

SOFTWARE ENERGY FOOTPRINT LAB

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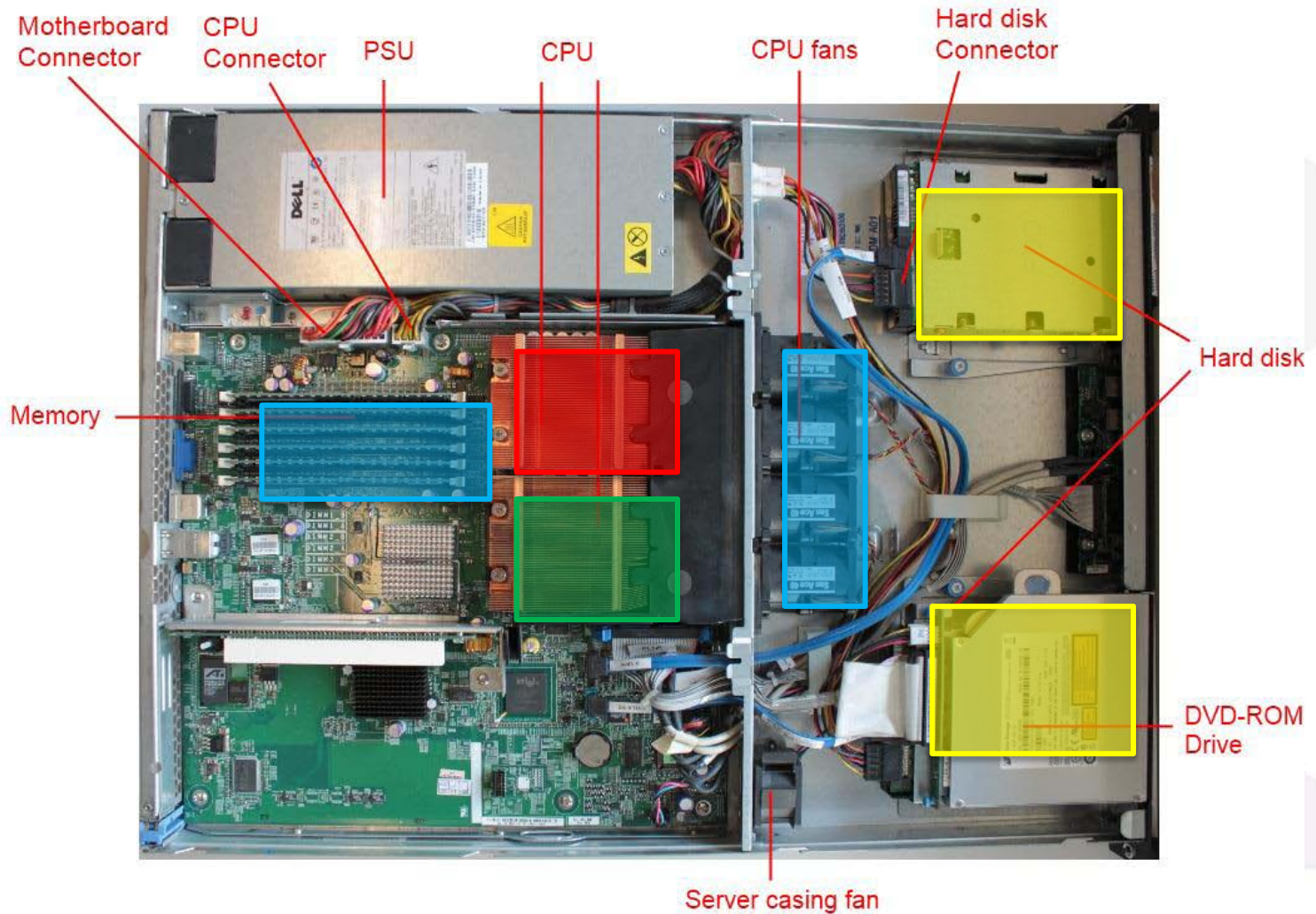
11 october 2012

CREATING TOMORROW



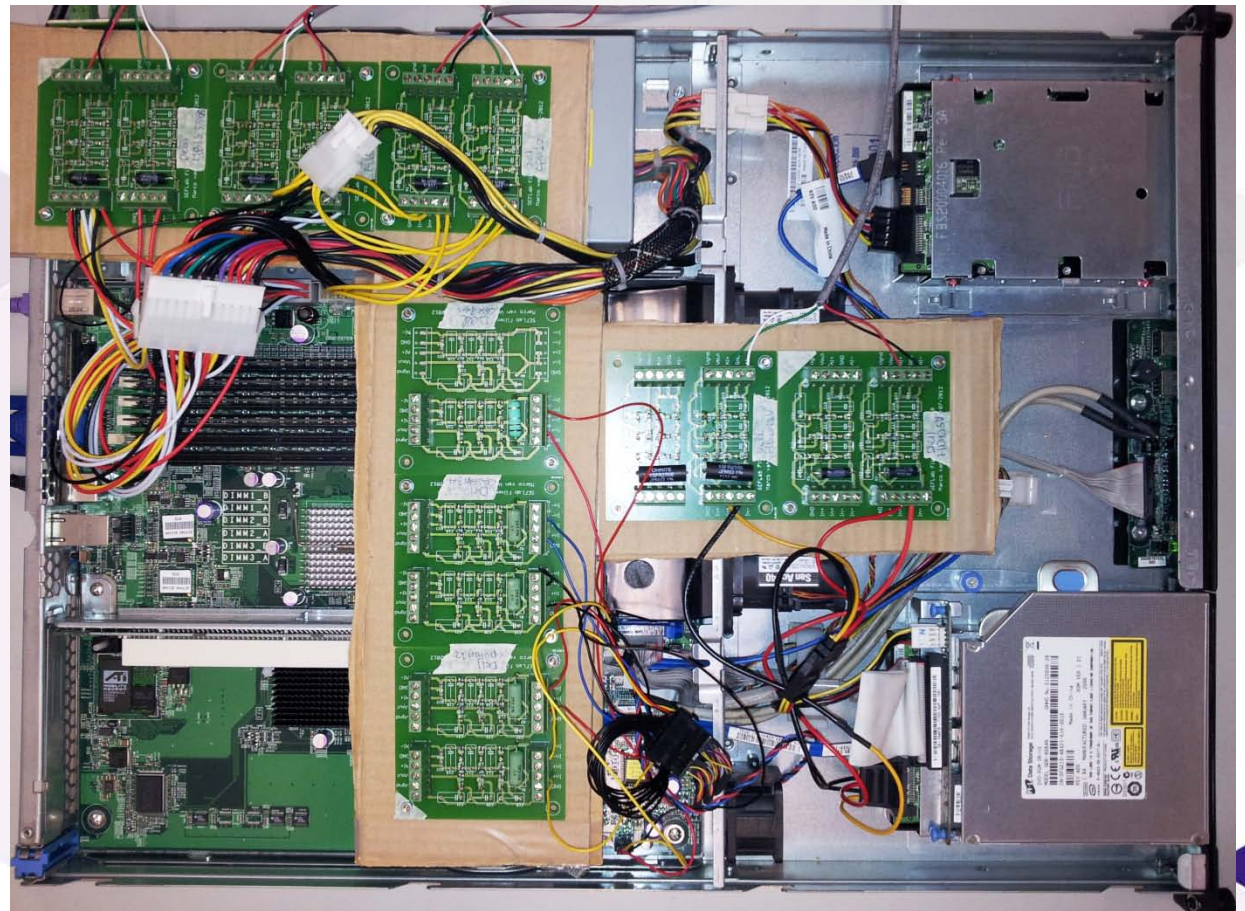
REAL-TIME VOLTAGE MEASUREMENTS

CHANNELS IN THE GRAPH

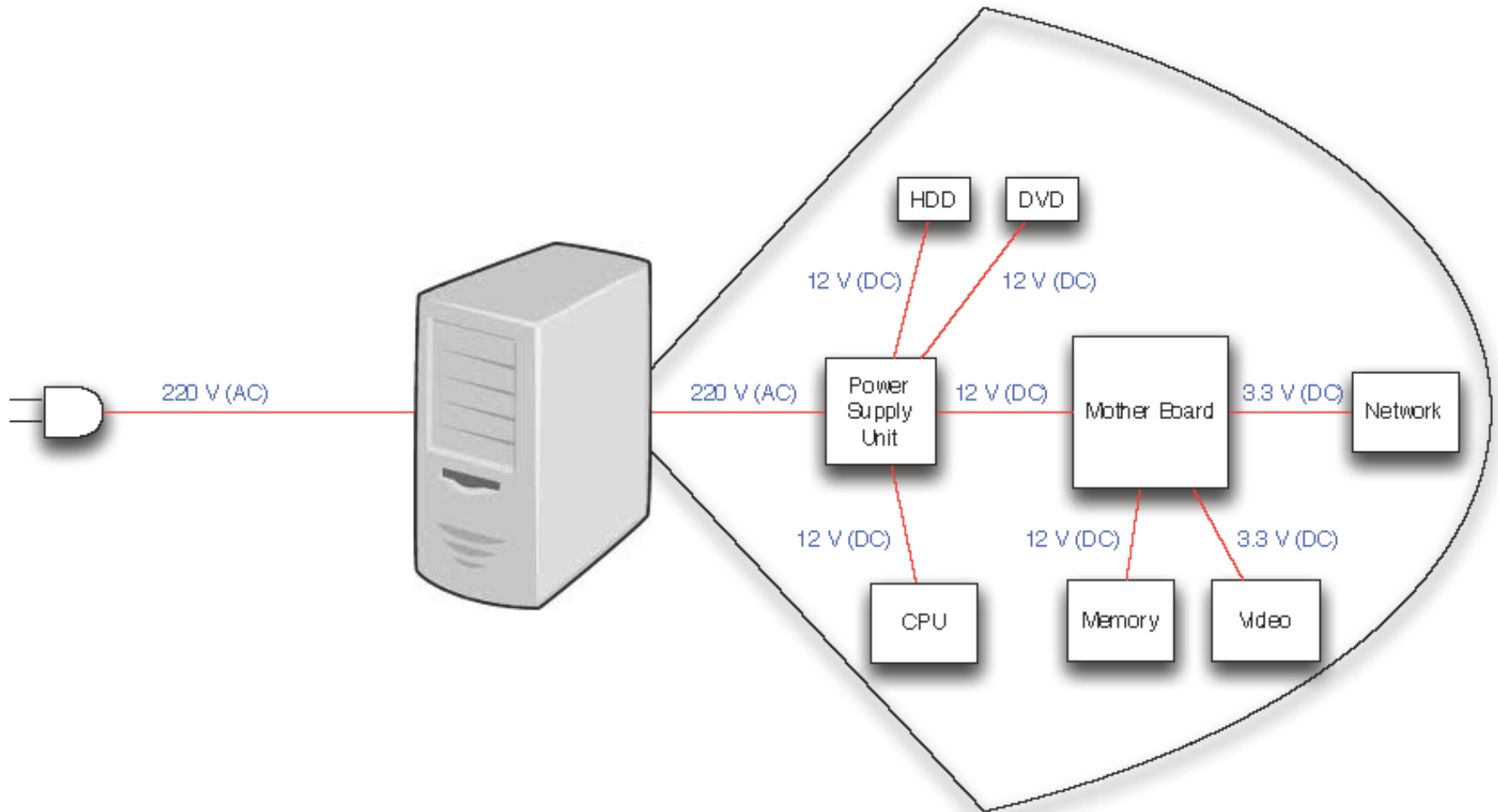


MEASUREMENT METHOD

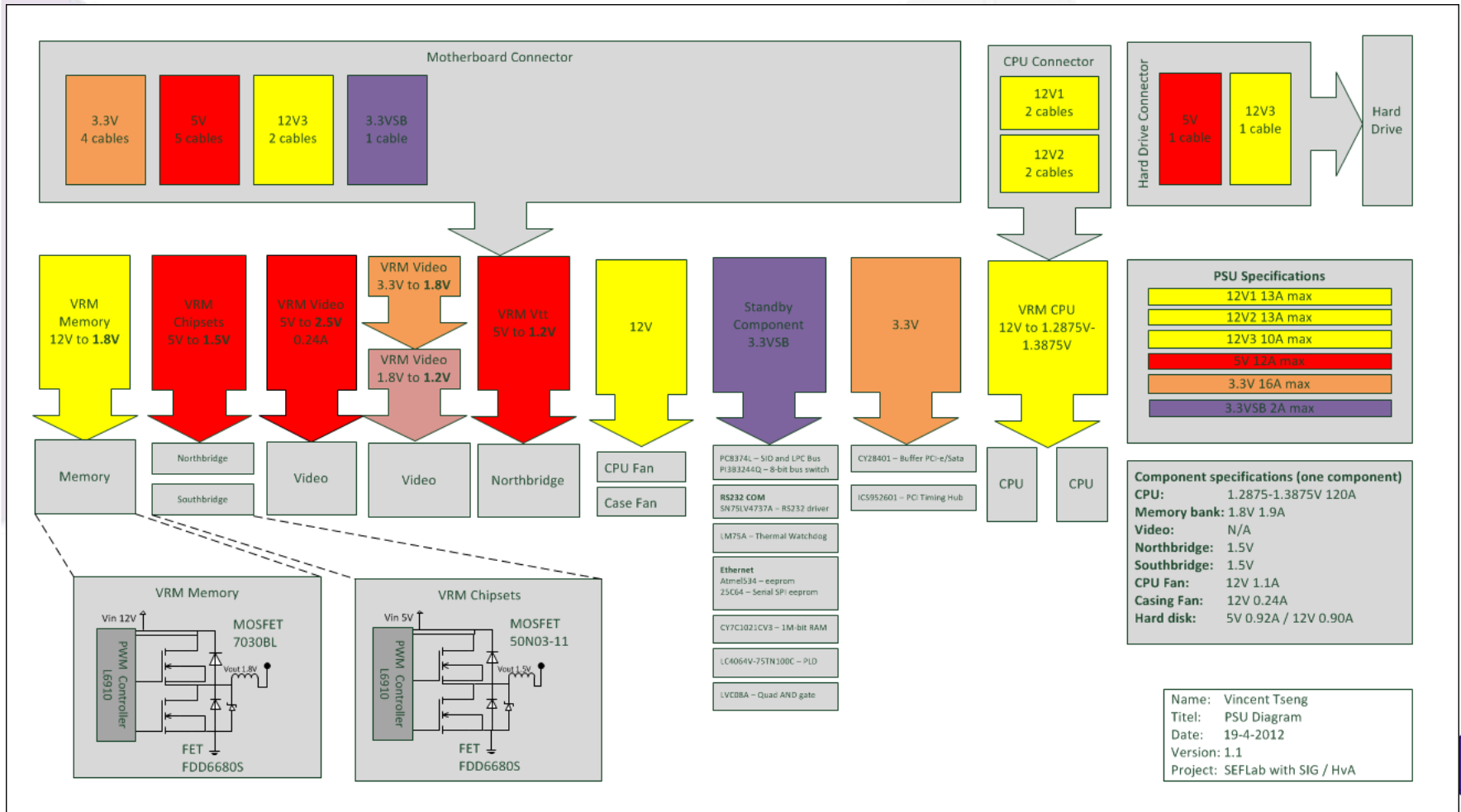
- Shunt resistor
- Differential current measurements
- Filter circuit



MAPPING OF POWERLINES



MAPPING OF POWERLINES (DELL)



EXPERIMENT 1: VIDEO PLAYBACK

Aslo pay attention to the other screen!

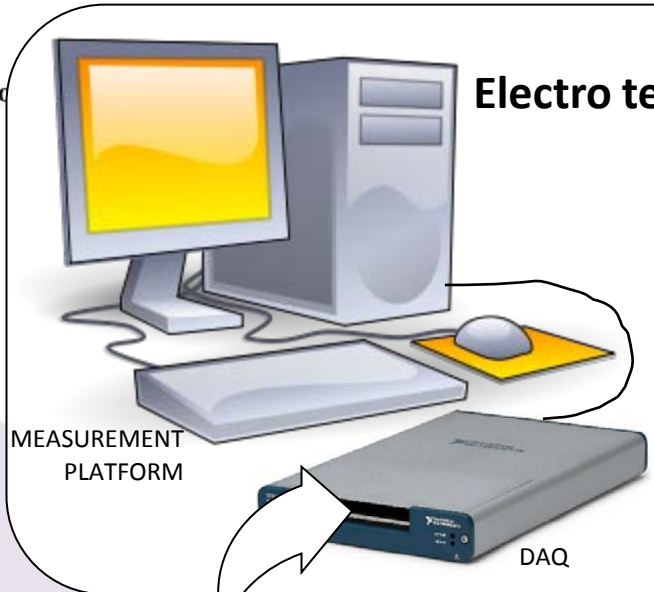
- CPU



<http://youtu.be/wZOVnsLoeOc>

Youtube channel: <https://www.youtube.com/user/SEFLab>

Electro technical engineering



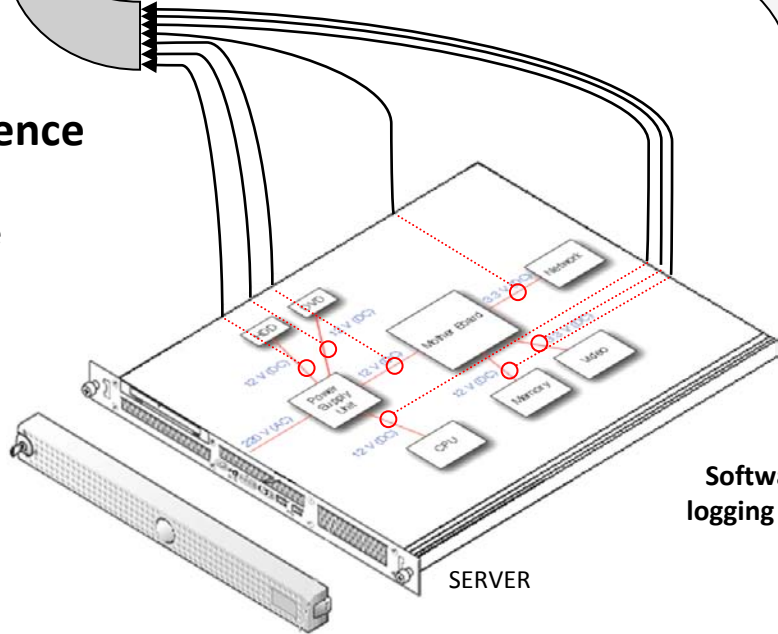
- Measurement setup
- Development
- Data collection
- Multi-server setup

Power usage data

Voltage & current measurements

Computer Science

- Logging performance parameters
- Benchmark software development



Software logging data

E-tech/CS

- Software application testing
- Data processing
- Data visualization



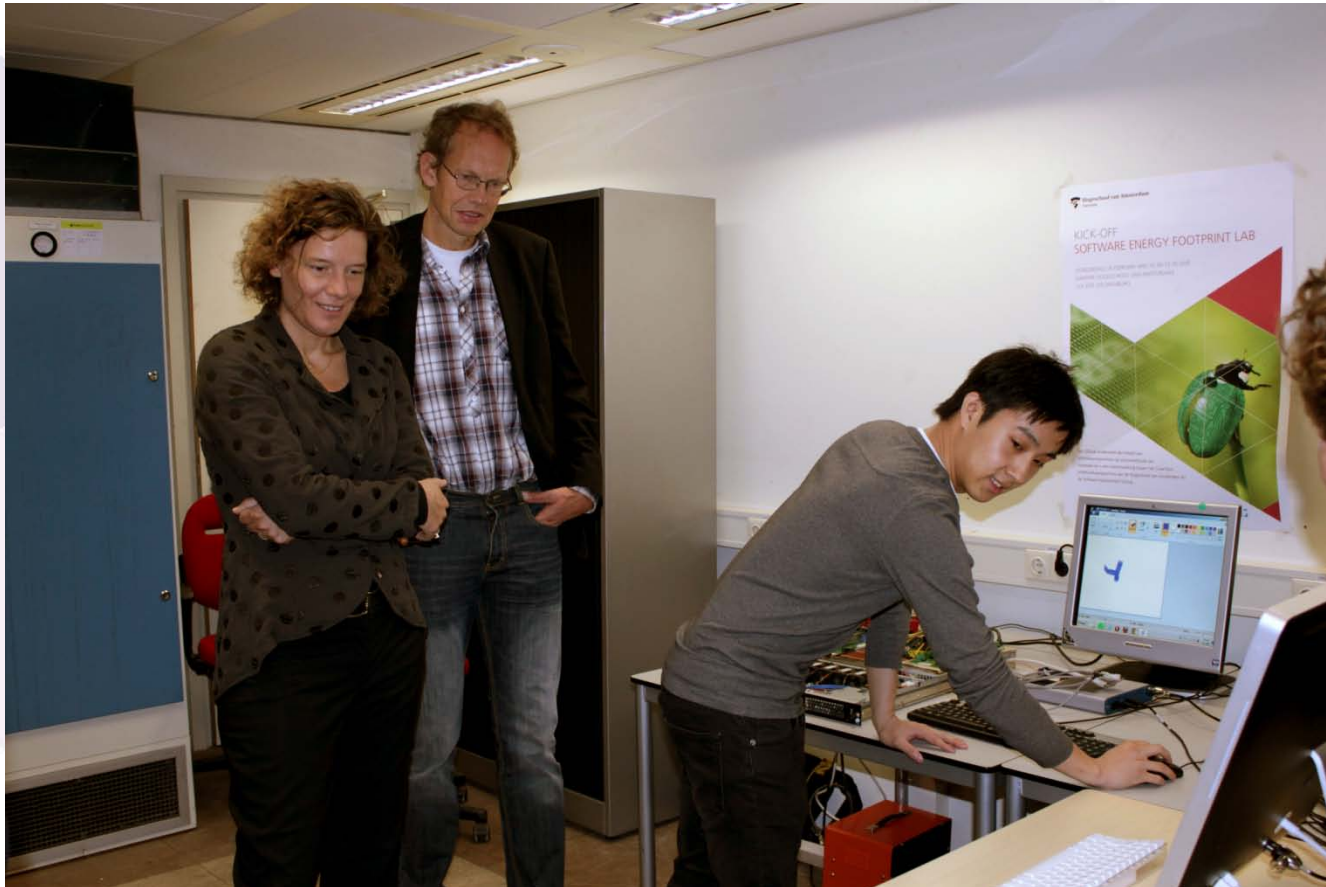
EXPERIMENT 2: DATA COPYING

Pay attention to the other screen!

- HDD


EXPERIMENT 3: PHOTO EDITING

- Mem



EXPERIMENT 4: BROWSER START-UP

- Mem + CPU



EXPERIMENT 4: BROWSER START-UP

- Mem + CPU



BROWSER START-UP TEST

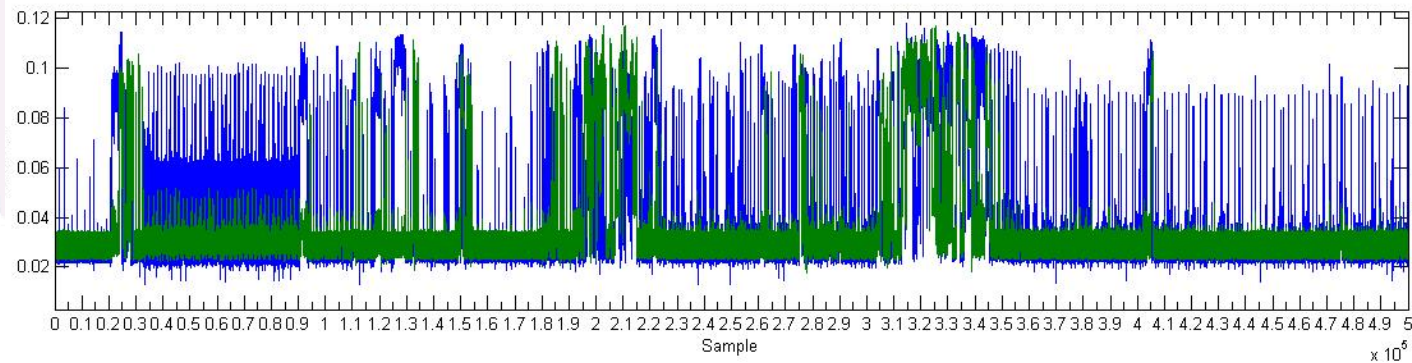
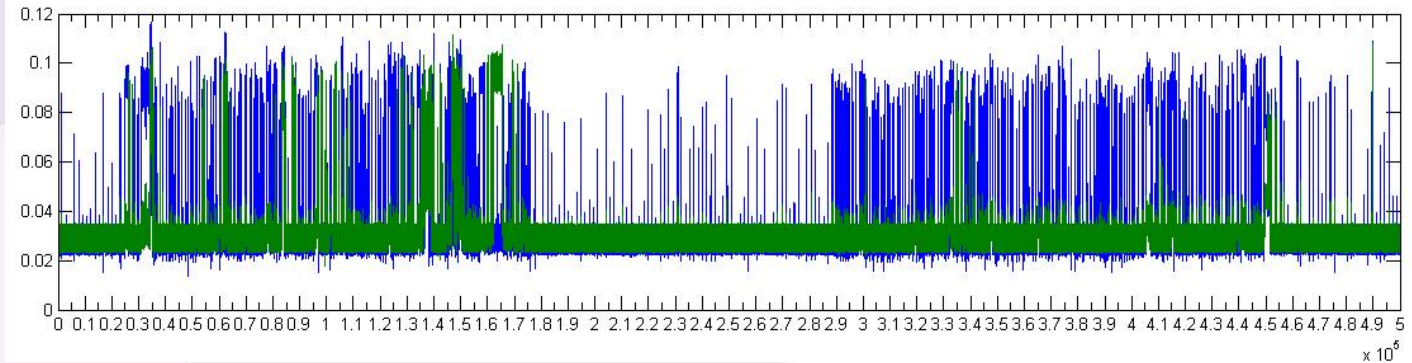
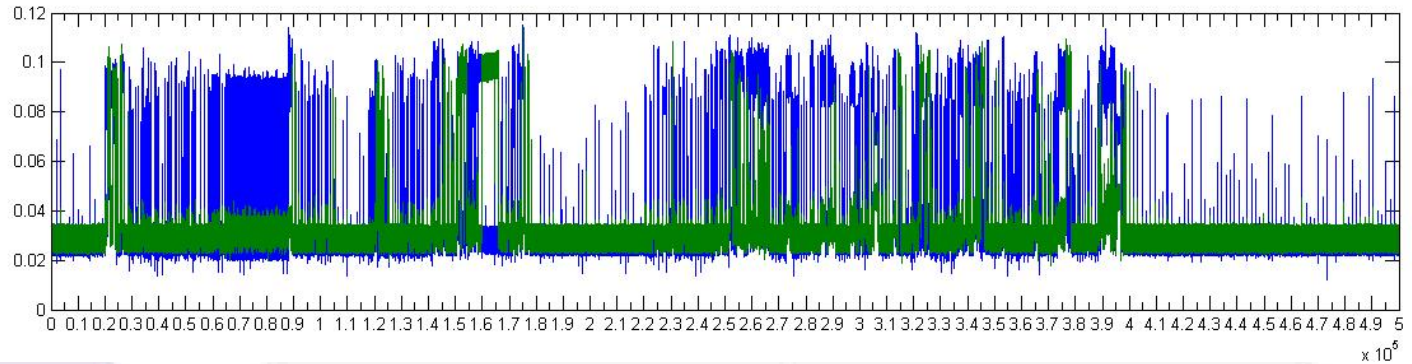
Measured:

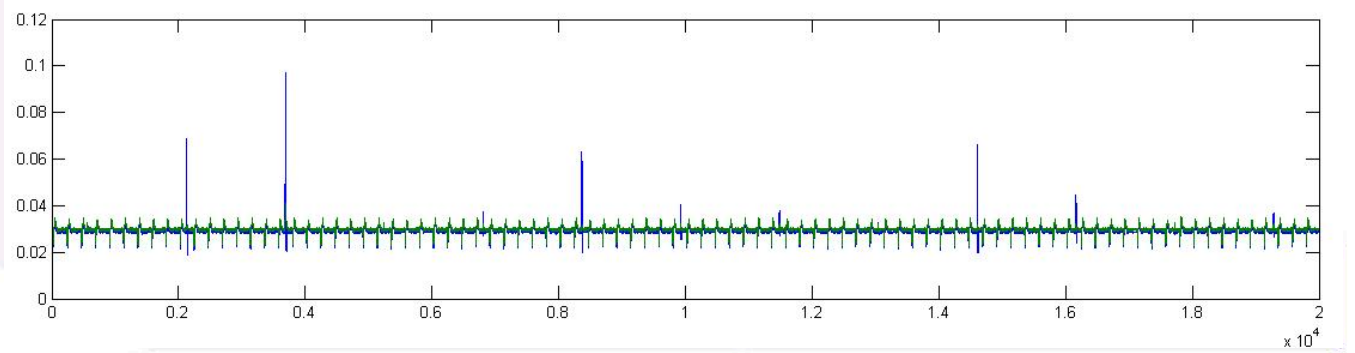
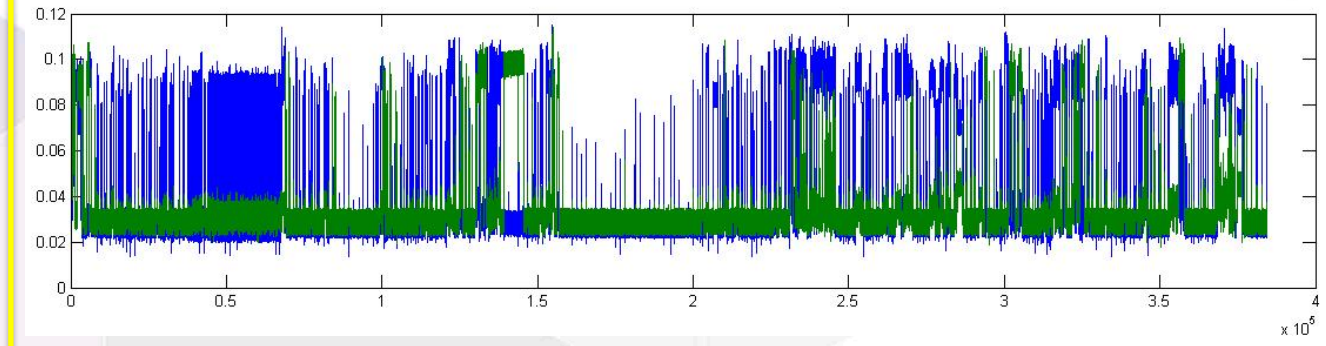
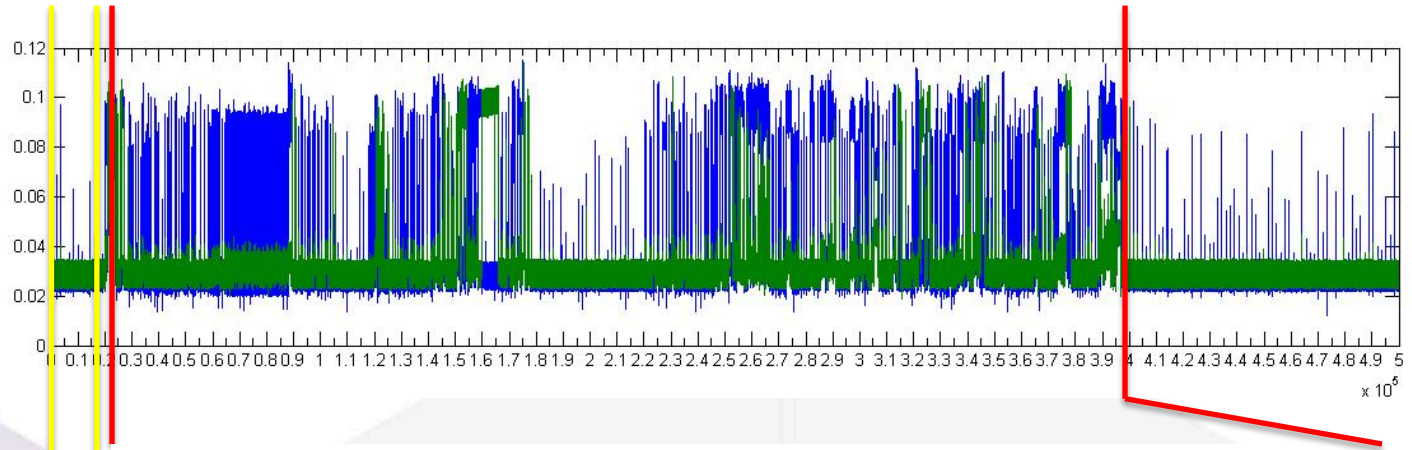
- CPU 1+2 power consumption
- 100.000 samples/second
- First and second start-up

Browsers tested:

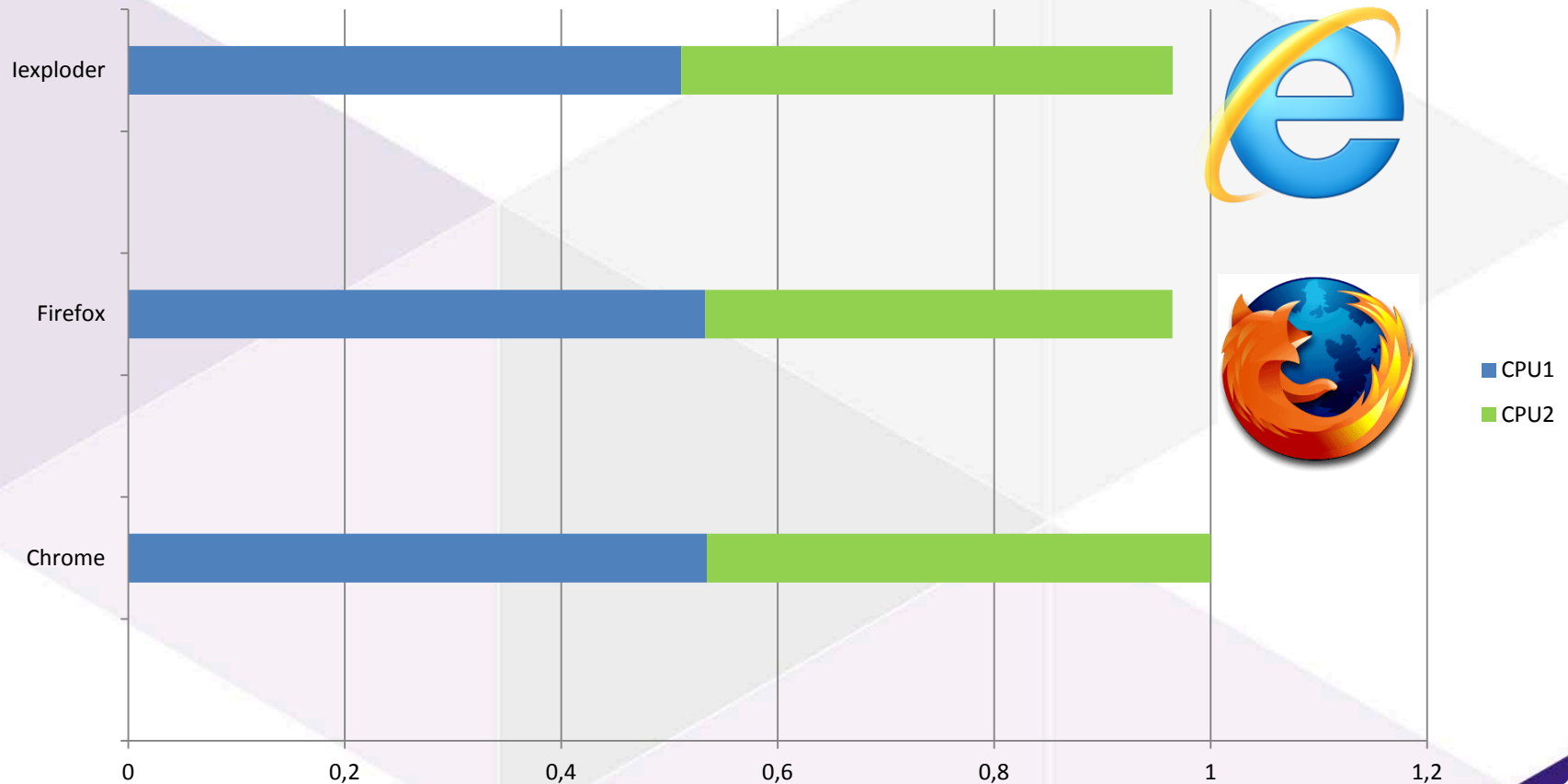


FIRST START-UP

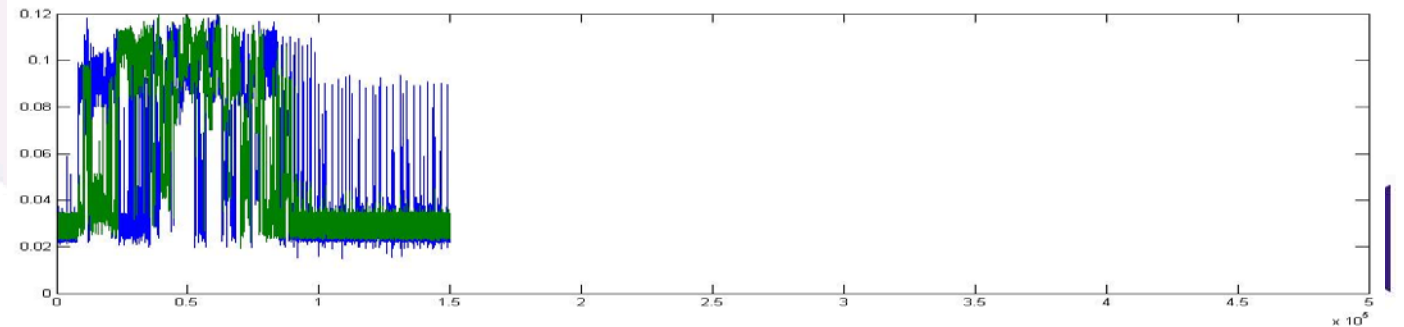
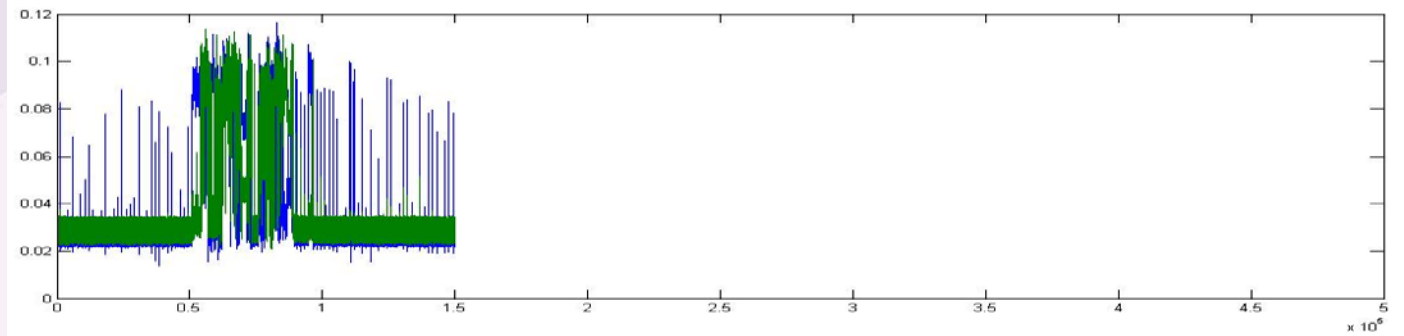
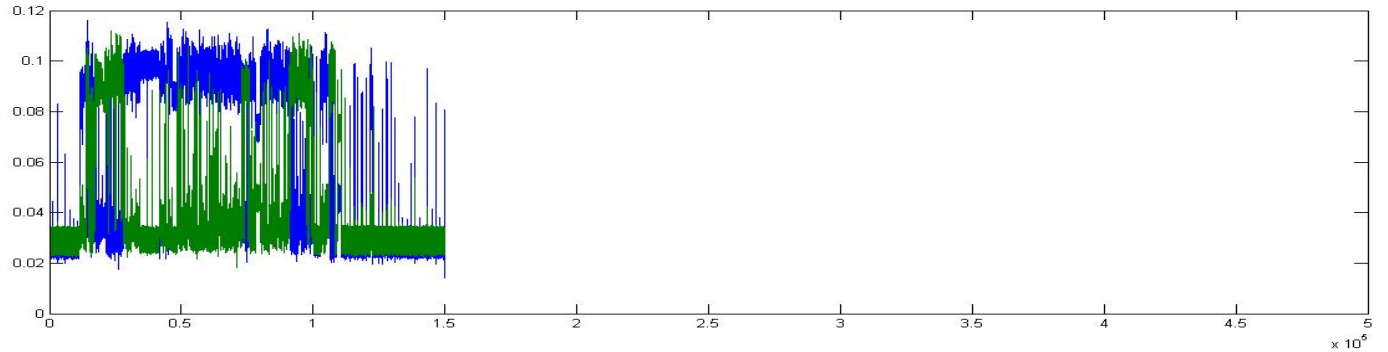




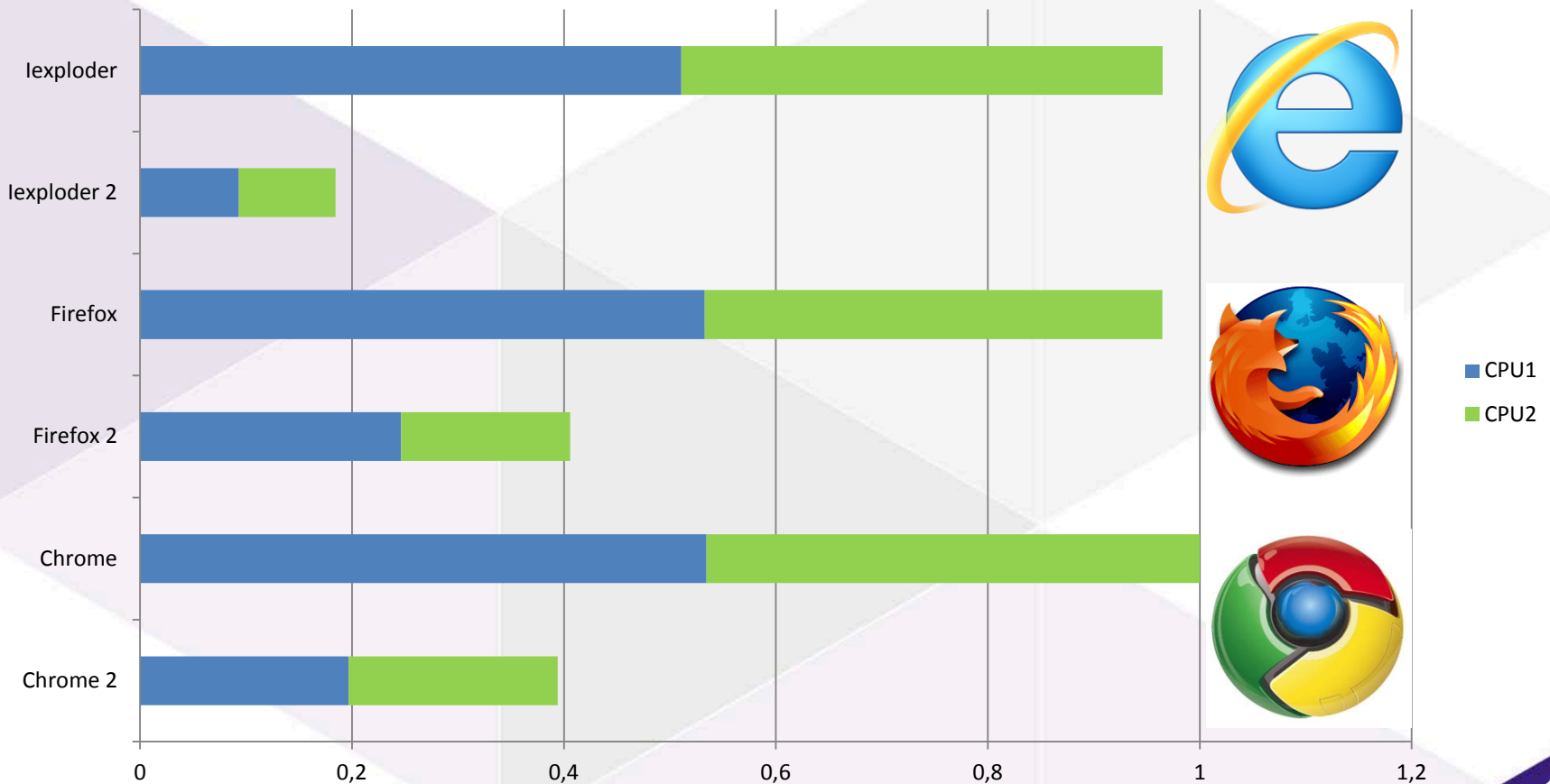
RESULT FIRST START-UP



SECOND START-UP



RESULT FIRST AND SECOND START-UP



QUESTIONS?

CREATING TOMORROW

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