Who is needing a (sec) Clock synchronization on the Internet?

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localization
games
cripto-coins
measurements
Where protocols land?

- Absolute
- Secure
- NTP 4
- TSC
- PTP
- GPS
- software
- sic
- hardware

Error: 1s, RTT, 1ms, 1µs, 1ns
sic: working principle

- 1 packet by second
- statistical analysis
- each packet is deferred signed
- frequency (paths asymmetry)
why RTT minimum doesn’t work?

Figure 3: Min RTT error, estimated every 10 minutes along 7 hours.--
how is sic performing?

CDF

<table>
<thead>
<tr>
<th>Buenos Aires (40ms)</th>
<th>Los Angeles (273ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3</td>
<td>14.69</td>
</tr>
<tr>
<td>Q2</td>
<td>11.60</td>
</tr>
<tr>
<td>Q1</td>
<td>9.41</td>
</tr>
</tbody>
</table>

Figure 9: Cumulative distribution function of the MTIE (60s).--
sic: synchronizing Internet clocks

- **secure**: each packet is signed
- **20\mu s of error**: based on traffic behavior
- **frequency**: clock stability
- **client-server**: simple software distribution

clone it! [https://github.com/CoNexDat/SIC](https://github.com/CoNexDat/SIC)

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