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A first look at 100 Gbps LAN technologies, with an emphasis on future DAQ applications

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The LHCb experiment is preparing a major upgrade of both the detector and the data acquisition system. A system capable of transporting up to 50 Tbps of data will be required. This can only be achieved in a manageable way using 100 Gbps links. Such links recently became available also in the servers, while they have been available between switches already for a while.

We present first measurements with such links (InfiniBand EDR, Ethernet 100 GbE) both using standard benchmarks and using a prototype event-building application. We analyse the CPU load effects by using Remote DMA technologies, and we also show comparison with previous tests on 40 G equipment.

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