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John Loop's 3-5-2022 imonitor[g] newsletter. This project may never end.... Work continues on refining scripts for 2nd,3rd,4th order effects!

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Mon, Mar 7, 2022 at 12:43 PM

Dear imonitor[g] users, potential users, former users, and interested parties:

Summary for those of you new to this newsletter:

I am working on a project to perform Internet/Local Network monitoring. I use a small device [raspberry pi], along with custom scripts to perform this service. I have deployed this device to 23 partners across the country who help in the development. I initially targeted the service in 2018 to users in my mountain community in Jasper GA [windstream ISP] to assist in troubleshooting, but it is applicable universally, and I have helpers across the country on Windstream, ATT, Ting, Spectrum, Comcast, CenturyLink, Tmobile, Starlink and several other ISPs. It spans all access technologies from ADSL, VDSL, WADSL, cellular, cable, satellite and fiber. I also released a "generic" version which is completely standalone, and has no connection to my servers at all.

Let me know if you are interested. OR you can purchase a raspberrry pi 3B or 3B+, burn a microSD image, and insert the pi in your network! Nerds might be interested in this alternative. You will get LOTs of info about your network!! Here is a 3B+ pi you can order: This pkg contains a microUSB caddy you can use to burn an image.

This is an excellent use for an older pi3B or 3B+!! Set it and forget it and get a daily email about your stats! Newer pis are coming online, esp the pi4B and the pi02w.

https://www.amazon.com/gp/product/B07BLRSKBV/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&pvc=1 <https://www.amazon.com/gp/product/B07BLRSKBV/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&pvc=1>

Here is where you get the "generic" images: <https://sourceforge.net/projects/imonitorg/>

You can use 7-zip to uncompress [or normal linux tools such as unzip, bunzip, xz] and Win32diskimager on windows to burn the microSD <https://sourceforge.net/projects/win32diskimager/>

Here are instructions to get a gmail key to use to config the email for the sourceforge images: <https://imonitorg.com/gmailRelayInstructions.txt>

As always, you can refer to the main information page at <https://imonitorg.com> There are images of the web site, email, plots, etc. I even put up a rudimentary "order page" there. You can get the image directly, or "order" from me. Otherwise, if you want join our "helpers" club, contact me directly. I have a spare raspberrry pi I can send you. You will be pi12!

There is a "quick intro" doc at <https://imonitorg.com/QuickManual.pdf> [there is a QuickManualG.pdf for the generic version as well]

Last month Newsletter: <https://imonitorg.com/newsletter9-4-2021.pdf>

Newsletter 3-4-2022 topics

1. New raspberrry pi 3B (jessie) and 3B+ (stretch) generic images are posted at sourceforge: <https://sourceforge.net/projects/imonitorg/> These are /*completely standalone*/ with no Internet contact for management. They will come up running on your network. Management and access to statistics is via a web page on the rpi accessible on your home network. Manual: <https://imonitorg.com/QuickManualG.pdf>

2. I want to welcome Mel on pi8. This is a Starlink connection! It will be interesting to compare/contrast this with our other connections. He is awaiting a wife to ethernet bridge to connect the pi8, and then we should start seeing his plots. You can see all the helpers here: <https://imonitorg.com/customerplots/rtcustomerplots/>

3. I am continuing to work bugs and 2nd and 3rd order problems. I am even fixing things that I broke by my bug fixes..... Sure sign of progress! I really appreciate the use of all your different ISPs and situations to chase these problems.

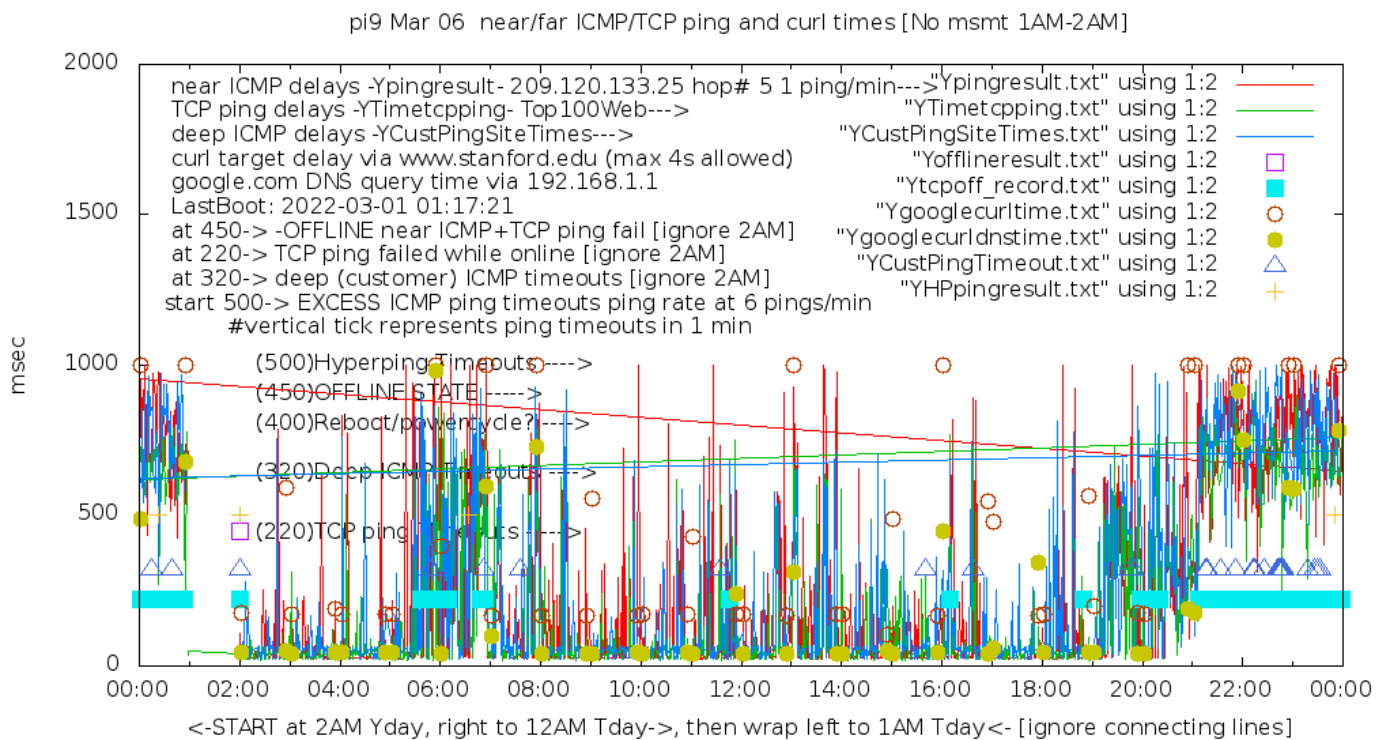
4. I implemented a microSD script to monitor the writes to the SD card, and am evaluating ways to use this. I also added a script to check for the root FS being switched to "read only" - the sign of imminent failure. MicroSD card failure continues to be a problem. Pi12 failed in Jan and was replaced by pi2. The problem of microSD card reliability when used for OS-like applications is unsolved. They were meant to be used for -barely accessed- storage, for pictures and the like, not for continual read/write access. You will see a line like this in the email: [if you can help me with interpretation, that would be great!!]

```
-> SD card write stats
SD card / partition: Yday sector writes/total sector writes/Per minute: 1904848 5028056 1322
```

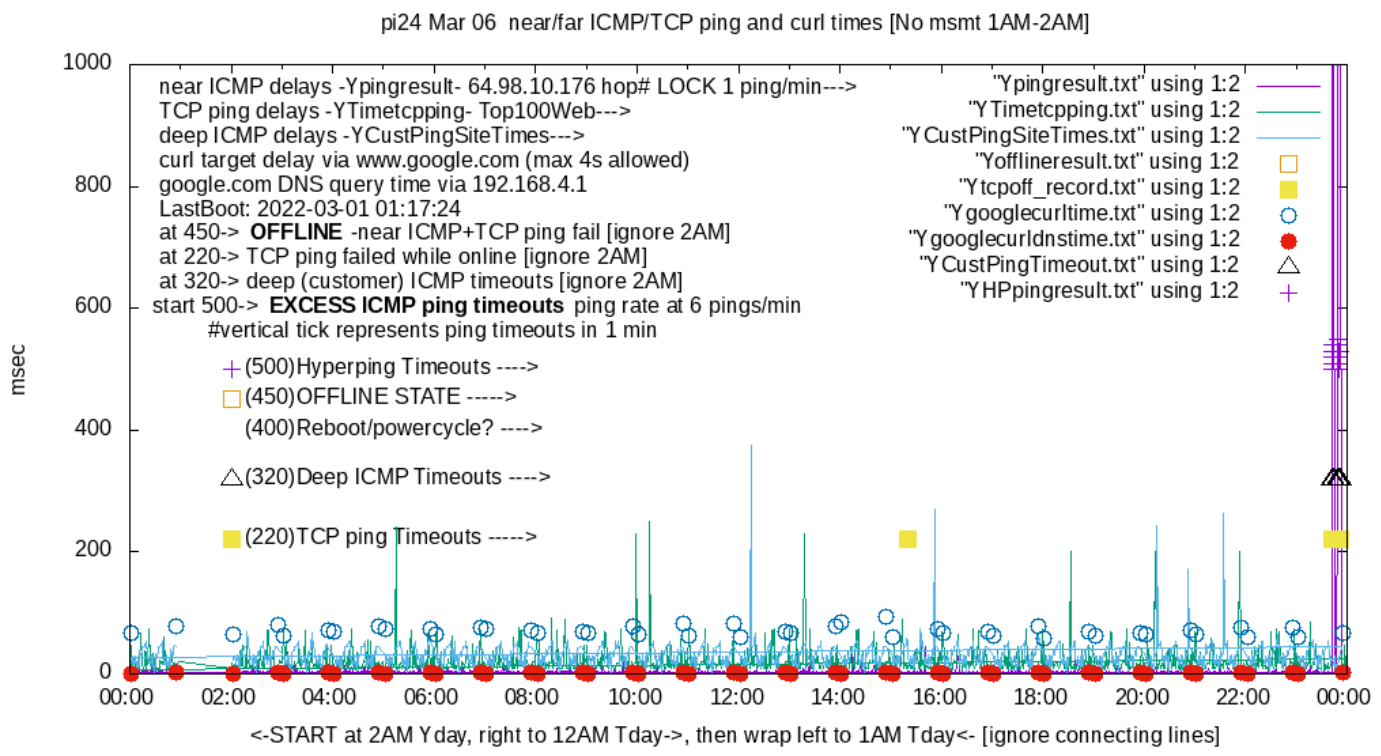
5. I have added scripts to tag reboots and reboots which bridge midnight, to make the plots more representative.

6. The "findhosts" script seems to have settled down, and is a very useful tool to watch hosts on your network! The script is run at busy time -6:30PM- and quiet time -12:30AM. You can thus track your transient hosts -these two lists are in the daily email. The ones to watch out for are "NEW" hosts, which indicate hosts which have NOT appeared in your network before [for at least 5 days]. Hosts will be declared "persistent" when they are present 8 out of 10 checks over 5 days. Hosts "reappear" when they have gone away and come back within this period. The findhosts script also detects hosts which do not respond to a ping, corraling its MAC address when it appears on the network. There is also an archive of all MAC addresses which have appeared on your network -this is not cleared until cleared manually on the pi web page. Here is a hosts listing in pi3 email as a for example: You can see 70,72 and 74 have reappeared, and disappear the next day [Lucie's guests have probably checked out]. 65, 68 and 254 are the existent-persistent pi, the directTV and the router.

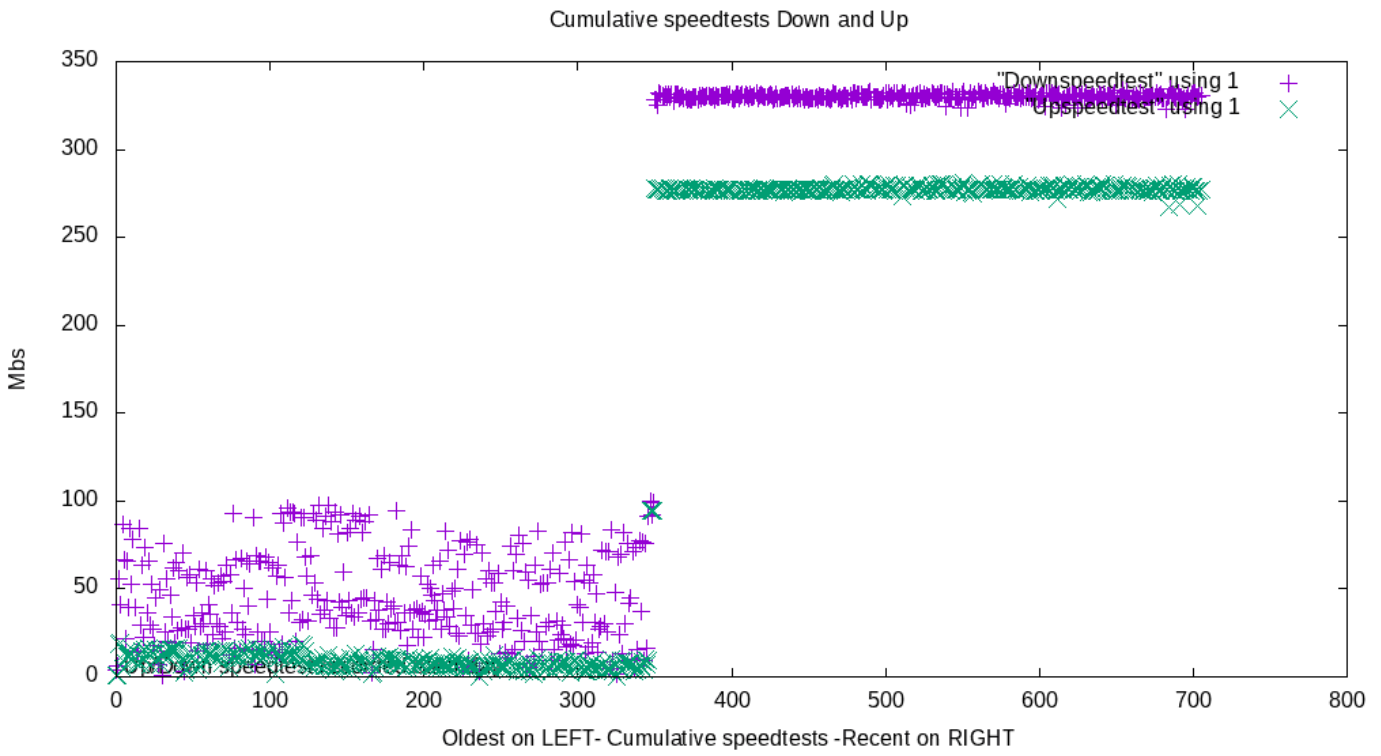
```
Sun Mar 6 02:03:16 EST 2022----->
Persistent IP on network 10of12 days at 02:03:AM: 192.168.254.65
Persistent IP on network 10of12 days at 02:03:AM: 192.168.254.68
IP reappears on network: 02:03:AM 192.168.254.70
IP reappears on network: 02:03:AM 192.168.254.72
IP reappears on network: 02:03:AM 192.168.254.74
Persistent IP on network 10of12 days at 02:03:AM: 192.168.254.254
No NEW or GONE IP hosts since Yesterday at 02:03:AM
Sun Mar 6 18:25:33 EST 2022----->
Persistent IP on network 10of12 days at 18:25:PM: 192.168.254.65
Persistent IP on network 10of12 days at 18:25:PM: 192.168.254.68
GONE host IP on network 18:25:PM: 192.168.254.70
GONE host IP on network 18:25:PM: 192.168.254.72
```

Here is Niel pi24 from Sunday [tho it looks like Ting was doing maintenance at midnight!] Niel has a ton of upstream apple syncing going on, and it is never noticed!



Here is Niel's pi24 speedtest plot showing how is so lucky these days compared to a year ago! [He was Tmobile after ADSL-not shown here]



The last newsletter: <https://imonitorg.com/newsletter9-5-2021.pdf>

Again, I am eternally grateful to my "partners" club for providing a wide range of ISP environments to develop and test these scripts. We have had great fun discussing interesting things that arise on our connections. Am looking forward to Mel's pi9 and Starlink!
John

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<https://imonitorg.com>