Subject: Measuring server frame time?
Posted by iRANian on Thu, 09 Mar 2017 22:19:30 GMT
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How would you go about measuring server frame time? Considering sfps is a shit measure for server lag.

Now for calculating server frame time recording pairing 'current frame number' and ('current time in milliseconds' - 'last time in milliseconds') ought to work right.

But how could I measure all the issues caused by Observers/Scripts and hooks and plugins? Do i need to use assembly hooking? I'd like to be able to record the lag caused by having all the extra script and logic running. I know I can modify the Dragonade source code for some of it, but there are also things I can't measure when just modifying the Dragonade source code.

I'm pretty sure Dragonade contains some slowdowns when the server is running for some time, for example on Rencorner you can see the sfps drop from 100 to 97 after server is running for a while. This causes infantry to suffer. It looks like just a 3 SFPS drop but it's averaged over a second so it's probably a very long pause.

Subject: Re: Measuring server frame time?
Posted by Gen_Blacky on Wed, 15 Mar 2017 07:34:13 GMT
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iRANian wrote on Thu, 09 March 2017 15:19How would you go about measuring server frame time? Considering sfps is a shit measure for server lag.

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That would be neat. There is a million and one observers running on god knows objects.

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It is likely my bad coding haha.

Subject: Re: Measuring server frame time?
Posted by iRANian on Wed, 15 Mar 2017 09:02:42 GMT
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I'd start with just doing an OnThink() hook which writes to a dynamic vector of a struct FrameTime
which looks like this:

struct FrameTime {
int frame;
int msDiffSinceLastFrame; // the milliseconds difference since last frame
}

In the init function of the plugin you initialize the dynamic vector class with type struct FrameTime
and a global called FrameLastTime which stores the last frame time in milliseconds (the
milliseconds expired since Windows was started). Use timeGetTime() to initialize this var. the The
init function also needs to use timeBeginPeriod(1); to set the timer resolution to 1 millisecond.

In onThink you do:

int currentTimeInMs = timeGetTime();
int diffInMs = currentTimeInMs - FrameLastTime;
FrameLastTime = currentTimeInMs;

DynamicVectorClass.add(new FrameTime { .Frame = The_Game()->Get_Current_Frame(),
.msDiffSinceLastFrame = diffInMs });

In the gameover hook you add:

Function_To_Write_CSV_File_From_Dynamic_Vector_Of_FrameTimes();
for each FrameTime in DynamicVectorClass_Of_FrameTImes
-->delete FrameTime;
DynamicVectorClass_Of_Frame_Times.Clear();

The function to write frametimes just does a for each loop on every the dynamic vector of frame
times and does a fprintf(file, "%d,%d", FrameTime->frame, FrameTime->msDiffSinceLastFrame);

Don't forget to call fopen() and fclose(). the filename should contain the start date and time of the
map, map name etc.

Then you open the .csv text file that is written and create a graph in Excel or something.

Main issue is that the Windows timer functions we're using might not be high resolution
enough...the Microsoft documentation is warning about it. We can use more high resolution timers
if that's an issue.

Another issue is that the timeGetTime() functions returns the milliseconds since Windows was
started, as a 32-bit value. This wraps around after Windows has been running for 48 days (so
after 48 days, timeGetTime() will start returning from 0)

Subject: Re: Measuring server frame time?
Posted by iRANian on Fri, 24 Mar 2017 20:48:40 GMT
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GENBLACKY

Subject: Re: Measuring server frame time?
Posted by dblaney1 on Fri, 24 Mar 2017 23:53:50 GMT
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The best way to reduce lag on the server is to run the default sfps of 60. The more even the fps the better. Running 100 will just make things laggier.

Subject: Re: Measuring server frame time?
Posted by Jerad2142 on Mon, 27 Mar 2017 00:58:00 GMT
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dblaney1 wrote on Fri, 24 March 2017 17:53The best way to reduce lag on the server is to run the default sfps of 60. The more even the fps the better. Running 100 will just make things laggier.
And have the clients run with vsync on as well, if both can run 60fps it minimalizes the physics inconsistencies.

Subject: Re: Measuring server frame time?
Posted by iRANian on Tue, 28 Mar 2017 21:12:27 GMT
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vsync causes input lag.

Really noticeable too

Subject: Re: Measuring server frame time?
Posted by Jerad2142 on Wed, 29 Mar 2017 03:08:32 GMT
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iRANian wrote on Tue, 28 March 2017 15:12vsync causes input lag.

Really noticeable too
Depends on the game from my experience.

Subject: Re: Measuring server frame time?
Posted by iRANian on Wed, 29 Mar 2017 07:37:40 GMT
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It's in every game because triple buffering is using. Only NVIDIA's adaptive sync which they introduced with Pascal is decent.

Subject: Re: Measuring server frame time?
Posted by Gen_Blacky on Fri, 31 Mar 2017 14:18:41 GMT
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iRANian wrote on Fri, 24 March 2017 14:48GENBLACKY

Sorry I have been busy and forgot to respond. Why never on irc!
I have been working on Brenbot recently. A server resource tool would a cool idea. It would be very cool to determine processing time and such of observers/scripts long running stuff. But really is unnecessary. (still would do it for the fun)
WD has been doing his thing and testing da 1.9.0.

Jerad Gray wrote on Sun, 26 March 2017 18:58dblaney1 wrote on Fri, 24 March 2017 17:53The best way to reduce lag on the server is to run the default sfps of 60. The more even the fps the better. Running 100 will just make things laggier.
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yep and yep

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Posted by Gen_Blacky on Fri, 31 Mar 2017 14:27:41 GMT
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Jerad Gray wrote on Tue, 28 March 2017 21:08iRANian wrote on Tue, 28 March 2017 15:12vsync causes input lag.

Really noticeable too
Depends on the game from my experience.

I have to use vsync. I usually have over 1000fps and yea the clipping is bad. But everything

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displays properly when vsync is on. The input lag is unnoticeable for me.

Subject: Re: Measuring server frame time?
Posted by dblaney1 on Fri, 31 Mar 2017 17:02:46 GMT
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Gen_Blacky wrote on Fri, 31 March 2017 07:18iRANian wrote on Fri, 24 March 2017 14:48GENBLACKY

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yep and yep

Most of the cpu time is not really related to scripts per say. The engine code is way heavier than anything the scripts or DA is doing. Lots of collision math and raytraces etc. Plus all the network stuff. Sending updates to a bunch of players seems to be one of the larger chunks of cpu usage. I usually can have hundreds of bots fine but once you hit like 20-30 players the cpu usage goes up a lot.

Subject: Re: Measuring server frame time?
Posted by iRANian on Sat, 01 Apr 2017 07:49:34 GMT
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It'a not that, it's that the server will hang like 50-100 ms from time to time, causing stutter in player movement on the server. SFPS counters can't detect it, you need a frametime counter. The Source engine has one built in for servers iirc.

Subject: Re: Measuring server frame time?
Posted by jonwil on Sat, 01 Apr 2017 10:42:11 GMT
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I dont know how useful they are but the engine has values called FrameSeconds and

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RealFrameSeconds.

Put these in a source file somewhere and access them like any other float variable
REF_DEF2(float, FrameSeconds, 0x00857290, 0x00856478);
REF_DEF2(float, RealFrameSeconds, 0x00857294, 0x0085647C);

You could stick in a Think hook somewhere and see what those variables look like (not sure what the difference between the 2 actually is though)

Subject: Re: Measuring server frame time?
Posted by iRANian on Wed, 05 Apr 2017 07:56:45 GMT
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Thanks, that sounds interesting.

Subject: Re: Measuring server frame time?
Posted by iRANian on Fri, 14 Apr 2017 13:31:14 GMT
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What about cNetwork::worstFPS? Seems to be doing the same thing.