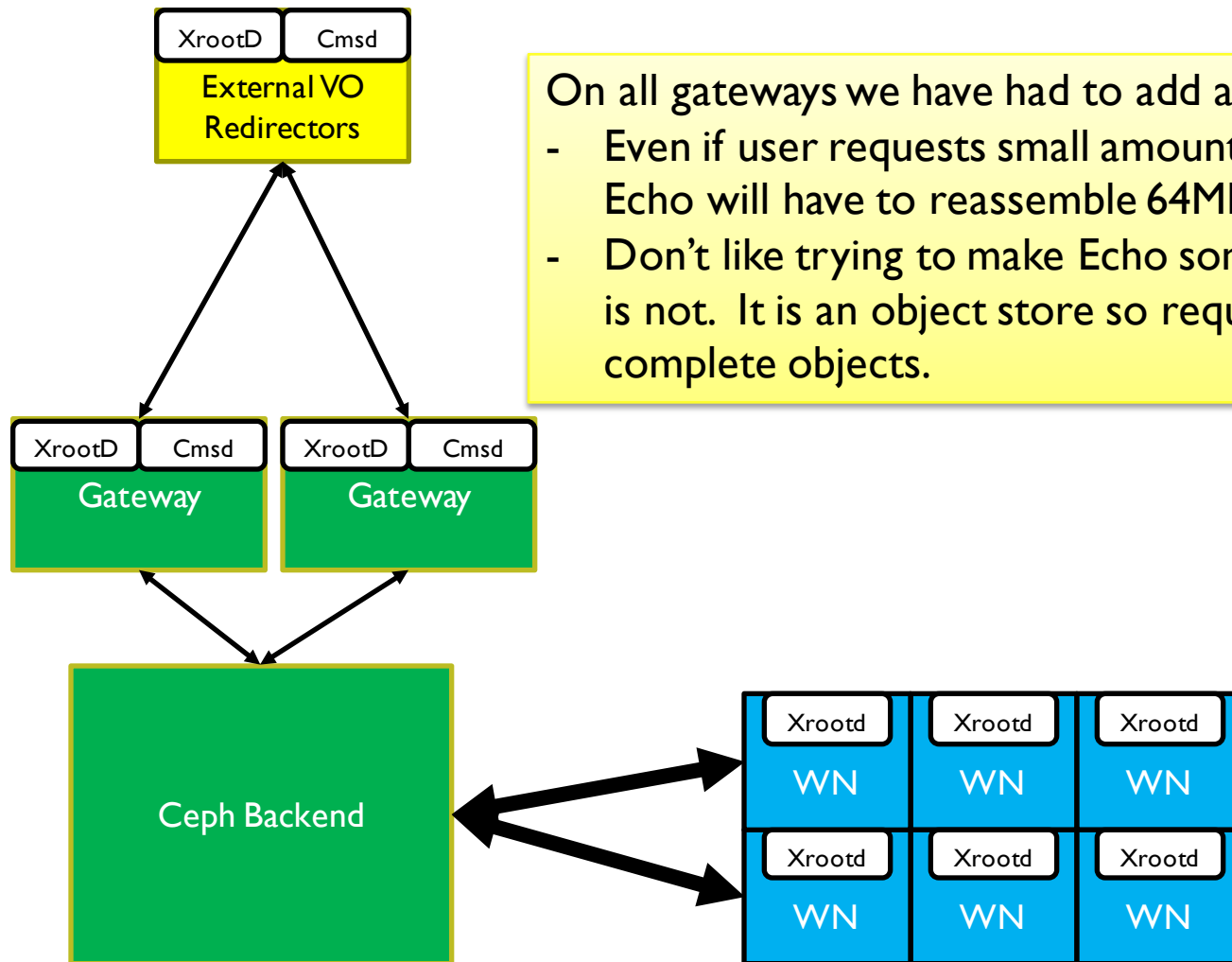# XRootD cache sites

Alastair Dewhurst

Motivation

- ATLAS are pushing forward with diskless sites:

  - https://indico.cern.ch/event/642836/contributions/2608398/attachments/1467335/2268911/Diskless_28May.pdf

  - ATLAS consider Birmingham, Cambridge, Sheffield to have small storage but don't know have a clear plan.

    - Leaving it to us to decide at the moment.

- Requirements:

  - No new hardware and can work with increasingly unreliable hardware.

  - Extremely easy to maintain for the site.

    - Personal opinion – If it is useful for local users, more likely to be maintained.

  - Transparent to ATLAS.

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RAL XRootD Setup

On all gateways we have had to add a cache.
- Even if user requests small amount of a file, Echo will have to reassemble 64MB chunk.
- Don't like trying to make Echo something it is not. It is an object store so request complete objects.

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'ECDF' XRootD Setup

- Setup:

  - 2 redirectors working in load balancing mode, one at ECDF and one in Glasgow.

  - 2 storage servers behind it right now, one in ECDF and one in Durham.

- More sites can easily connect a server to the redirectors.

  - Instructions: https://www.gridpp.ac.uk/wiki/XRootD

- Main problem for this site was how to get data there (No GridFTP for FTS).

  - I have been informed it is 'trivial' to configure this to stage in data from an external source (i.e. act as a cache).

Start of a plan

- Add configuration to XRootD storage to allow it to function as a cache.

    - Ideally to pre-fetch complete files.

    - Point it at local storage first and test if it works.

    - Test it against Echo.

    - Setup 'UCL style' Panda queue.

- Wei Yang has written a N2N plugin that caches identical Rucio files (that have been given different scopes)

    - https://github.com/wyang007/xrootd-N2N-rucio-pfn2glfn

    - Could increase efficiency of cache (but not necessary for functionality).

Alastair Dewhurst, 31st May 2017