acks

0 acks for unsent data

271045572 packets (1478005868 bytes) received in-sequence

3 completely duplicate packets (192 bytes)

0 old duplicate packets

0 packets with some dup. data (0 bytes duped)

62 out-of-order packets (5136 bytes)

0 packets (0 bytes) of data after window

0 window probes

77158 window update packets

0 packets received after close

0 discarded for bad checksums

0 discarded for bad header offset fields

0 discarded because packet too short

785 connection requests

123 connection accepts

1 bad connection attempt

0 listen queue overflows

908 connections established (including accepts)

897 connections closed (including 2 drops)

240 connections updated cached RTT on close

240 connections updated cached RTT variance on close

3 connections updated cached ssthresh on close

0 embryonic connections dropped

199474517 segments updated rtt (of 194834751 attempts)

74 retransmit timeouts

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```

    1 connection dropped by rexmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
48 keepalive timeouts
    48 keepalive probes sent
    0 connections dropped by keepalive
4896401 correct ACK header predictions
76961681 correct data packet header predictions
123 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    123 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
udp:
37469217 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
37469217 delivered
37469242 datagrams output
ip:
314030879 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
314030082 packets for this host
0 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
797 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
304435491 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
0 tunneling packets that can't find gif
0 datagrams with bad address in header
icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
0 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled
igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent
ipsec:
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound packets considered authentic
0 inbound packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route
pfkey:
0 requests sent to userland
0 bytes sent to userland
0 messages with invalid length field
0 messages with invalid version field
0 messages with invalid message type field
0 messages too short
0 messages with memory allocation failure
0 messages with duplicate extension
0 messages with invalid extension type
0 messages with invalid sa type
0 messages with invalid address extension
0 requests sent from userland
0 bytes sent from userland
0 messages toward single socket
0 messages toward all sockets
0 messages toward registered sockets
0 messages with memory allocation failure
##### SERVER STATS:
Thu Jun 5 09:42:40 UTC 2003
```

frebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

Server Info:

Getattr	Setattr	Lookup	Readlink	Read	Write	Create	Remove
323632	40086	30950580	9055	56688195	57508517	1926440	288027
Rename	Link	Symlink	Mkdir	Rmdir	Readdir	RdirPlus	Access
2066	56	11005	1819046	56754	61959	0	158256907
Mknod	Fsstat	Fsinfo	PathConf	Commit	GLease	Vacate	Evict
0	759942	151	0	54592613	0	0	0

Server Ret-Failed

17041526

Server Faults

0

Server Cache Stats:

Inprog	Idem	Non-idem	Misses
0	1	0	18500

Server Lease Stats:

Leases	PeakL	GLeases
0	0	0

Server Write Gathering:

WriteOps	WriteRPC	Opsaved
57508504	57508517	13

338/656/26624 mbufs in use (current/peak/max):

323 mbufs allocated to data

15 mbufs allocated to packet headers

337/480/6656 mbuf clusters in use (current/peak/max)

1124 Kbytes allocated to network (5% of mb_map in use)

0 requests for memory denied

0 requests for memory delayed

0 calls to protocol drain routines

tcp:

554807419 packets sent

526370311 data packets (2196092365 bytes)

104 data packets (196240 bytes) retransmitted

0 resends initiated by MTU discovery

20398255 ack-only packets (376135 delayed)

0 URG only packets

24 window probe packets

8033219 window update packets

5506 control packets

539134253 packets received

431500859 acks (for 2196255625 bytes)

1064 duplicate acks

0 acks for unsent data

406573269 packets (3806413371 bytes) received in-sequence

125 completely duplicate packets (115 bytes)

0 old duplicate packets

0 packets with some dup. data (0 bytes duped)

520 out-of-order packets (374013 bytes)

24 packets (24 bytes) of data after window

24 window probes

16755860 window update packets

7 packets received after close

0 discarded for bad checksums

0 discarded for bad header offset fields

0 discarded because packet too short

577 connection requests

4440 connection accepts

10 bad connection attempts

0 listen queue overflows

5013 connections established (including accepts)

5119 connections closed (including 12 drops)

567 connections updated cached RTT on close

567 connections updated cached RTT variance on close

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```

    9 connections updated cached ssthresh on close
    1 embryonic connection dropped
    431497632 segments updated rtt (of 372476580 attempts)
    90 retransmit timeouts
        2 connections dropped by rexmit timeout
    24 persist timeouts
        0 connections dropped by persist timeout
    45 keepalive timeouts
        41 keepalive probes sent
        4 connections dropped by keepalive
    615782 correct ACK header predictions
    79623807 correct data packet header predictions
    4440 syncache entries added
        0 retransmitted
        0 dupsyn
        0 dropped
        4440 completed
        0 bucket overflow
        0 cache overflow
        0 reset
        0 stale
        0 aborted
        0 badack
        0 unreach
        0 zone failures
    0 cookies sent
    0 cookies received
udp:
    10226300 datagrams received
    0 with incomplete header
    0 with bad data length field
    0 with bad checksum
    0 with no checksum
    0 dropped due to no socket
    8 broadcast/multicast datagrams dropped due to no socket
    0 dropped due to full socket buffers
    0 not for hashed pcb
    10226292 delivered
    10226296 datagrams output
ip:
    549360610 total packets received
    0 bad header checksums
    0 with size smaller than minimum
    0 with data size < data length
    0 with ip length > max ip packet size
    0 with header length < data size
    0 with data length < header length
    0 with bad options
    0 with incorrect version number
    0 fragments received
    0 fragments dropped (dup or out of space)
    0 fragments dropped after timeout
    0 packets reassembled ok
    549360580 packets for this host
    30 packets for unknown/unsupported protocol
    0 packets forwarded (0 packets fast forwarded)
    0 packets not forwardable
    0 packets received for unknown multicast group
    0 redirects sent
    565035059 packets sent from this host
    0 packets sent with fabricated ip header
    0 output packets dropped due to no bufs, etc.
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header

icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
Output histogram:
    echo reply: 22
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
Input histogram:
    echo reply: 5
    echo: 22
    time exceeded: 30
22 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled

igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent

SLEEPING 4 HOURS...
##### CLIENT STATS:
Thu Jun  5 13:42:43 UTC 2003
Client Info:
Rpc Counts:
  Getattr  Setattr   Lookup  Readlink   Read    Write    Create    Remove
18771758   2784  14882503  93952  33231454  33768660  903604    82274
  Rename   Link     Symlink   Mkdir     Rmdir   Readdir  RdirPlus  Access
  475      0       11004    1070861   15708   18960    0         94941038
  Mknod    Fsstat   Fsinfo    PathConf  Commit  GLease   Vacate    Evict
  0        370554   72       0         32028636  0         0         0

Rpc Info:
  TimedOut  Invalid X Replies  Retries  Requests
  0         0         1         294     230194297

Cache Info:
Attr Hits   Misses Lkup Hits   Misses BioR Hits   Misses BioW Hits   Misses
461743064  110710274  184532077  14882498  217297322  33186398  19688391  33768660
BioRLHits   Misses BioD Hits   Misses DirE Hits   Misses
  6135390    93952    970182    18944    69975     0

264/608/18240 mbufs in use (current/peak/max):
    264 mbufs allocated to data
256/312/4560 mbuf clusters in use (current/peak/max)
776 Kbytes allocated to network (5% of mb_map in use)
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
tcp:
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
289571728 packets sent
    218017822 data packets (2416274585 bytes)
    109 data packets (89632 bytes) retransmitted
    0 resends initiated by MTU discovery
    49738933 ack-only packets (515383 delayed)
    0 URG only packets
    0 window probe packets
    21813112 window update packets
    1752 control packets
300185575 packets received
    214633733 acks (for 2416274622 bytes)
    1606 duplicate acks
    0 acks for unsent data
    294650552 packets (845203231 bytes) received in-sequence
    3 completely duplicate packets (192 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    62 out-of-order packets (5136 bytes)
    0 packets (0 bytes) of data after window
    0 window probes
    77248 window update packets
    0 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
817 connection requests
127 connection accepts
1 bad connection attempt
0 listen queue overflows
944 connections established (including accepts)
936 connections closed (including 2 drops)
    251 connections updated cached RTT on close
    251 connections updated cached RTT variance on close
    3 connections updated cached ssthresh on close
0 embryonic connections dropped
214633733 segments updated rtt (of 209981421 attempts)
74 retransmit timeouts
    1 connection dropped by rexmit timeout
0 persist timeouts
    0 connections dropped by persist timeout
56 keepalive timeouts
    56 keepalive probes sent
    0 connections dropped by keepalive
4915280 correct ACK header predictions
85417737 correct data packet header predictions
127 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    127 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
0 cookies sent
0 cookies received
udp:
    37561542 datagrams received
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
0 dropped due to no socket
0 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
37561542 delivered
37561567 datagrams output

ip:
337747954 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
337747117 packets for this host
0 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
837 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
327133352 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header

icmp:
0 calls to icmp_error
0 errors not generated 'cuz old message was icmp
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
0 message responses generated
0 invalid return addresses
0 no return routes
ICMP address mask responses are disabled

igmp:
0 messages received
0 messages received with too few bytes
0 messages received with bad checksum
0 membership queries received
0 membership queries received with invalid field(s)
0 membership reports received
0 membership reports received with invalid field(s)
0 membership reports received for groups to which we belong
0 membership reports sent
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

ipsec:

```
0 inbound packets processed successfully
0 inbound packets violated process security policy
0 inbound packets with no SA available
0 invalid inbound packets
0 inbound packets failed due to insufficient memory
0 inbound packets failed getting SPI
0 inbound packets failed on AH replay check
0 inbound packets failed on ESP replay check
0 inbound packets considered authentic
0 inbound packets failed on authentication
0 outbound packets processed successfully
0 outbound packets violated process security policy
0 outbound packets with no SA available
0 invalid outbound packets
0 outbound packets failed due to insufficient memory
0 outbound packets with no route
```

pfkey:

```
0 requests sent to userland
0 bytes sent to userland
0 messages with invalid length field
0 messages with invalid version field
0 messages with invalid message type field
0 messages too short
0 messages with memory allocation failure
0 messages with duplicate extension
0 messages with invalid extension type
0 messages with invalid sa type
0 messages with invalid address extension
0 requests sent from userland
0 bytes sent from userland
0 messages toward single socket
0 messages toward all sockets
0 messages toward registered sockets
0 messages with memory allocation failure
```

SERVER STATS:

Thu Jun 5 13:42:44 UTC 2003

Server Info:

Getattr	Setattr	Lookup	Readlink	Read	Write	Create	Remove
323632	40088	32119925	9055	59960222	60901311	1930212	291797
Rename	Link	Symlink	Mkdir	Rmdir	Readdir	RdirPlus	Access
2066	56	11005	1819046	56754	61959	0	162546776
Mknod	Fsstat	Fsinfo	PathConf	Commit	GLease	Vacate	Evict
0	763722	155	0	57979855	0	0	0

Server Ret-Failed

17168265

Server Faults

0

Server Cache Stats:

Inprog	Idem	Non-idem	Misses
0	1	0	19500

Server Lease Stats:

Leases	PeakL	GLeases
0	0	0

Server Write Gathering:

WriteOps	WriteRPC	Opsaved
60901298	60901311	13

340/656/26624 mbufs in use (current/peak/max):

325 mbufs allocated to data

15 mbufs allocated to packet headers

335/482/6656 mbuf clusters in use (current/peak/max)

1128 Kbytes allocated to network (5% of mb_map in use)

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
0 requests for memory denied
0 requests for memory delayed
0 calls to protocol drain routines
tcp:
  664152301 packets sent
    606059893 data packets (2108610774 bytes)
    104 data packets (196240 bytes) retransmitted
    0 resends initiated by MTU discovery
    46753233 ack-only packets (395879 delayed)
    0 URG only packets
    24 window probe packets
    11333465 window update packets
    5582 control packets
  647476611 packets received
    479739909 acks (for 2108774617 bytes)
    1089 duplicate acks
    0 acks for unsent data
    477834030 packets (3400105981 bytes) received in-sequence
    144 completely duplicate packets (115 bytes)
    0 old duplicate packets
    0 packets with some dup. data (0 bytes duped)
    520 out-of-order packets (374013 bytes)
    24 packets (24 bytes) of data after window
    24 window probes
    17898282 window update packets
    7 packets received after close
    0 discarded for bad checksums
    0 discarded for bad header offset fields
    0 discarded because packet too short
  581 connection requests
  4507 connection accepts
  10 bad connection attempts
  0 listen queue overflows
  5084 connections established (including accepts)
  5191 connections closed (including 12 drops)
    581 connections updated cached RTT on close
    581 connections updated cached RTT variance on close
    9 connections updated cached ssthresh on close
  1 embryonic connection dropped
  479736682 segments updated rtt (of 417415451 attempts)
  90 retransmit timeouts
    2 connections dropped by rexmit timeout
  24 persist timeouts
    0 connections dropped by persist timeout
  47 keepalive timeouts
    43 keepalive probes sent
    4 connections dropped by keepalive
  650714 correct ACK header predictions
  137878950 correct data packet header predictions
  4507 syncache entries added
    0 retransmitted
    0 dupsyn
    0 dropped
    4507 completed
    0 bucket overflow
    0 cache overflow
    0 reset
    0 stale
    0 aborted
    0 badack
    0 unreach
    0 zone failures
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
0 cookies sent
0 cookies received
udp:
10230915 datagrams received
0 with incomplete header
0 with bad data length field
0 with bad checksum
0 with no checksum
1 dropped due to no socket
8 broadcast/multicast datagrams dropped due to no socket
0 dropped due to full socket buffers
0 not for hashed pcb
10230906 delivered
10230910 datagrams output
ip:
657707583 total packets received
0 bad header checksums
0 with size smaller than minimum
0 with data size < data length
0 with ip length > max ip packet size
0 with header length < data size
0 with data length < header length
0 with bad options
0 with incorrect version number
0 fragments received
0 fragments dropped (dup or out of space)
0 fragments dropped after timeout
0 packets reassembled ok
657707553 packets for this host
30 packets for unknown/unsupported protocol
0 packets forwarded (0 packets fast forwarded)
0 packets not forwardable
0 packets received for unknown multicast group
0 redirects sent
674384558 packets sent from this host
0 packets sent with fabricated ip header
0 output packets dropped due to no bufs, etc.
0 output packets discarded due to no route
0 output datagrams fragmented
0 fragments created
0 datagrams that can't be fragmented
0 tunneling packets that can't find gif
0 datagrams with bad address in header
icmp:
1 call to icmp_error
0 errors not generated 'cuz old message was icmp
Output histogram:
    echo reply: 22
    destination unreachable: 1
0 messages with bad code fields
0 messages < minimum length
0 bad checksums
0 messages with bad length
0 multicast echo requests ignored
0 multicast timestamp requests ignored
Input histogram:
    echo reply: 5
    echo: 22
    time exceeded: 30
22 message responses generated
0 invalid return addresses
0 no return routes
```

freebsd-questions: Re: Improving FreeBSD NFS performance (esp. directory updates)

```
ICMP address mask responses are disabled
igmp:
  0 messages received
  0 messages received with too few bytes
  0 messages received with bad checksum
  0 membership queries received
  0 membership queries received with invalid field(s)
  0 membership reports received
  0 membership reports received with invalid field(s)
  0 membership reports received for groups to which we belong
  0 membership reports sent
```

freebsd-questions@freebsd.org mailing list

<http://lists.freebsd.org/mailman/listinfo/freebsd-questions>

To unsubscribe, send any mail to "freebsd-questions-unsubscribe@freebsd.org"