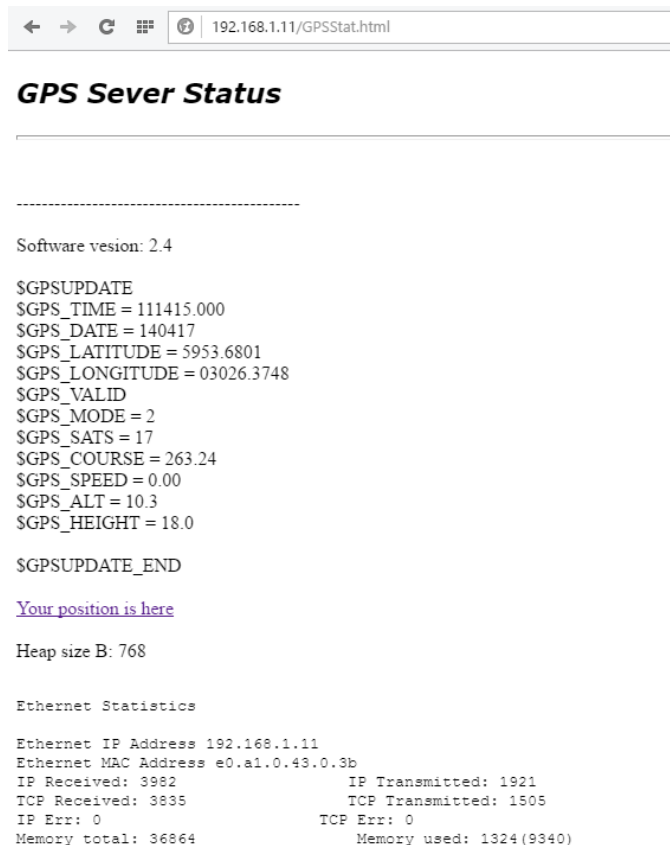


ver. 1.1

1. Basic Concept

The GPS server is based on a small embedded Lwip TCP/IP stack. The system is capable to process http requests on port 80 which is also suitable for a most Web browsers.

Below is a screenshot of the status page loaded into Opera Web browser.



```
← → ↻ ☰ | 192.168.1.11/GPSStat.html

GPS Sever Status
-----

Software vesion: 2.4

$GPSUPDATE
$GPS_TIME = 111415.000
$GPS_DATE = 140417
$GPS_LATITUDE = 5953.6801
$GPS_LONGITUDE = 03026.3748
$GPS_VALID
$GPS_MODE = 2
$GPS_SATS = 17
$GPS_COURSE = 263.24
$GPS_SPEED = 0.00
$GPS_ALT = 10.3
$GPS_HEIGHT = 18.0

$GPSUPDATE_END

Your position is here

Heap size B: 768

Ethernet Statistics

Ethernet IP Address 192.168.1.11
Ethernet MAC Address e0.a1.0.43.0.3b
IP Received: 3982           IP Transmitted: 1921
TCP Received: 3835         TCP Transmitted: 1505
IP Err: 0                   TCP Err: 0
Memory total: 36864         Memory used: 1324(9340)
```

The server sent "GPSStat.http" page being hosted at IP 192.168.1.11

2. Data Communication

To obtain a GPS data the client must send http GET request for the "*GPSStat.html*" page on server's IP address:

GET /GPSStat.html HTTP/1.1

The server will parse only first 17 bytes and respond with a dynamically created web page with GPS data.

\$GPSUPDATE
\$GPS_TIME = 111905.000
\$GPS_DATE = 140417
\$GPS_LATITUDE = 5953.6801
\$GPS_LONGITUDE = 03026.3748
\$GPS_VALID
\$GPS_MODE = 2
\$GPS_SATS = 17
\$GPS_COURSE = 263.24
\$GPS_SPEED = 0.00
\$GPS_ALT = 10.3
\$GPS_HEIGHT = 18.0
\$GPSUPDATE_END

Each GPS field begins with a predefined tokens listed below

1. UTC Time in format 'hhmmss.sss'.

\$GPS_TIME = 111905.000

2. Date in format 'ddmmyy'.

\$GPS_DATE = 140417

3. Latitude in format 'ddmm.mmmm' (degree and minutes)

\$GPS_LATITUDE = 5953.6801

North - Positive value

South - Negative value

4. Longitude in format 'ddmm.mmmm' (degree and minutes)

\$GPS_LONGITUDE = 03026.3748

East - Positive value

West - Negative value

5. Validity flag

\$GPS_VALID if all data are correct

\$GPS_INVALID if there's no valid positioning signal received

6. Receiver Operating Mode

\$GPS_MODE = 2

0: Invalid Fix

1: GNSS mode

2: GPS mode

6: Estimated position (Dead reckoning mode)

7. Number of satellites being used

\$GPS_SATS = 17

8. Detected course in degree

\$GPS_COURSE = 263.24

9. Calculated speed in knots

\$GPS_SPEED = 0.00

10. Altitude in meters in according to WGS84 ellipsoid in meters

\$GPS_ALT = 10.3

11. Height of GeoID (MSL) above WGS84 ellipsoid in meters

\$GPS_HEIGHT = 18.0