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Tackling the EXAScaler Data Challenge

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Exascale storage systems requires a core architecture in software, hardware and application IO protocol that can scale. Parallel filesystems, which feature a client that manages IO in parallel across the server infrastructure is an important component to remove storage backend congestion. i.e. Intelligence in compute, network and storage is needed to enable holistic scaling. Good economics is also critical and successful approaches must leverage low cost flash to be viable. Thirdly, distributed lock management must either be very efficient, often bypassing some troublesome parts of POSIX, and/or the applications require redesign of I/O to remove bottlenecks in lock management. We discuss DDN's experience and approach to these three areas of EXAScaler storage and explain the pros and cons of each.

Primary author: Dr COOMER, James (DDN)

Presenter: Dr COOMER, James (DDN)

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