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# **LHCb & ServiceBox (VO Box)**

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- **LHCb viewpoint**
- **SC3**
- **LHCb Requirements**
- **LHCb Services**
- **Connectivity**
- **Remarks**

The “**Service Box**” provides a way to deploy VO specific upper layer middleware on the Site with the aim of filling the gap between existing LCG middleware and the VO needs.

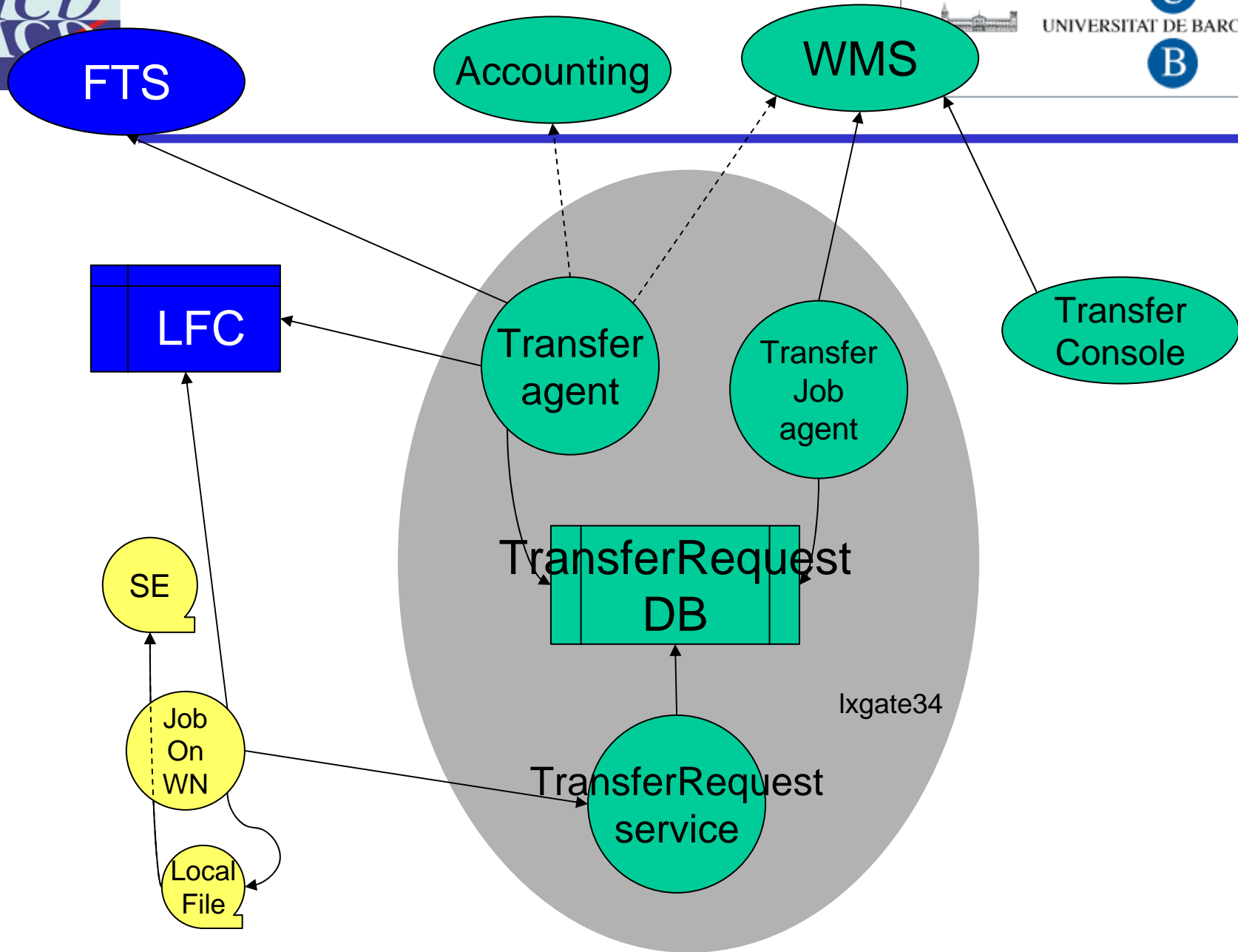
The “**Service Box**” is not to by-pass current middleware deployment but to strengthen & enhance it to meet the specific requirements of LHCb.

**VO is responsible for the “user space Software” running on the “Service Box”.**

LHCb activities, during SC3, will be **centrally driven** by a dedicated machine at CERN that will host the extra necessary agents and services.

The **cost** of removing the need for Tier-1 “Service Box” is the need for a central service at CERN to accept incoming network connections and the removal of a layer of redundancy & flexibility.

We wanted to **allow for the current discussion** without extra pressure to the sites.



Need a machine where **permanent-running** processes (agents or services) can be deployed, and incorporate the required **security, logging & monitoring**.

Following LHCb DIRAC design principle these components will be **lightweight**, deployable **in user space** and with no special hardware resource requirements.

**Local disk ~10 GB (separate partition).**

**GSI-SSH**: for accessing the machine to a single login account.

User level service for running daemons (ie **“runit”**): For reliable restart and supervision of running daemons.

Standard **LCG UI** profile (including FTS client): to interact with LCG middleware.  
Need service certificates.

**Aim:** make remote operations from jobs in WNs fault tolerant without wasting CPU for extra retries. Current implementation includes extra delays and retries at the cost of wasting the CPU.

- **Fault tolerant connections** to central servers:
  - DIRAC job monitoring & accounting RelayService.
  - DIRAC bookkeeping RelayService.
- **Fault tolerant operations:**
  - DIRAC TransferAgent.
  - DIRAC TransferRequestService.



## LONG TERM AIM

RelayService for all DIRAC outbound connections from WN.

DIRAC Jobs will require **no “outbound”** connectivity from the WN for any DIRAC operation.

**Necessary requirement to allow jobs to communicate to the outer world without outbound connectivity.**

## Inbound

- Gsi-ssh:
  - from anywhere, for VO managers (VOMS).
- Deployed services:
  - from Site(internal) + “associated Tier2’s”(external).

## Outbound

- To all DIRAC and LCG services.
- (does it need to be limited?)

## For LHCb

The “Service Box” should be considered a new architectural item of the middleware that allows a VO to enhance middleware components to meet our needs in a controlled environment.

## For middleware developers

The “Service Box” will allow developing and testing new component, or new versions of existing components without interference with existing production versions, having access at the same time to the real resources of the site.