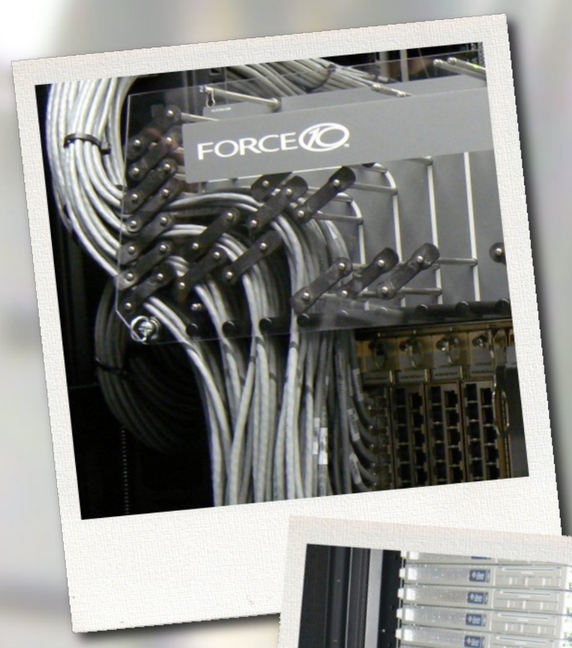
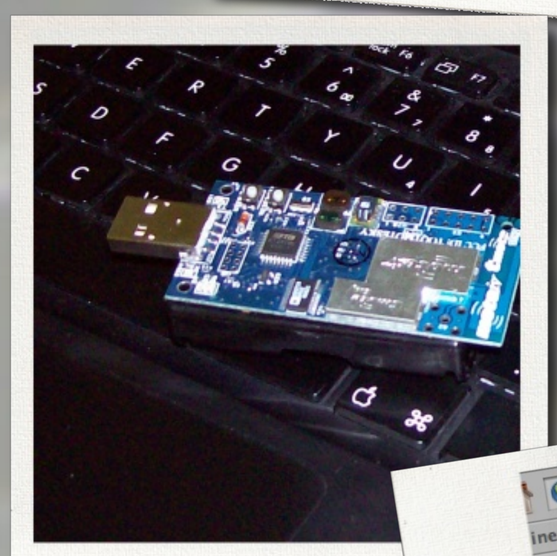
UCL

All too often network research has been confined to simulation, sometimes resulting in an over-simplification of the problem or doubt about the validity of results. The alternative was either very small scale testing using desktop machines, or real-world deployment leading to irreproducible or incomprehensible results. In the networks research group at UCL, we've been working on HEN (Heterogeneous Experimental Network), a testbed to bridge the two: experiments can be large enough to be interesting, but the network environment is still under the researcher's control, leading to a better understanding of what is really going on.



HEN consists of a variety of experimental network nodes of varying capability. Each node has multiple networking interfaces, and is net-booted from a central server, allowing the experimenter to quickly change the operating system running on each node. The backbone of HEN consists of a Force 10 E1200 switch, with nearly 500 high-speed network ports. The switch can be soft-configured using VLANs so that the experimenter can build complex network topologies with ease. The switch is non-blocking, so multiple experiments can run on HEN simultaneously without conflicting with each other. The testbed is accessible remotely both through a command-line and a web-based interface.



The HEN testbed also contains 40 wireless sensors deployed in an office environment spanning an open-plan area and several staff offices.

HEN

Heterogeneous Experimental Network