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Question

Question 4. If you want to, please let us know what is the approximate effort (in terms of FTEs) needed to support storage at your site, as is currently deployed and at the current capacity? If it makes sense, you may split the effort between any VO-specific support effort and generic (VO agnostic) effort.

Answers

CERN

EOS - Difficult to quantify and not very representative (complex mix of dev, ops and fabric management).

Ceph - ~2 FTE on operations

Castor - ~2FTE across disk and tape ops

hephy-Vienna

0.5 FTE.

KI-LT2-QMUL

2/3 FTE (including procurement, installation, configuration, maintainance)

UKI-LT2-RHUL

0.25 FTE

RO-13-ISS

Nebraska

Storage support varies from week to week. It likely averages between .25 to .5 FTE. When we commission new storage devices that can be a bit time consuming but the bulk of our storage effort is in monitoring and replacing failed media.

INFN-ROMA1

About 0.5 FTE

NDGF-T1

2

BEgrid-ULB-VUB

0.8 FTE

NCG-INGRID-PT

1 FTE

IN2P3-IRES

The effort required to provide the storage is very low, as most of the actions are automatized. It is less than 0.2 FTE.

LRZ-LMU

1.0

CA-WATERLOO-T2

1 FTE (main support 0.8 FTE for grid admin + 0.2 of other sys admins)

CA-VICTORIA-WESTGRID-T2

.5

Taiwan_LCG2

1. We will need at least two FTEs to maintain our storage system. However, the idea FTE will be three. 2. Yes, it kinda makes sense to split effort between specific VO support and generic support.

IN2P3-SUBATECH

If we evaluate managing the storage at 50% of the effort for the site, this would be 0.5 FTE or less

asd

MPPMU

.5 FTE 3PB

INFN-LNL-2

Australia-ATLAS

0.3

0.2 FTE for hardware support only. Central management performed by NDGF-T1 team.

KR-KISTI-GSDC-02

VO-specific support effort : generic effort = 20:80

UKI-LT2-IC-HEP

0.5

-UCL

UKI-SOUTHGRID-BRIS-HEP

0.5

GR-07-UOI-HEPLAB

UKI-SOUTHGRID-CAM-HEP

Approx 0.3FTE (all generic)

USC-LCG2

EELA-UTFSM

DESY-ZN

0.2

PSNC

2FTE, but it will be extended due to specifiv VO requests

UAM-LCG2

0.5 FTEs

T2_HU_BUDAPEST

INFN-Bari

0.5 FTE

IEPSAS-Kosice

approximate effort (in terms of FTEs) needed to support storage : 2 current capacity : 1

IN2P3-CC

It is no easy to answer to this question, because we also provide many other storage solutions for non WLCG experiments, sometimes with the same technology (dcache, xrootd) and sometime not (Irods, GPFS,). Storage team is in charge to provide this full set of solution and the split cannot be done easily

NONE_DUMMY

blah

WEIZMANN-LCG2

10%

RU-SPbSU

USCMS_FNAL_WC1

Approximately 3 FTE supporting hardware, services for disk storage (questions seem to imply we're only talking about disk here).

RRC-KI-T1

vanderbilt

1.0

UNIBE-LHEP

CA-SFU-T2

about 0.1 FTE (we've had many problems with dcache lately), for 3 VOs

_CSCS-LCG2

1.5 FTE

T2_BR_SPRACE

T2_BR_UERJ

1FTE

GSJ-LCG2

About 3-4 FTEs including also the maintainance of the Lustre backend.

UKI-NORTHGRID-LIV-HEP

CIEMAT-LCG2

Aggregating the effort required for hardware-related tasks (deployment and maintenance), O.S. installations, middleware deployment and management, and general operation tasks, probably ~2 FTEs are required to

NONE_DUMMY

support storage (this does not include networking-related activities). In our case, CMS represents ~90% of storage usage, and probably supporting other (basically, local) communities only adds ~10% of additional effort.

a

T2_US_Purdue

25%

IN2P3-LAPP

0.8 FTE should be agnostic but, in reality, it is more ATLAS-specific in the sense that 90 % of the total capacity is for ATLAS

TRIUMF-LCG2

Overall, a baseline of 2 FTEs to support all aspects of the Tier-1 storage infrastructure. We only support ATLAS.

KR-KISTI-GSDC-01

As mentioned above, since we are only supporting ALICE VO now, we cannot split our effort into different VOs. Currently we have 1.5 FTEs for storage management and operations: 1 FTE for storage hardware (daily maintenance, hardware procurement, installation and configuration, vendor contact, etc.) and 0.5 FTE for storage operation (XRootD and EOS maintenance and operations, update and upgrade, etc.)

GRIF

0.8 FTE

IN2P3-CPPM

IN2P3-LPC

0.5 FTE

IN2P3-LPSC

ATLAS and ALICE VO support => FTE ~ 0,3

ZA-CHPC

0.1

JINR-T1

3 FTE

CIEMAT-LCG2

praguelcg2

2 FTEs

UKI-NORTHGRID-LIV-HEP

Approximately 0.25FTE, mostly maintaining the current system.

INDIACMS-TIFR

Entire site managed by 2 Admins

TR-10-ULAKBIM

0,2

prague_cesnet_lcg2

0.5FTE

TR-03-METU

0,2

aurora-grid.lunarc.lu.se

SARA-MATRIX_NKHEF-ELPROD__NL-T1__

1 VO agnostic, 0.7 VO specific

-UNIBA

DESY-HH

T3_PSI_CH

1 FTE for the whole support of T3

SAMPA

10FTE per day

INFN-T1

4 FTE fo SW and HW support + 2 FTE for VO specific support

GLOW

0.5

UNI-FREIBURG

n.a.

Ru-Troitsk-INR-LCG2

T2_Estonia

HDFS needs from time to time disk swap if disk fails otherwise it run quite well and no maintenance required very often. Ceph has/have still multiple problem with load/configuration and needs more attention. Hard to say how much time. Depends on problem/incident.

pic

Approximately, we do have 1.5 FTEs to operate disk and tape resources. Regular system updates are VO-agnostic, and they require time for testing and validating, before applying changes and/or deploy new versions. New hardware installations might be VO-dependent (indeed, 75% of the disk resources deployed are used by the LHC). Tape recycles/repacks are VO-dependent, however the deployed tools are VO-agnostic. We would say 60-40 for VO-specific and VO-agnostic effort can apply in our case.

ifae

The ifae site is hosted at PIC. Approximately, we do have 1.5 FTEs to operate disk and tape resources. Regular system updates are VO-agnostic, and they require time for testing and validating, before applying changes and/or deploy new versions. New hardware installations might be VO-dependent (indeed, 75% of the disk resources deployed are used by the LHC). Tape recycles/repacks are VO-dependent, however the deployed tools are VO-agnostic. We would say 60-40 for VO-specific and VO-agnostic effort can apply in our case.

NCBJ-CIS

Not much - 0.1 FTE for all grid related activities.

RAL-LCG2

Echo: 2.5 FTE Castor 2.1 FTE

T2_IT_Rome

BNL-ATLAS

N/A

FZK-LCG2

INFN-NAPOLI-ATLAS

about 0.33 FTE

-- OliverKeeble - 2019-08-22

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