

AccessionIndex: TCD-SCSS-T.20121208.093

Accession Date:

Accession By:

Object name: Sun Ultra Enterprise 450

Vintage: c.1997

Synopsis: Departmental system that used UPA packet-switched interconnect.

**Description:**

In c.1997 the Dept.Computer Science, Trinity College Dublin, replaced its DECsystem 5830 with a Sun Ultra Enterprise 450 with the packet-switched *UltraSparc Port Architecture* (UPA) interconnect.

The UPA interconnect routed all memory and I/O access transactions via a centralised switch. Devices connected separately to *ports* at 82MHz and at their appropriate bus width. Some ports were *masters* (initiators), others *slaves* (responders). UPA was cache-coherent using write-back MOESI snoopy coherency on 64-byte-wide cache blocks. Write-back and fill transactions could proceed in parallel and independently of each other, and snoop latency could be traded for greater bandwidth.

UPA enabled a wide range of implementations from uniprocessor desktops to multiboard symmetric multiprocessor (SMP) systems. Larger systems extended the interconnect using either the passive *Gigaplane* or the active (crossbar) *Gigaplane-XB*. However, the more modest Sun Ultra Enterprise 450 was implemented on a single board with up to four 250-to-480MHz UltraSPARC-II CPU modules with onboard E-cache, and two independent, buffered 144-bit UPA buses (128-bits data, 16-bits ECC) serving two CPUs per bus. There was 128MB to 4GB of memory (four banks of 4 x 144-pin DRAM DIMM module slots), and four full-size PCI 2.1 slots, internal and external SCSI ports, a Centronics compatible printer port, two RS232 serial ports, mini-DIN-8 keyboard and mouse ports, and a 100Mbps Ethernet port.

The details of the system purchased by the Dept.Computer Science are not known.

Unfortunately this system was disposed of in the mid-2000s. If it survives elsewhere the department would very much welcome its donation back into the collection.

The homepage for this catalog is at: <https://www.scss.tcd.ie/SCSSTreasuresCatalog/>  
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Accession Index	Object with Identification
TCD-SCSS-T.20121208.093	Sun Ultra Enterprise 450, Departmental system that used UPA packet-switched interconnect, c.1997.

### References:

1. Wikipedia, *Sun Enterprise*, see:  
[https://en.wikipedia.org/wiki/Sun\\_Enterprise](https://en.wikipedia.org/wiki/Sun_Enterprise)  
Last browsed to 26-Feb-2018.
2. Alan Charlesworth, Andy Phelps, Ricki Williams, Gary Gilbert, *Gigaplane-XB: Extending the Ultra Enterprise Family*, Sun Microsystems Inc, 30-Jul-1997, see:  
<https://people.eecs.berkeley.edu/~culler/hoti97/E10000.ps>  
Last browsed to 26-Feb-2018.



*Figure 1: Sun Ultra Enterprise 450*