Your Raspberry pi (Rpi) imonitor Network Information Page

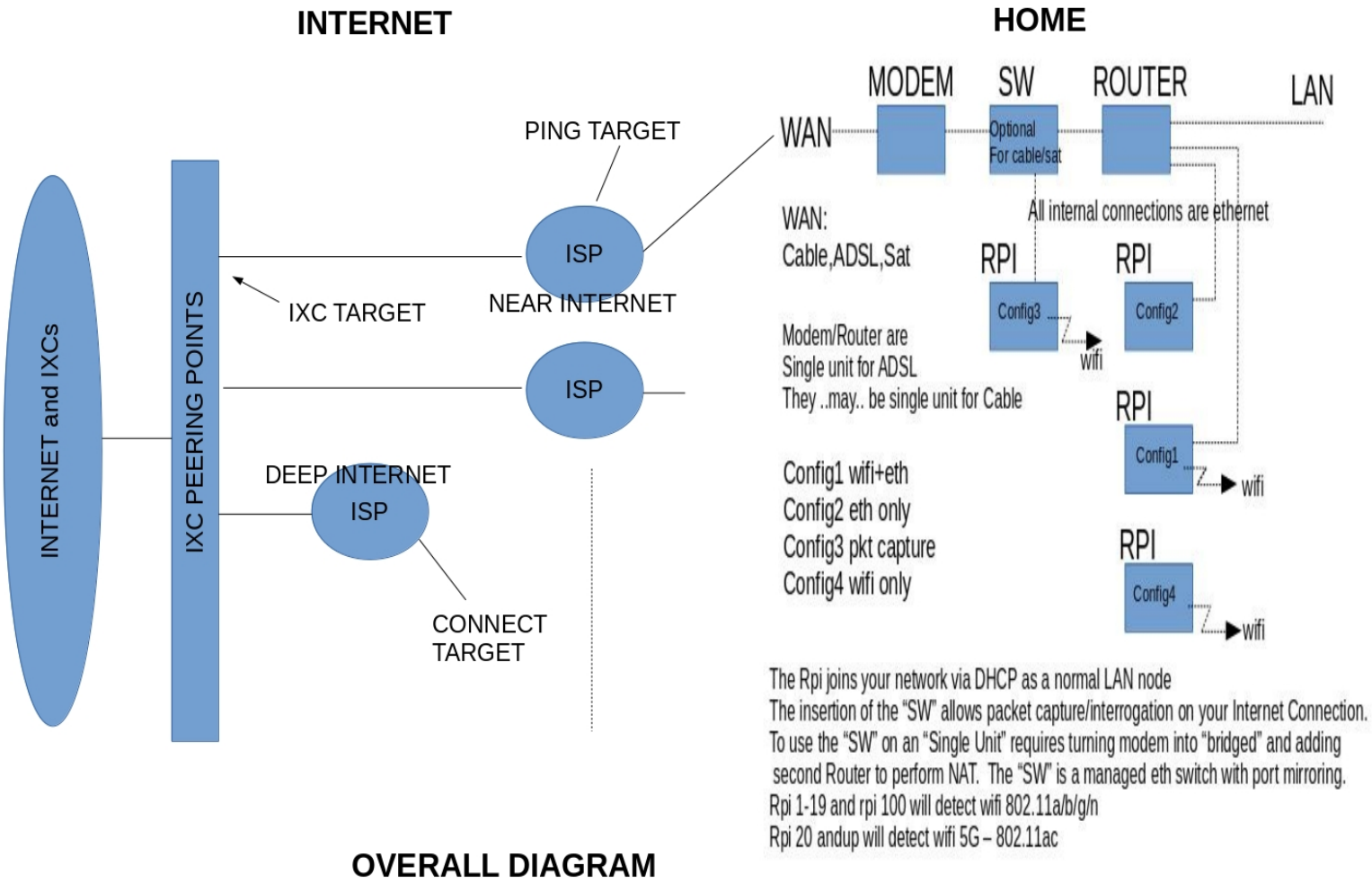
View Snapshots, Network Performance, Historical Performance, plus configure the Rpi

Access your router. Page will refresh once per hour -refresh your page for latest.

Quick Links: Quick Reference Data snapshots Temp Msmts Rpi Configuration Counts Management

For the most accurate results, the rpi [and your router] should be on a UPS

Daily summary email available using gmail relay [your gmail account must be enabled for 2FA]



OVERALL DIAGRAM

Your Configuration 2

Network performance snapshots [refresh page for latest]:

Wed Jul 01 2020 11:05:49 GMT-0400 (Eastern Daylight Time)

Rpi Default path to Internet is via [Ethernet is "eth0" Wifi is "wlan0"] eth0
NOTE: Ethernet is best as default, but wifi ***as an additional*** path is also supported.
NOTE: Tests are performed to the Internet over the Default path, and to the wifi gateway if wifi enabled.
NOTE: This allows testing your in-house wifi, and to the Internet, whether via ethernet or wifi.

Quick Overall Measurements:

The near/deep ICMP and TCP ping delay plots : Yesterday:

Create plot 2AM->now So far today PLOTIT ---------->last plot:

Ping blast to near target-> Quick Test PLOTIT ---------->60 pings/min; last blast:

Yesterday TCP ping delay avg 51.03 msec 1377 of 1380 max in 23 hrs < 80 msec is good

Yesterday deep ICMP ping delay avg to Customer ping sites: 52. < 100 msec is good

-these are best performance indicators along with the speedtest, TCP & ICMP ping delay archives:

Archive plot of TCP & ICMP avg ping delays **Archive plot of Speedtest results**

Detailed Statistics/Measurements:

Last Hour Good ICMP Pings to *near Internet* [59 is no errors] 59

Last Hour Good ICMP Pings to *Your Router* using Wifi [59 is no errors] 59 ***--If wifi enabled and has IP add!***

Last minute ICMP ping delay to *near Internet* 11:04 18.716 Hour:min msec Refresh Page

NOTE: "near" Internet because (automatic) ping target is only 1-5 hops into Internet

Today ICMP ping delays (as of last hour) PLOT **Avg Last Hour** 19.00 PLOT **Avg Yday** 19.98 PLOT

Yesterday TCP connect delays to "connect target" PLOT This will likely be to nearest CDN!!

NOTE: This is TCP connect delay to "Top100" Web Sites is "AUTO" selected

Last minute ICMP ping delay to *Router* using Wifi 4.688 Refresh Page

Today wifi ping delays (as of last hour) PLOT **Avg Yday** 0 PLOT

--If wifi enabled and has IP add!

NOTE: One ping is attempted every min from 2AM to 1AM (23 hrs). Average is Sum-of-delays/#pings.

NOTE: The average ping delay from yesterday includes ALL ping delays. Long ping delays skew the results.

NOTE: All delays are in msec

One year Plot of Offline Times Vertical Scale capped at 120sec. PLOT

IP Host day/day changes

```
NEW host IP on network since last scan [7PM is default scan]: 192.168.254.100
GONE host IP on network since last scan [7PM is default scan]: 192.168.254.68
GONE host IP on network since last scan [7PM is default scan]: 192.168.254.103
```

IP Hosts at last scan

```
192.168.254.58
192.168.254.59
192.168.254.62
192.168.254.63
192.168.254.64
192.168.254.65
192.168.254.70
192.168.254.100
192.168.254.113
192.168.254.118
192.168.254.121
192.168.254.124
```

20 Count at 6PM local

NOTE: cellphones, tablets, wifi gadgets ^ may be hibernating and not discoverable at scan time.

Arp table

```
? (192.168.254.124) at 00:03:7f:55:5c:7c [ether] on eth0
? (192.168.254.145) at 58:cb:52:2f:63:83 [ether] on eth0
? (192.168.254.149) at 70:85:c2:cb:97:a9 [ether] on eth0
? (192.168.254.247) at 40:8d:5c:47:b0:eb [ether] on eth0
? (192.168.254.253) at 00:09:0f:6e:f7:00 [ether] on eth0
? (192.168.254.63) at b8:27:eb:e7:2b:93 [ether] on eth0
amazon-48f31398d (192.168.254.130) at cc:9e:a2:21:0a:bc [ether] on eth0
amazon-4b377c566 (192.168.254.68) at 7c:61:66:99:71:95 [ether] on eth0
amazon-4b6f9ffd5 (192.168.254.62) at 9c:5a:44:a1:f3:b4 [ether] on eth0
amazon-93f3dcfa9 (192.168.254.103) at fc:a1:83:2f:e7:5a [ether] on eth0
amazon-9c739f3aa (192.168.254.131) at cc:f7:35:03:c4:14 [ether] on eth0
android-9813cda88b979473 (192.168.254.56) at dc:44:b6:66:5b:06 [ether] on eth0
```

Clear

NOTE: this should accumulate all devices that have been on your network until cleared ^.

Services offered by Hosts on network [4AM]

```
HOST: raspberrypi1 (192.168.254.58)
22/tcp open  ssh     (protocol 2.0)
80/tcp open  http    lighttpd 1.4.35
HOST: raspberrypi5 (192.168.254.59)
22/tcp open  ssh     (protocol 2.0)
80/tcp open  http    lighttpd 1.4.35
```

NOTE: This is not an aggressive scan ^. It shows only common ports, and may not discover all service ports

Services day/day changes

```
GONE Host [and/or ?service]: 192.168.254.64
< 80/tcp open  http    lighttpd 1.4.35
NEW Host [and/or ?service]: 192.168.254.65
```

Configuration of Rpi; configure ping, connect and route targets:

Hostname raspberrypi1 **Internet IPv4 address** 68.200.39.147

Internet rDNS 68-200-39-147.res.bhn.net.

Internet IPv6 address 2603:9000:d11d:3709:0:5d8e:7538:ad65 You may not have one!

NOTE: If Router has an IP address, Internet access is OK. "OFFLINE" means no access [up to 15 min delay in reporting]
The DNS Pull Target is used to acquire the Router IP address and rDNS.

Local IP address of Rpi 192.168.254.58 **Internet gateway** 192.168.254.254 **DNS assignments** 192.168.254.254
[up to 1 hr delay in reporting these]
NOTE: If Rpi is wifi only, Local IP and Local Wifi IP are the same, and ***Internet gateway is Wifi gateway***.

Local Wifi IP address of Rpi **Wifi gateway**

Wifi State ACTIVE **SSID if subscribed:** NONE SECURED
NOTE: The Local and wifi parameters are ***acquired*** from your Router via DHCP.
A wifi interface may be ACTIVE, but not participating - it has no IP address.
Wifi Networks (cells) visible at Rpi

```
wlan0     Scan completed :
          Cell 01 - Address: 38:35:FB:78:9D:96
                    Channel:6
                    Frequency:2.437 GHz (Channel 6)
                    Quality=70/70  Signal level=-23 dBm
                    Encryption key:on
                    ESSID:"MySpectrumWiFi90-2G"
                    Bit Rates:1 Mb/s; 2 Mb/s; 5.5 Mb/s; 11 Mb/s; 6 Mb/s
                              9 Mb/s; 12 Mb/s; 18 Mb/s
                    Bit Rates:24 Mb/s; 36 Mb/s; 48 Mb/s; 54 Mb/s
                    Mode:Master
                    Extra:tsf=0000000000000000
```

Look for SSID's you don't recognize; make sure encryption key is on for imp cells. Reference [opens in new page]
Raspberry Pi1-19 [pi3B] are NOT capable of detecting 802.11ac -sometimes called 5G- wifi networks!
Raspberry Pi20-> [pi3B+, 4B] will detect 802.11ac

NOTE: Ping, Connect and route target values are configurable. Enter new value ->submit ***..and check!***

Current ICMP Ping Target 72.31.3.97
Ping Target is configurable, but reverts to automatic at 2AM, using first pingable IP starting at hop #5,#4,#3 ....
LOCK to preserve it, otherwise, AUTO resumes next 2AM. The default "AUTO" hop to ping is #5.
Enter New ICMP ping target - You MUST enter a value if you wish to override AUTO, and LOCK to preserve it.

12.250.24.50 Submit [choose one important to you] [Effective Beginning next hour]

The ICMP Pings use IP address only [no DNS lookup], sent at "Interval" and ping declared fail after "Timeout Interval"

Current ICMP Ping Lock State AUTO "LOCK": fixed ping target, "AUTO": return to auto determination at 2AM
Enter New ICMP ping lock state - click "submit" to accept default "AUTO" and default hop #4

AUTO Submit [AUTO is suggested - Effective Beginning next hour][Enter "LOCK" or "AUTO"]

Current TCP connect/ping Target www.google.com
Enter New TCP connect/ping target -click "submit" to accept default

www.google.com Submit [default is suggested alt: www.msftncsi.com] [Effective next minute]

The TCP connect/ping performs a DNS query using DNS assigned by Router, and connects to "Target."
If "AUTO" is selected below -TCP ping will use Top 100 Web sites. If "LOCK" is selected below -entry above is used
The TCP "connect" test always uses the entry above.

Current TCP Ping Lock State AUTO "LOCK" -fixed TCP ping target, "AUTO" -use top 100 Web sites
Enter New TCP ping lock state - click "submit" to accept default "AUTO"

AUTO Submit [AUTO is suggested - Effective Next minute][Enter "LOCK" or "AUTO"]

ICMP ping and TCP connect/ping attempt Interval (msec) 1000 The "attempt" interval is fixed at 1 sec.

ICMP ping Timeout Interval (sec) 1 [TCP Connect Timeout Interval -used for connect/ping is always 15 sec]
Enter New ICMP ping timeout interval(sec)-click "submit" to accept default

1 Submit [default is suggested - specify 1|2|3|..sec] [Effective start of next hour]

Current target for route determination -Designate East or West Coast IP 222.1.1.1
Enter New Internet route target -click "submit" to accept default

222.1.1.1 Submit

[222.1.1.1 is suggested for West coast -Japan; 90.1.1.1 for East coast -France] [Effective next 1AM]

Current internal scan state - it is not recommended to disable this ON

Enter "OFF" to disable scan, "ON" to enable -click "submit" to accept "ON"

ON Submit [default is suggested] [Effective next 3AM]

DNS Transparent proxy detected? - should be "NO" ->set your own DNS server YES? or Indeterminate

Counts, alerts, scans, archives

Default Path eth0

NOTE: The Raspberry Pi is rebooted at 1AM on 1st of every month. All counts are reset at this time.
NOTE: Boot times and IP address changes are kept for a year.

Last reboot: 2020-07-01 01:17:21

Offline Count since reboot/1st of month 1 **Offline Count Yesterday** 1

Online Count since reboot/1st of month 574 [40710 for 30 day mo]
Online/Offline Count is determined by doing a TCP Connect to "Connect Target" -15sec timeout to declare Offline

Ping Errors today 0 **Good Pings** today 531 [1357 per day] **Good Last Hour** 59 [59 per hour]
Ping Errors are declared when a ping response to the "Ping Target" is not received using timeout interval -default 1 sec

Rpi Rcv Ethernet errors 0 Rpi Rcv Ethernet errors yesterday 0

Rpi boot times (Normal reboot on 1st of month)
```
Start of month reboot
2017-06-01 01:17:27
2017-06-19 17:03:34
2017-06-19 17:03:53
2017-06-20 09:50:33
2017-06-20 10:30:15
```
May represent power outage

Network Interruptions

```
Wed Jul  1 01:10:01 EDT 2020 Now/Back online
```

Date/Event

1AM IP route to Internet

```
HG6Box
072-031-129-117.res.spectrum.com
lo1.tpafl21-vpls1.bhntampa.com
bundle-ether37.tamp20-car2.bhn.net
hun0-1-0-5-tamp20-cbr1.bhn.net
```

```
192.168.254.254
*
72.31.3.5
72.31.7.181
72.31.3.97
```

3AM speedtests this month

```
Wed Jul  1 03:35:01 EDT 2020

   Speedtest by Ookla

     Server: Spectrum - Tampa, FL (id = 17170)
        ISP: Spectrum
```

3PM speedtests this month

OffLine -to Internet- Occurrences

```
08/08/19:12:20 11
08/08/19:12:34 6
08/10/19:09:50 12
08/10/19:12:40 10
08/10/19:16:20 0
08/10/19:17:00 10
```

Date:Time Offline Minutes

ICMP Ping Delays Today

```
02:01 138.380
02:02 31.199
02:03 13.501
02:04 16.252
02:04 13.251
02:05 13.368
```

ICMP Ping Delays Yesterday

```
02:01 18.019
02:02 13.652
02:03 13.098
02:03 13.975
02:04 39.715
02:05 13.807
```

Hr:Min/msec.tenths

1000,2000... entries are timeouts. These are via default path, normally eth0 unless you are using wifi only

Wifi ping delays Today -to the gateway router only **404 - Not** Default path to Internet is via `eth0`
Only applies if Rpi participates in wifi (has key/passwd0 and has an IP address.

Today (CDN) TCP visits

```
02:00 22.000 EDT  forbes.com (151.101.194.49)
02:01 53.000 EDT  mapquest.com (52.1.17.55)
02:02 52.000 EDT  nih.gov (54.235.145.223)
02:03 25.000 EDT  gamepedia.com (104.27.139.186)
02:04 62.000 EDT  yahoo.com (72.30.35.9)
02:05 45.000 EDT  healthline.com (99.84.214.123)
```

"Typically" Content Delivery Network appearances of the Top 100 Web Sites. ^

Today Deep ICMP visits

```
02:15 15.838 72.31.3.97
02:16 55.517 4.68.63.117
02:17 32.090 209.120.133.25
02:18 55.171 68.86.92.121
02:19 15.384 72.31.3.97
02:20 70.241 207.44.127.133
```

These are ping targets of member Rpis, thus likely to be "deep" for this Rpi. ^ "1000" means not pingable

Latest Internet Scan of your IP address. 5AM Sat-> scan Note the date!
This is current data only if STANDALONE is "OFF"-> NOTE: not available for generic pi

```
Starting Nmap 5.51 ( http://nmap.org ) at 2020-06-27 05:02 EDT
Nmap scan report for 68.200.39.147
Host is up.
All 1000 scanned ports on 68.200.39.147 are filtered
```

Latest Internal Network Scan [Internal scan must be enabled above]
NOTE: This is the full scan report using nmap, not the short version above

```
Starting Nmap 6.47 ( http://nmap.org ) at 2020-07-01 03:58 EDT
Nmap scan report for raspberrypi1 (192.168.254.58)
Host is up (0.0012s latency).
Not shown: 998 closed ports
PORT   STATE SERVICE VERSION
```

Previous Internal Network Scan [Internal scan must be enabled above]

```
Starting Nmap 6.47 ( http://nmap.org ) at 2020-06-30 03:58 EDT
Warning: 192.168.254.63 giving up on port because retransmission cap hit (6).
Nmap scan report for raspberrypi1 (192.168.254.58)
Host is up (0.00082s latency).
Not shown: 998 closed ports
```

Shodan Scan [Internal scan must be enabled above] [Shodan scan here]

Current month plot archive Plot is calculated at 1AM for day BEFORE date on file.
Wifi (wpingresult), ICMP (pingresult), TCP (TCPpingtime), BOTH (Both TCP/ICMP), Temp (deg F) [scroll down]
"previous" will have previous plots - one year of archives
Browser "Back arrow" to go back to list of plots.

Index of /plots/

Name	Last Modified	Size	Type
Parent Directory/		-	Directory
previous/	2020-Jul-01 01:07:02	-	Directory

lighttpd/1.4.35

Current month mail/shodan/port scan archives Scan at ~4AM on hosts determined at 7PM previous day.
"previous" will have previous daily email and port scans - one year of archives
Browser "Back Arrow" to go back to this list.

Index of /mail/

Name	Last Modified	Size	Type
Parent Directory/		-	Directory
previous/	2020-Jul-01 01:07:02	-	Directory
localnmapJul01.txt	2020-Jul-01 04:02:19	15.6K	text/plain
portreportJul01.txt	2020-Jul-01 04:37:19	2.4K	text/plain
shodanJul01.html	2020-Jul-01 04:02:19	5.9K	text/html
svcchangesJul01.txt	2020-Jul-01 04:37:19	0.1K	text/plain

lighttpd/1.4.35

Configure mgmt access; email settings

NOTE: Management/email is only available for subscribed rpis. Contact: jdloop@johnloop.com
NOTE: See below "Send email using your gmail account as a relay" if you are STANDALONE/no mgmt

DNS Pull Target -used for IP address determination myip.opendns.com

Mgmt Server johnloop.com Mgmt Email jdloop@johnloop.com

Mgmt Enable is: ON Mgmt Access State is currently: ACTIVE

Click "submit" to accept default "ON" - or Temporarily turn off Mgmt Access-> enter "OFF"

ON Submit ["ON" suggested][Effective next 15 min interval]

Only works if Mgmt Disable [STANDALONE] is OFF *->reverts to "ON" at next 1:45AM*

Mgmt Disable [STANDALONE] mode is currently: OFF

Permamently turn on Mgmt Disable [STANDALONE] mode - you MUST enter "ON" and "submit"
If your rpi is subscribed, Click Submit->to restore mgmt access

OFF Submit [Enter "ON" for STANDALONE][Effective next 15 min interval]

NOTE: "OFF" is suggested ->click to submit. I may ask you turn STANDALONE "OFF" occasionally for updates.
NOTE: I will have NO access to your RPI if Mgmt Disable [STANDALONE] is "ON"

Daily Email is currently: YES Daily email includes the weekly email on Sat (all 7 days)
Enable Email -click "submit" to accept default "YES" [or enter "NO" or "OFF"]

YES Submit [Enter "YES" for Daily email, "NO" for Saturday Email, "OFF" for no email]

NOTE: "OFF" means no alerts as well as no daily/sat email!

Presently configured customer email for daily email, alerts: pccitizen@gmail.com
Enter new customer email - You MUST enter a valid email address [it is not verified], and then click "submit"

sample@gmail.com Submit [Enter customer email in proper format sample@gmail.com e.g.]

Email on Internet IP address change: YES
Enter YES or NO for email notification -click "submit" to accept default YES

YES Submit [YES is suggested] [Effective next 10 min]

Email notification for IP address change is useful if you have mobile apps/etc needing access to your home IP
It is useful to indicate ISP problems, or simply indicates an IP address renew by the ISP.

Send email using your gmail account as a relay to an [ultimate] email address [which can also be gmail]
You must enable this to rcv email if you are "STANDALONE." See above.
Enable gmail as a relay **2FA must be enabled** [enter YES or NO. Default is NO]
Daily status email and plot will be delivered at 1:15AM each day -representing yesterday.

Current gmail relay Enable State: YES

NO Submit [YES or NO, default is NO]

Current gmail account: pccitizen@gmail.com
Specifiy your gmail to account use as mail relay:
Submit [youruserID@gmail.com]
You must obtain a 16 byte password from your gmail account via "app password"
Authorization 16 byte key obtained from your gmail account:
16 character google app password Submit

Ultimate email addresses to send to [can also be your gmail account]:

Current ultimate email addresses: jdloop@johnloop.com
Submit [username1@domain1 username2@domain2]1 or 2 addresses.

If your rpi is subscribed to johnloop.com, you can actually enable both methods.
The subscription will pull additional info about your ISP connection into the email

Imonitor reference -opens in new tab

Internet Packet Capture tool [..in development] -opens in new tab

Temperature Measurements:

Temperature Sensors Presence/State: ACTIVE

Submit [Punch to get plot for Temps to current ..under development]

Temp Sensor 1: 26.687 C Time degF: 11:05 80.036 TDay: 26.750 C
26.687 C
26.687 C Yday Avg: 27.20 PLOT

Temp Sensor 1 Down Limit: 11 Enter new Temp Sensor 1 Down Limit email trigger (degC min 1):

1 Submit [default is suggested: 1degC is 34degF]

If temp down limit triggered, an email is sent every 15 minutes, for 10 emails -as long as down limit exceeded.

Temp Sensor 1 Up Limit: 40 Enter new Temp Sensor 1 Up Limit email trigger (degC max 100):

50 Submit [default is suggested: 50degC is 122degF]

If temp up limit triggered, an email is sent every 15 minutes, for 10 emails -as long as up limit exceeded.

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