

# A lightweight federation of the Belle II storages through dynafed

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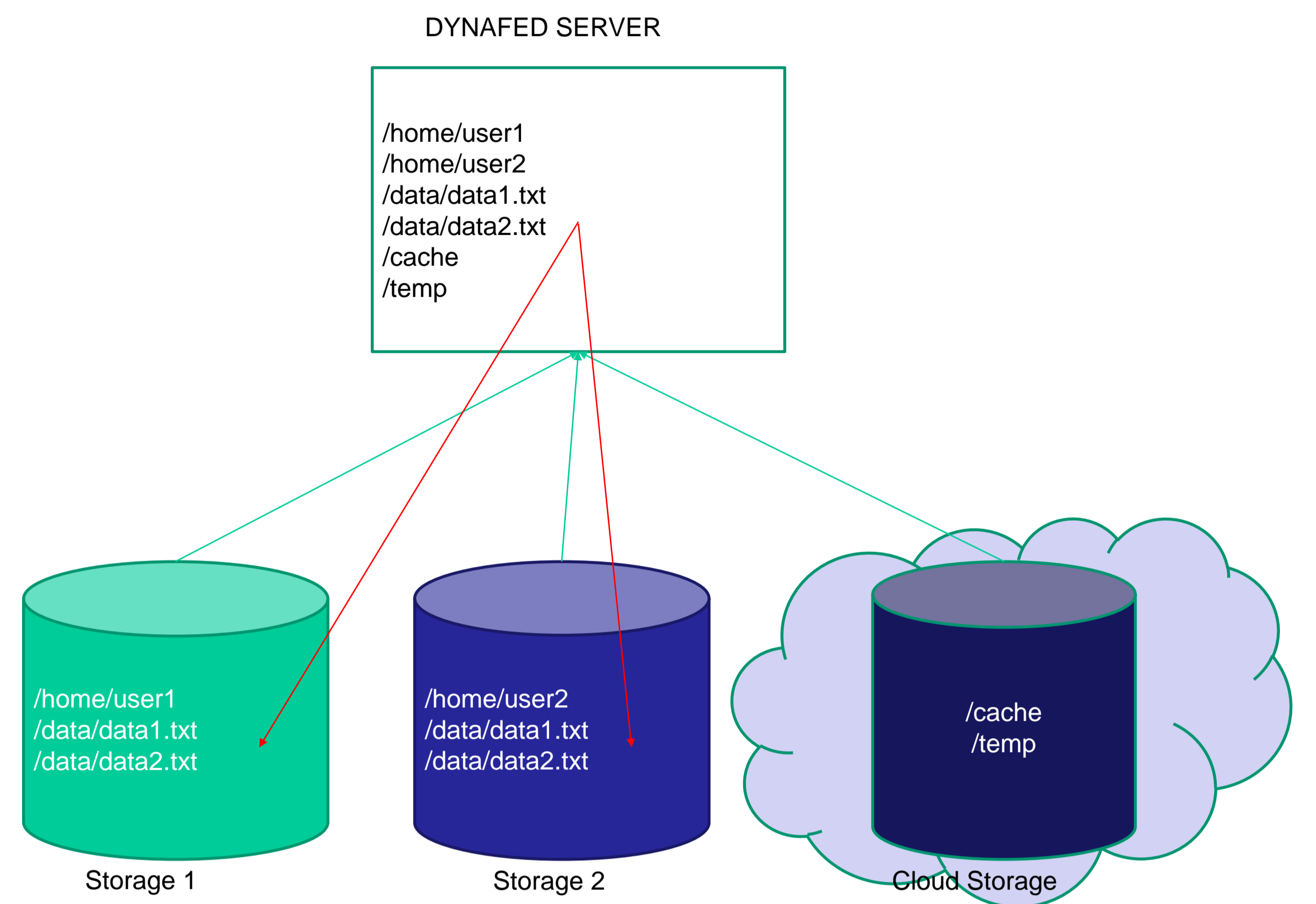
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## INTRODUCTION

Belle II experiment can take advantage from Data federation technologies to simplify access to distributed datasets and file replicas. The increasing adoption of http and webdav protocol by sites, enables to create lightweight solutions to give an aggregate view of the distributed storage.

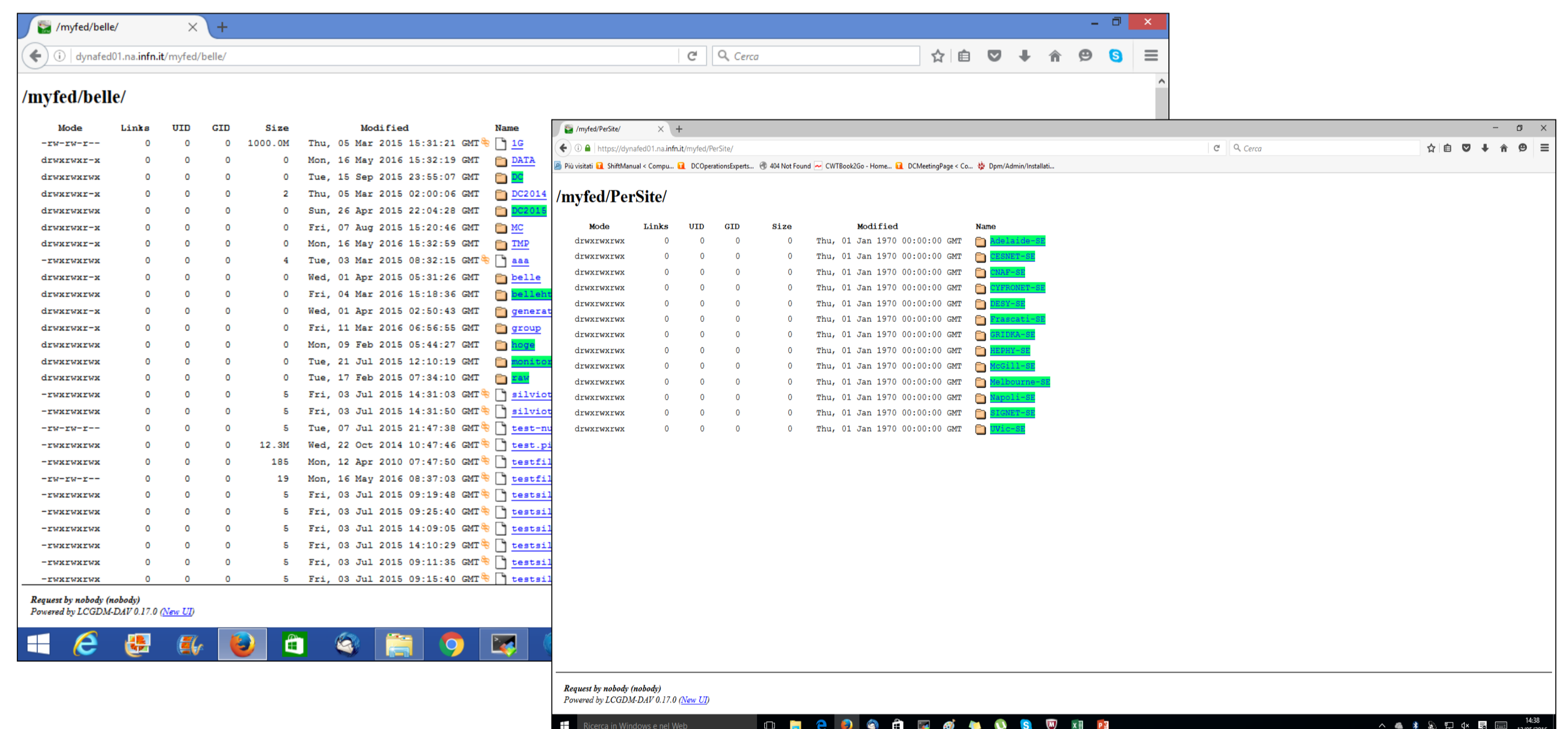
In this work, we make a study on the possible usage of the software Dynafed developed by CERN for the creation of an on-the-fly data federation.



## THE DYNAFED TESTBED

We created a first dynafed server, hosted in the datacentre in Napoli, and connected with about the 50% of the production storages of Belle II. Then we aggregated the contents of all the storage systems under a unique http path. We implemented as well an additional view, in order to browse the contents of the individual storage systems.

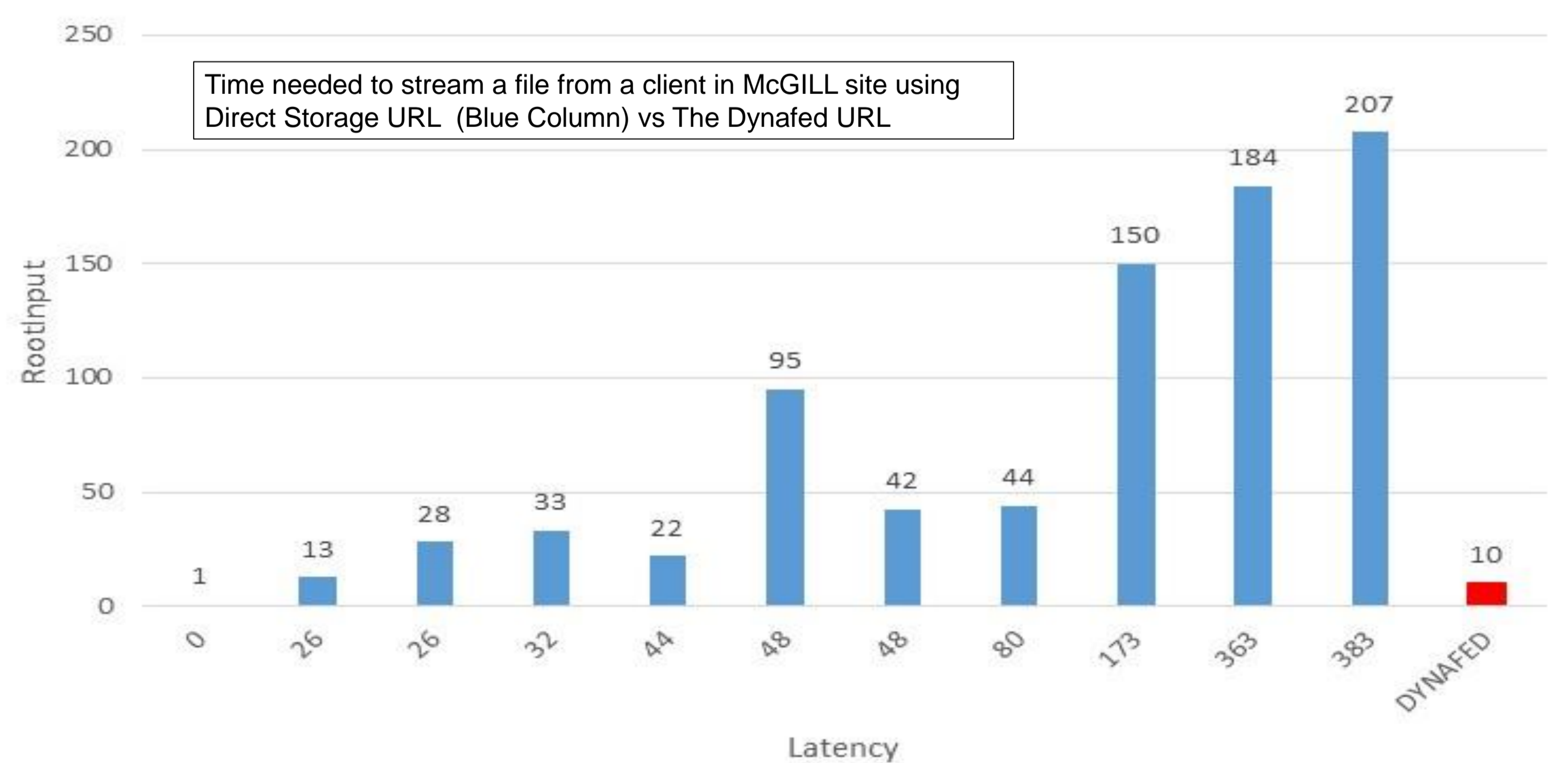
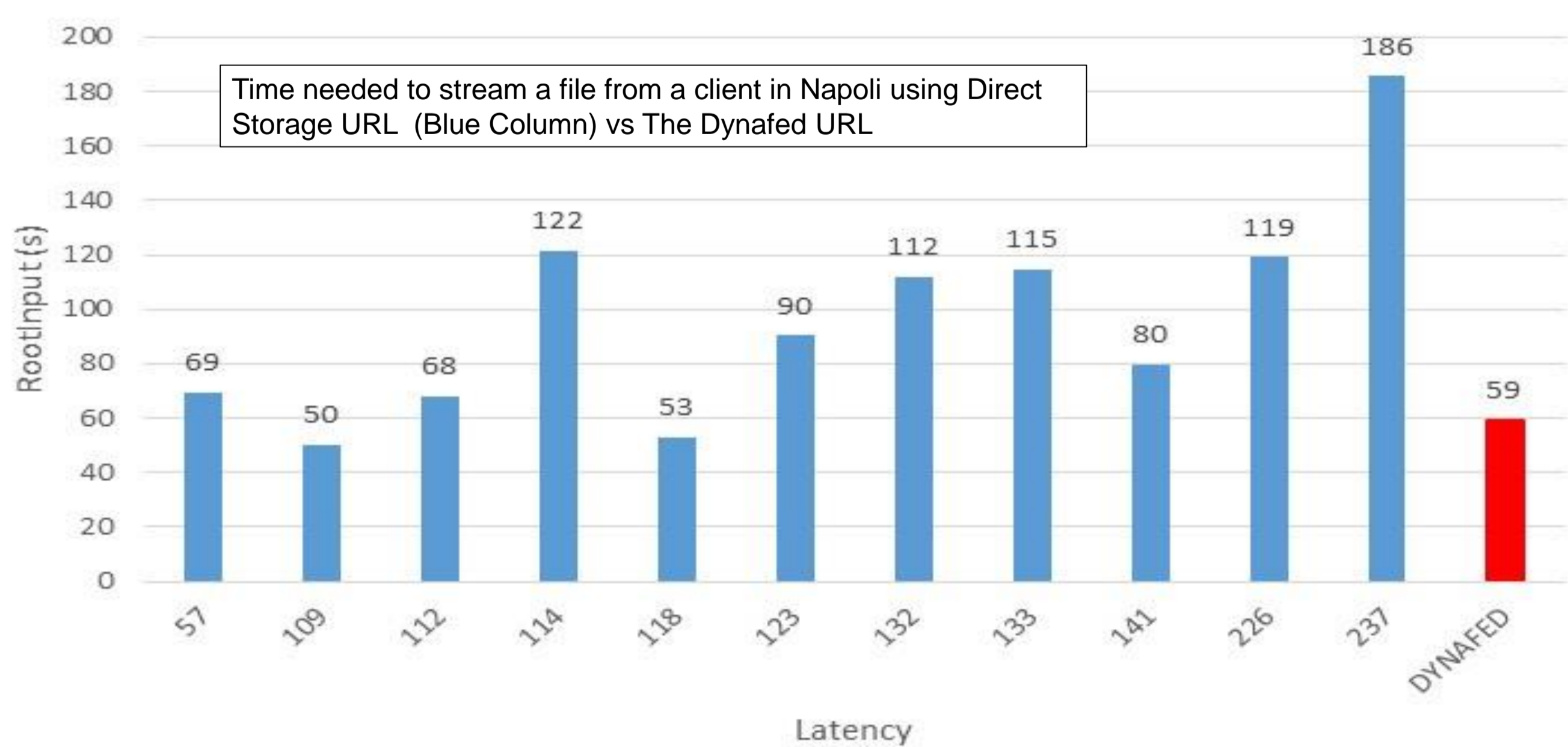
STORGE NAME	HOSTNAME	TYPE
DESY-DE	dcache-belle-webdav.desy.de	DCACHE
GRIDKA-SE	f01-075-140-e.gridka.de	DCACHE
NTU-SE	bgrid3.phys.ntu.edu.tw	DCACHE
SIGNET-SE	dcache.ijs.si	DCACHE
UVic-SE	charon01.westgrid.ca	DCACHE
Adelaide-SE	coepp-dpm-01.ersa.edu.au	DPM
CESNET-SE	dpm1.egee.cesnet.cz	DPM
CYFRONNET-SE	dpm.cyf-kr.edu.pl	DPM
Frascati-SE	atlasse.lnf.infn.it	DPM
HEPHY-SE	hephyse.oew.ac.at	DPM
Melbourne-SE	b2se.mel.coepp.org.au	DPM
Napoli-SE	belle-dpm-01.na.infn.it	DPM
CNAF-SE	ds-202-11-01.cr.cnaf.infn.it	STORM
McGill-SE	gridftp02.clumeq.mcgill.ca	STORM



Thanks to the aggregation feature provided by Dynafed, we can address a specific file and its replicas with a single url:

[http://dynafed01.na.infn.it/myfed/belle/TMP/belle/user/spardi/testhttp/mixed\\_e0001r0009\\_s00\\_BGx1.mdst.root](http://dynafed01.na.infn.it/myfed/belle/TMP/belle/user/spardi/testhttp/mixed_e0001r0009_s00_BGx1.mdst.root)

For the testbed 50 files have been copied in the 14 storages of Dynafed. It can be used also for future tests.



## CONCLUSION

Dynafed is a very interesting solution for Belle II community to federate in a very light way multiple storages without complex configuration on the site side. Tests done have demonstrated the capability to manage Global Storage, and to redirect clients to a convenient copy.

## Comments

Dynafed thanks to the geoip-plugin is able to chose a convenient replica for the client, however it seems that not distinguish storages in the same country.