

SmokePing, or what happens when running ping becomes an obsession.

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A talk about ...

- being online all the time
- finding ADSL does not work
- proving the problem
- writing a software to automate it
- getting carried away, totally

Effects of long exposure to networked environments

- My files are on other computers.
- Programs run remotely.
- I need to read eMail every 30 minutes
- My screen is a window to the world.
- A machine I am responsible for, suddenly off the net totally kills my efficiency.
- Glad it never happens.

The Joy of ADSL

- Early 2002: ADSL widely available in Switzerland
- 90 CHF / 512 Down / 128 Up - Theory
- Aaargh, but the latency is killing me
- packet drops, disconnects, IP changes
- Surfing is OK, but remote terminal access is not
- Maybe ISDN was not that bad after all

Lets get some numbers

```
ping -I 1 place.no.where
PING place.no.where: 56 data bytes
64 bytes from 129.132.2.1: icmp_seq=0. time=51. ms
64 bytes from 129.132.2.1: icmp_seq=1. time=29. ms
64 bytes from 129.132.2.1: icmp_seq=3. time=80. ms
64 bytes from 129.132.2.1: icmp_seq=4. time=30. ms
^C
----place.some.where PING Statistics----
5 packets transmitted, 4 packets received, 20% packet loss
round-trip (ms)  min/avg/max = 28/47/80
```

Digging into ADSL problems

- A black box that works unreliably
- Changing throughout the day, worst at night
- Is this normal?
- Glad I can hack, so lets have the computer look at this.

Tool Requirements

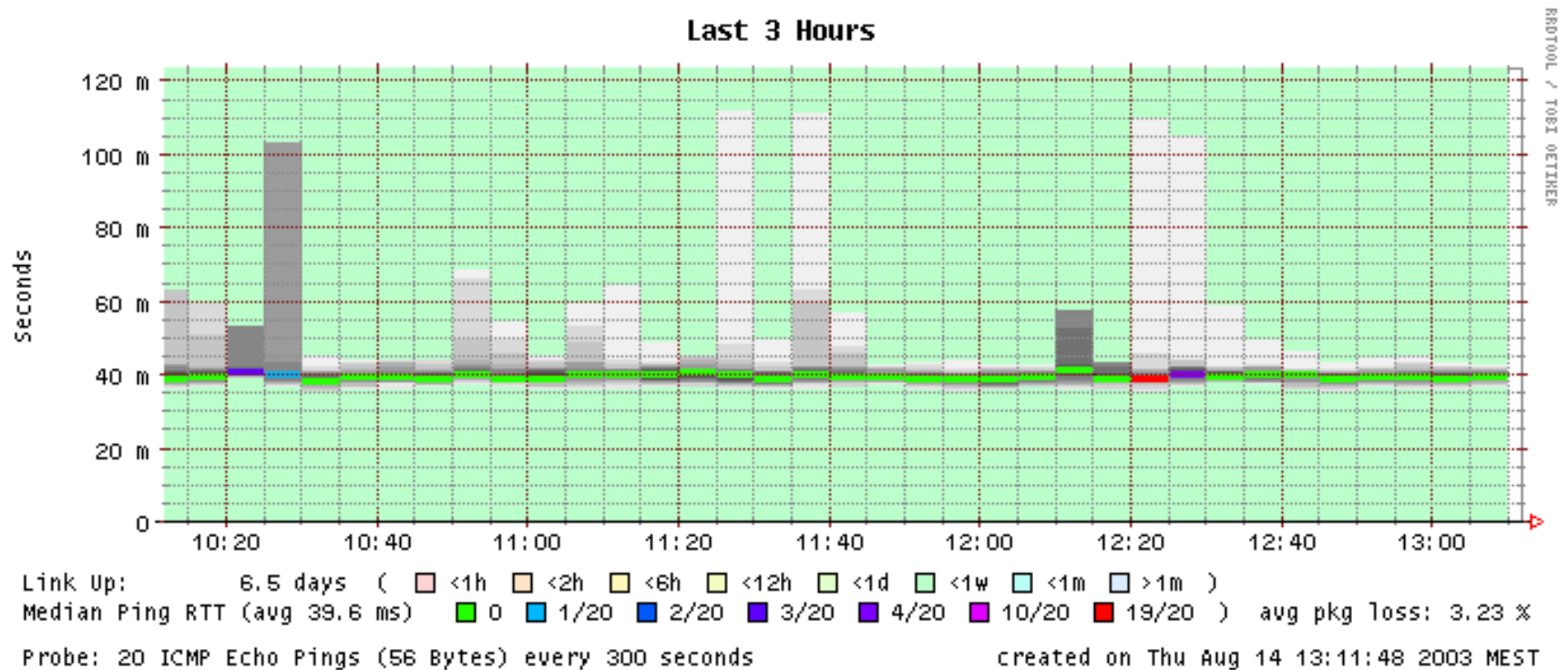
- Monitor my ADSL link latency
- Send multiple pings, calculate median
- Handle changing IP Addresses of ADSL hosts
- Monitor my link “up-time” (IP retention time)
- Web front-end for result presentation
- Template based look for front-end

Some more requirements

- Work on many hosts in parallel
- RRDtool Graphs and longterm logs
- Smoke and line color graphs
- Alert system
- Plug-in architecture for latency meters
- Full documentation
- Publishable under GPL

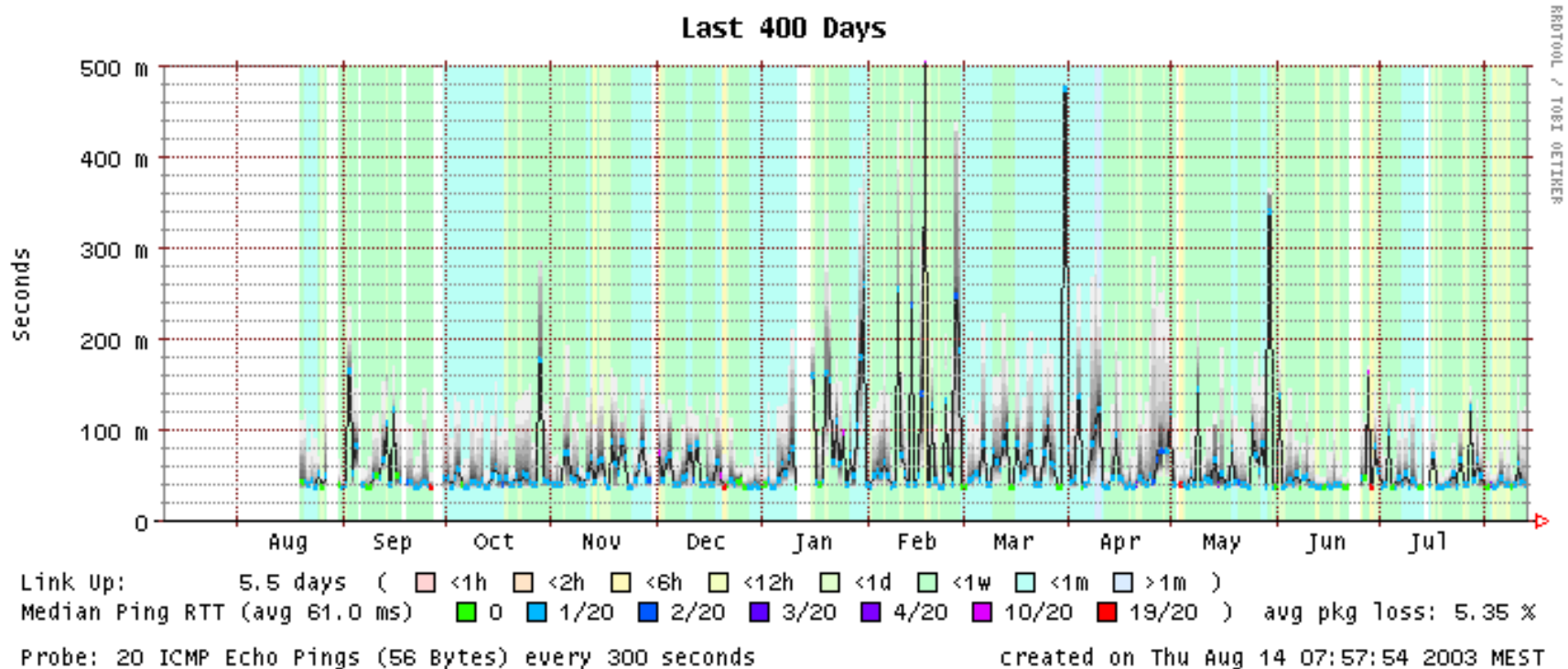
DEMO

What's in a graph (short term)



loss in median color, latency distribution

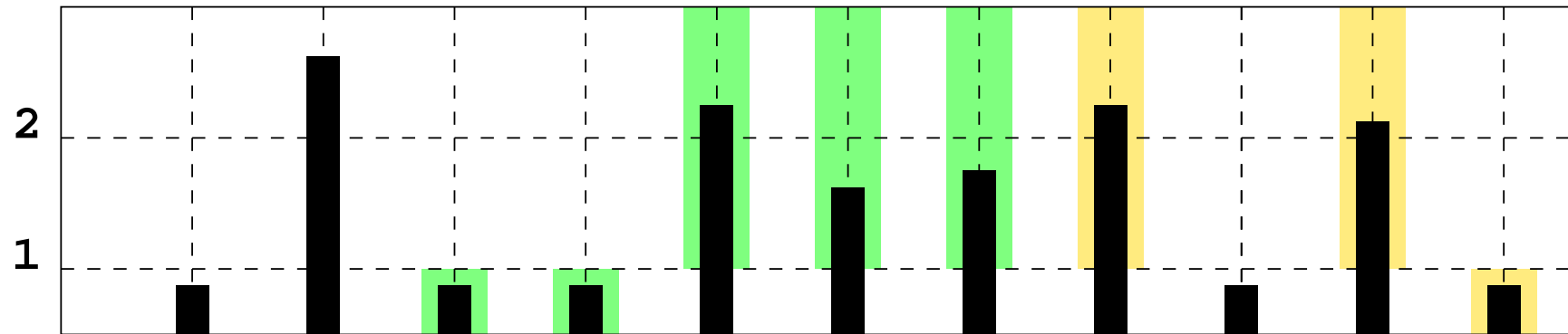
What's in a graph (long term)



IP retention background color, average loss in median color

Have SmokePing look at its own graphs

Pattern matching alerts.



<1 <1 >1 >1 >1

>1 * >1 <1

Pattern Matching Alerts

- Multiple alerts for the same target
- Inherited alerts in a hierarchical target structure
- For packet loss and round trip time
- Flexible length patterns to catch drops
- Send mail or launch external program

SmokePing Probes

- Fping is only the beginning: OO-Plug-in interface for probes
- Currently 17 probes
- ciscoRttMon MIB
- EchoPing (Echo, Http, ...)
- Cisco IOS
- Remote Fping

Writing your own Probe

- Select probing agent
- Select base class (multi target or forking)
- Implement methods: `new`, `ProbeDesc`, `ping` or `pingone`.
- Write POD documentation
- Send me your probe

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SmokePing is available from

<http://people.ee.ethz.ch/~oetiker/webtools/smokeping>
It's GNU GPL OpenSource!

Questions?