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IPv6 Task Force

Mandate and goals

The imminent exhaustion of the IPv4 address space will eventually require to migrate the WLCG services to an IPv6 infrastructure, with a timeline heavily dependent on the needs of individual sites. For this reason the HEPiX IPv6 Working Group was created in April 2011 having this mandate [↗](#).

The WLCG Operations Coordination and Commissioning Team has established an IPv6 Task Force to establish a close collaboration with the HEPiX IPv6 WG on these aspects (listed in chronological order):

- Define realistic IPv6 deployment scenarios for experiments and sites
- Maintain a complete list of clients, experiment services and middleware used by the LHC experiments and WLCG
- Identify contacts for each of the above and form a team of people to run tests
- Define readiness criteria and coordinate testing according to the most relevant use cases
- Recommend viable deployment scenarios

perfSONAR dashboard links

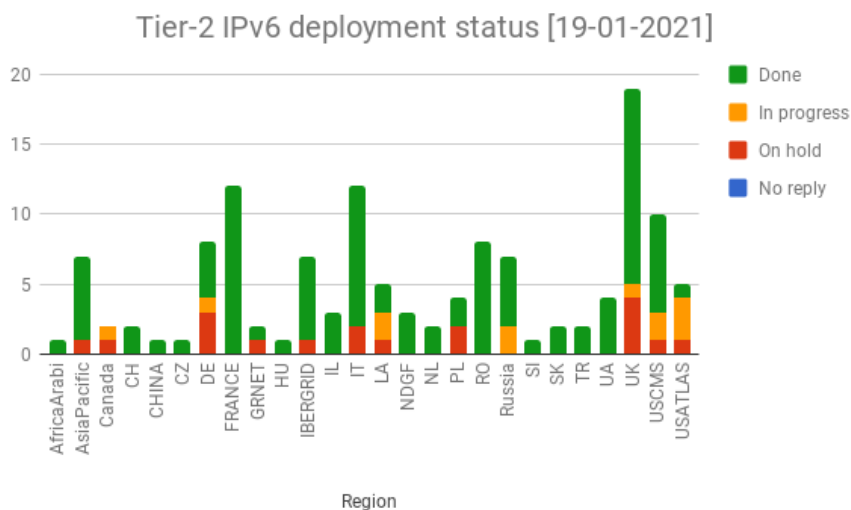
- OPN mesh ([link ↗](#))

OSG IPv6 activities

They are detailed here [↗](#).

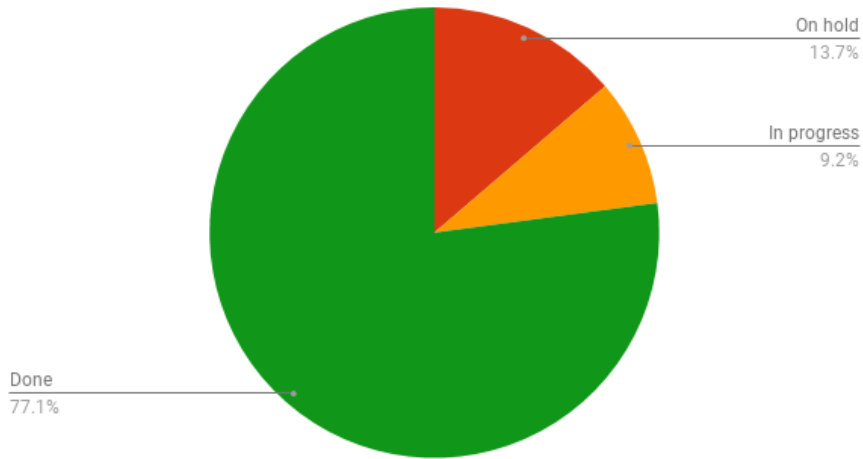
WLCG Tier-2 IPv6 deployment status (2017-2018) [last checked on 2021-01-19]

- [chart.png](#):



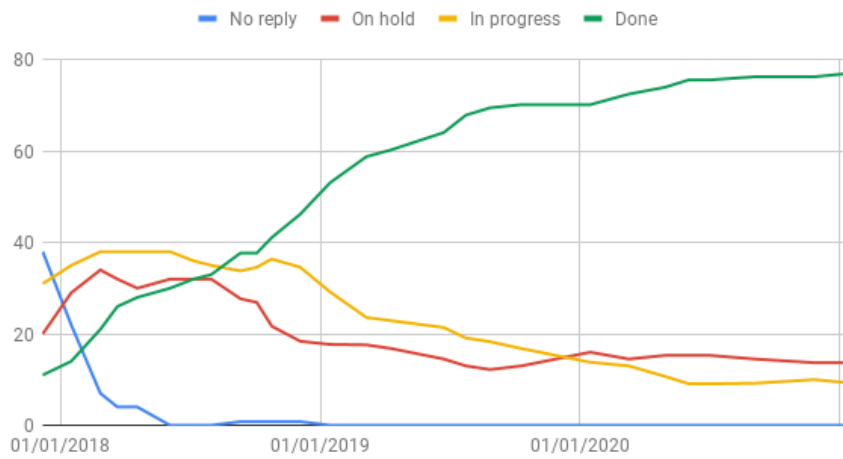
- [chart2.png](#):

Tier-2 IPv6 deployment status [19-01-2021]



• chart3.png:

Status vs. time

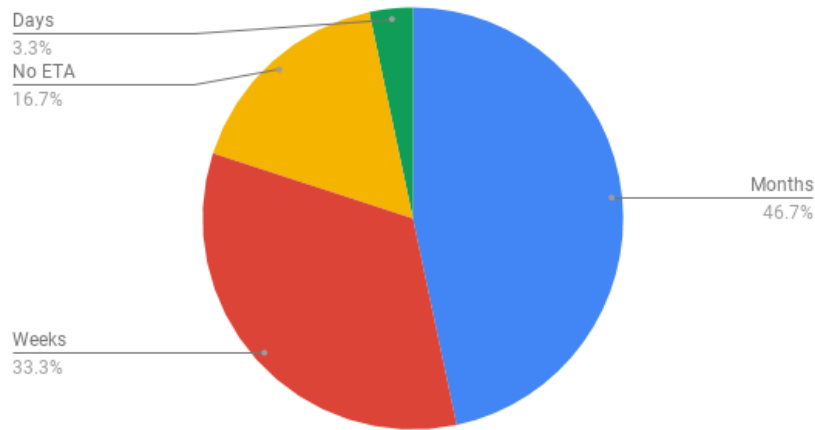


VO	T2 storage on IPv6 (%)
ALICE	86
ATLAS	62
CMS	93
LHCb	75
WLCG	77

(checked on 2021-01-19)

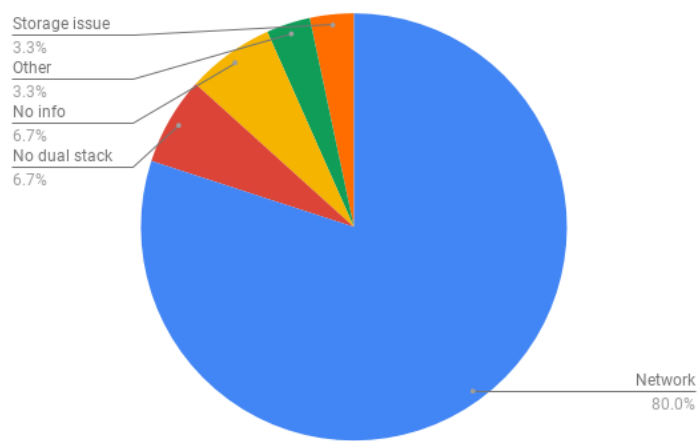
• chart4.png:

Time scale for deployment [19-01-2021]



• chart5.png:

Reason of delay [19-01-2021]



Site	Region	ALICE	ATLAS	CMS	LHCb	Status	perfSONAR	Storage
UKI-GridPP-Cloud-IC	UK				Y	Done	NA	NA
UKI-LT2-Brunel	UK		Y	Y	Y	Done	NA	Tested
UKI-LT2-IC-HEP	UK		Y	Y	Y	Done	Dual stack	Tested
UKI-LT2-QMUL	UK		Y	Y	Y	Done	Dual stack	Tested
UKI-LT2-RHUL	UK		Y	Y	Y	On hold	Dual stack	IPv4
UKI-LT2-UCL-HEP	UK		Y			Done	Dual stack	NA
UKI-NORTHGRID-LANCS-HEP	UK		Y		Y	Done	Dual stack	Tested
UKI-NORTHGRID-LIV-HEP	UK		Y		Y	On hold	Dual stack	IPv4

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UKI-NORTHGRID-MAN-HEP	UK		Y		Y	Done	Dual stack	Dual stack
UKI-NORTHGRID-SHEF-HEP	UK		Y		Y	Done	Dual stack	NA
UKI-SCOTGRID-DURHAM	UK		Y		Y	Done	Dual stack	Dual stack
UKI-SCOTGRID-ECDF	UK		Y		Y	Done	Dual stack	Dual stack (partial)
UKI-SCOTGRID-GLASGOW	UK		Y	Y	Y	In progress	Dual stack	IPv4
UKI-SOUTHGRID-BHAM-HEP	UK	Y	Y		Y	On hold	IPv4	IPv4
UKI-SOUTHGRID-BRIS-HEP	UK		Y	Y	Y	Done	Dual stack	Tested
UKI-SOUTHGRID-CAM-HEP	UK		Y		Y	Done	Dual stack	Tested
UKI-SOUTHGRID-OX-HEP	UK	Y	Y	Y	Y	On hold	Dual stack	IPv4
UKI-SOUTHGRID-RALPP	UK		Y	Y	Y	Done	Dual stack	Tested
UKI-SOUTHGRID-SUSX	UK		Y			Done	Dual stack	Testing
IN2P3-CPPM	FRANCE		Y		Y	Done	Dual stack	Testing
IN2P3-CC-T2	FRANCE		Y	Y		Done	Dual stack	Dual stack
GRIF_IRFU	FRANCE	Y	Y	Y	Y	Done	Dual stack	Tested
GRIF_LLRL	FRANCE	Y	Y	Y	Y	Done	Dual stack	Tested
GRIF_LPNHE	FRANCE	Y	Y	Y	Y	Done	Dual stack	Dual stack
GRIF_IPNO	FRANCE	Y	Y	Y	Y	Done	Dual stack	Tested
GRIF_LAL	FRANCE	Y	Y	Y	Y	Done	Dual stack	Dual stack
IN2P3-LAPP	FRANCE		Y		Y	Done	Dual stack	Testing
IN2P3-LPC	FRANCE	Y	Y		Y	Done	Dual stack	Tested
IN2P3-LPSC	FRANCE	Y	Y			Done	Dual stack	Tested?
IN2P3-SUBATECH	FRANCE	Y				Done	Dual stack	Tested
IN2P3-IRES	FRANCE	Y		Y		Done	Dual stack	Tested
HEPHY-UIBK	IT		Y			Done	NA	NA
Hephy-Vienna	IT	Y		Y		On hold	IPv4	IPv4

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INFN-Bari	IT	Y	Y	Y	Y	Done	Dual stack	Tested
INFN-CATANIA	IT	Y				Done	Testing	Tested
INFN-FRASCATI	IT		Y			Done	Dual stack	Tested?
INFN-LNL-2	IT	Y		Y	Y	Done	Dual stack	Tested
INFN-MILANO-ATLASC	IT		Y			Done	Dual stack	Tested
INFN-NAPOLI-ATLAS	IT		Y		Y	Done	Dual stack	Dual stack
INFN-PISA	IT			Y	Y	Done	IPv4	Tested
INFN-ROMA1	IT		Y			Done	Dual stack	Tested?
INFN-ROMA1-CMS	IT			Y		Done	Dual stack	Tested
INFN-TORINO	IT	Y			Y	In progress	IPv4	IPv4
wuppertalprod	DE		Y			On hold	IPv4	IPv4
GoeGrid	DE		Y			In progress	IPv4	IPv4
DESY-HH	DE		Y	Y	Y	Done	Dual stack	Tested
LRZ-LMU	DE		Y			Done	NA	Tested
MPPMU	DE		Y			On hold	NA	IPv4
DESY-ZN	DE		Y		Y	Done	IPv6	Dual stack
UNI-FREIBURG	DE		Y			On hold	IPv4	IPv4
RWTH-Aachen	DE			Y		Done	Dual stack	Tested
NCG-INGRID-PT	IBERGRID		Y	Y		In progress	IPv4	Testing
IFCA-LCG2	IBERGRID			Y		Done	Dual stack	Tested
UAM-LCG2	IBERGRID		Y			Done	Dual stack	Tested
ifae	IBERGRID		Y			Done	Dual stack	Tested
USC-LCG2	IBERGRID				Y	Done	Dual stack	Dual stack
IFIC-LCG2	IBERGRID		Y			Done	Dual stack	Dual stack
CIEMAT-LCG2	IBERGRID			Y		Done	Dual stack	Tested
CSCS-LCG2	CH		Y	Y	Y	Done	Testing	Tested
UNIBE-LHEP	CH		Y			Done	NA	IPv4
pragueicg2	CZ	Y	Y			Done	Dual stack	Testing
BUDAPEST	HU	Y		Y		Done	Dual stack	Tested
CYFRONET-LCG2	PL	Y	Y		Y	Testing	NA	Dual stack

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PSNC	PL	Y	Y		Y	Done	NA	Tested
ICM	PL			Y	Y	Done	NA	Tested
NCBJ	PL				Y	On hold	IPv4	IPv4
GR-07-UOI-HEPLAB	GRNET			Y		Done	Dual stack	Tested
GR-12-TEIKAV	GRNET		Y			On hold	NA	IPv4
SE-SNIC-T2	NDGF	Y	Y			Done	NA	Dual stack
FI_HIP_T2	NDGF			Y		Done	Dual stack	Tested
T2_Estonia	NDGF			Y		Done	Dual stack	Tested
BelGrid-UCL	NL			Y		Done	IPv4	Tested
BEgrid-ULB-VUB	NL			Y		Done	Dual stack	Dual stack
RO-14-ITIM	RO		Y			Done	Dual stack	Tested?
RO-11-NIPNE	RO				Y	Done	IPv4	NA
NIHAM	RO	Y				Done	IPv4	Tested
RO-07-NIPNE	RO	Y	Y		Y	Done	Dual stack	Tested
RO-13-ISS	RO	Y				Done	NA	Tested
RO-02-NIPNE	RO		Y			Done	IPv4	Tested?
RO-16-UAIC	RO		Y			Done	Dual stack	NA
RO-03-UPB	RO	Y				Done	Dual stack	Tested
SiGNET	SI		Y			Done	Dual Stack	Testing
IEPSAS-Kosice	SK	Y	Y			Done	Dual Stack	Tested
FMPH-UNIBA	SK	Y	Y			Done	Dual stack	Tested
WEIZMANN-LCG2	IL		Y		Y	Done	NA	IPv4
IL-TAU-HEP	IL		Y		Y	Done	NA	Testing
TECHNION-HEP	IL		Y		Y	Done	Dual stack	Testing
RU-SPbSU	Russia	Y			Y	In progress	IPv4	IPv4
ITEP	Russia	Y	Y	Y	Y	Done	Dual stack	Tested
ru-PNPI	Russia	Y	Y	Y	Y	Done	Dual stack	Dual stack

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RU-Protvino-IHEP	Russia	Y	Y	Y	Y	Done	Dual stack	Tested?
JINR-LCG2	Russia	Y	Y	Y	Y	Done	Dual stack	Tested
RRC-KI	Russia	Y	Y		Y	In progress	IPv4	IPv4
Ru-Troitsk-INR-LCG2	Russia	Y		Y	Y	Done	NA	Tested
UA-KNU	UA	Y				Done	NA	Tested
UA-BITP	UA	Y				Done	NA	Tested
UA-ISMA	UA	Y				Done	NA	Tested
Kharkov-KIPT-LCG2	UA			Y		Done	Dual stack	Tested
TR-03-METU	TR			Y		Done	Testing	Tested
TR-10-ULAKBIM	TR		Y			Done	NA	Testing
BEIJING-LCG2	CHINA		Y	Y		Done	Dual stack	Testing
ZA-CHPC	AfricaArabia	Y	Y			Done	NA	Dual stack (partially)
CA-SCINET-T2	Canada		Y			Done	IPv4	IPv4
CA-MCGILL-CLUMEQ-T2	Canada		Y			Done	IPv4	IPv4
CA-WATERLOO-T2	Canada		Y			On hold	IPv4	IPv4
CA-VICTORIA-WESTGRID-T2	Canada		Y			In progress	IPv4	IPv4
Australia-ATLAS	AsiaPacific		Y			On hold	IPv4	IPv4
IN-DAE-VECC-02	AsiaPacific	Y				Done	NA	Tested
TOKYO-LCG2	AsiaPacific		Y			Done	Dual stack	Tested
TW-FTT	AsiaPacific		Y			Done	Dual stack	Dual stack

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NCP-LCG2	AsiaPacific	Y		Y		Done	Dual stack	Tested
INDIACMS-TIFR	AsiaPacific			Y		Done	Dual stack (local)	Tested
T2-TH-SUT	AsiaPacific	Y				Done	Dual stack	Tested
EELA-UTFSM	LA		Y			Done	Dual stack	Tested
ICN-UNAM	LA	Y				On hold	NA	IPv4
CBPF	LA	Y			Y	In Progress	Dual stack	Dual stack
SUPERCOMPUTO-UNAM	LA	Y				In progress	NA	Testing
SAMPA	LA	Y			Y	Done	Dual stack	Tested
T2_BR_SPRACE	USCMS			Y		Done		
T2_BR_UERJ	USCMS			Y		In progress		
T2_US_Caltech	USCMS			Y		Done		
T2_US_Florida	USCMS			Y		Done		
T2_US_MIT	USCMS			Y		On hold		
T2_US_Nebraska	USCMS			Y		Done		
T2_US_Purdue	USCMS			Y		Done		
T2_US_UCSD	USCMS			Y		Done		
T2_US_Vanderbilt	USCMS			Y		In progress		
T2_US_Wisconsin	USCMS			Y		Done		
AGLT2	USATLAS		Y			Done		
MWT2	USATLAS		Y			In progress		
NET2	USATLAS		Y			In progress		
SWT2_OU	USATLAS		Y			In progress		
SWT2_UTA	USATLAS		Y			On hold		

Legend:

- Status: No reply, on hold, in progress, done
- perSONAR: NA (not available at site), (only) IPv4, Dual stack
- Storage: NA (not available at site), (only) IPv4, Dual stack (and not tested), Testing, Tested

Notes:

- The tickets are submitted progressively over time, and not all sites are present currently.

Some experiments track the IPv6 readiness status independently:

- ALICE: <http://alimonitor.cern.ch/ipv6/>
- CMS: <https://twiki.cern.ch/twiki/bin/view/CMS/IPv6Status4Sites>
- USATLAS:
https://docs.google.com/spreadsheets/d/1d2FbmFoXZkBP_cAmJ5q5kWgdsGnWuyFT0ot1n9Gf4ns/edit?usp=

Experiment Specific checks

ATLAS

For ATLAS, before you migrate your storage to IPv6, please send an email for information to atlas-adc-ddm-support@cern.ch and atlas-adc-dpa@cern.ch

ATLAS setup an ETF IPv6 only testing node to check the behaviour of the sites and in general

- check FTS monitoring with IPv6 filter to make sure transfers are succeeding.
- check Panda and HammerCloud to make sure there are not changes in failure rates due to the IPv6 migration

Reports

Report 14/09/2017

A GGUS support unit for IPv6 in GGUS has been created. Some experts from the HEPiX IPv6 are volunteering to be members of it.

A WLCG broadcast will be sent very soon with this content:

The WLCG management and the LHC experiments approved several months ago (+) a deployment plan for IPv6 (++) which requires that:

- all Tier-1 sites provide dual-stack access to their storage resources by April 1st 2018
- all Stratum-1 and FTS instances for WLCG need to be dual-stack by April 1st 2018
- the vast majority of Tier-2 sites provide dual-stack access to their storage resources by the end of Run2 (end of 2018).

All WLCG sites are therefore invited to plan accordingly in case they have not yet met these requirements. Individual tickets will be sent in the coming weeks to Tier-2 sites (Tier-1 sites are already tracked separately) to track their progress.

Various support channels are available:

- GGUS via a dedicated support unit (WLCG IPv6): official support channel
- LCG rollout list (LCG-ROLLOUT@JISCMailNOSPAMPLEASE.AC.UK): community support

Interested sites may also join the HEPiX IPv6 working group (<https://hepixon-ipv6.web.cern.ch/>), which provides some documentation.

(+)

<https://espace.cern.ch/WLCG-document-repository/Boards/MB/Minutes/2016/MB-Minutes-160920-v1.pdf>

(++)

<https://indico.cern.ch/event/467577/contributions/1976037/attachments/1340008/2017561/Kelsey20sep16.pdf>

Report 29/09/2016

See slides [☞](#).

Report 02/06/2016

Next week's pre-GDB is devoted to IPv6, as well as two-hours slot in the GDB. The main topics to be discussed are:

- Experiment requirements
- Status of support to IPv6-only CPUs
- Experience on dual-stack services
- Monitoring and IPv6
- Security and IPv6
- Status of WLCG tiers and LHCOPN/LHCONE

Report 05/11/2015

- Deploying an instance of ETF (new implementation of Nagios for SAM) to test the nodes in the IPv6 testbed

Report 17/09/2015

Update on the status of IPv6 deployment in WLCG (from Bruno Hoefft)

Tier-1			
Site	LHCOPN IPv6 peering	LHCONE IPv6 peering	perfSONAR via IPv6
ASGC	-	-	-
BNL	not on their priority list		
CH-CERN	yes	yes	LHC[OPN/ONE]
DE-KIT	yes	yes	LHC[OPN/ONE]
FNAL	yes	yes	LHC[OPN/ONE] but not yet visible in Dashboard
FR-CCIN2P3	yes	yes	LHC[OPN/ONE] but not yet visible in Dashboard
IT-INFN-CNAF	-	yes	LHCONE
NDGF	yes	yes	LHC[OPN/ONE]
ES-PIC	yes	yes	LHCOPN
KISTI	started but no peering implemented		
NL-T1	no peering implemented		
TRIUMF	IPv6 peering planned at end of 2015		
RRC-KI-T1	-	-	-

Tier-2		
Site	LHCONE IPv6 peering	perfSONAR
DESY	yes	LHCONE
CEA SACLAY	yes	-
ARNES	yes	-
WISC-MADISON	yes	-
UK sites	QMUL peers with LHCONE but not for IPv6	

Prague FZU	IPv6 still working but the previous contact person left
------------	---

There are additional IPv6 perfSONAR servers at Tier-2 centres, but not via LHCONE.

Report 07/05/2015

- LHCb: DIRAC was made IPv6-compatible back in November, but testing has started in April: a DIRAC installation on a dual stack machine is running at CERN. Successfully tested that can be contacted from IPv6 and IPv4 nodes and can run jobs submitted from LXPLUS. However, 50% of client connections fail, which was hidden by automatic retries, and it was found to be caused by a CERN python library (wrong IPV6 address returned).

Report 02/04/2015

- FTS3 testbed operational, with servers at KIT and Imperial College both working fine
- The following sites activated IPv6:
 - ◆ LHCOPN: CERN, KIT, NDGF, PIC, NL-T1, IN2P3-CC, HIP
 - ◆ LHCONE: CERN, CEA Saclay, IN2P3 -CC, IJS (NDGF site)
- OSG is testing (among other middleware) glideinWMS. The central manager, frontend and schedd machines have to be dual-stack and can talk to IPv4, IPv6 and dual-stack startd's. glideinWMS must specify to wget that it prefers IPv6 ([details](#))
- OSG confirmed that Bestman2 is IPv6-compliant, but srmcp is not (it has not been patched for the extensions needed for IPv6)
- squid 2 is not IPv6-compliant, while squid 3 is. OSG is still using squid 2
- Duncan's dual stack mesh includes several dual-stack perfSONAR instances (~14 sites included) ([link](#))

Task Overview

Task	Deadline	Progress	Affected VO	Affected Sites	Comment
WLCG applications readiness		60%	All	All	Maintain software component readiness information in this table
User scenarios	100%	All	All	Define the relevant user scenarios to be tested by the experiments	
Experiment tests	ATLAS, CMS started	All	All	Have the experiments to test their main workload/data management tools and central services over Pv6	

Scenarios

We can classify the actors in these categories:

Users

end users (human or robotic) using a client interface to interact with services

Jobs

user processes running on a batch node

Site services

services present at all sites (CE, SE, BDII, CVMFS, ARGUS, etc.)

Central services

services presents at a few sites (VOMS, MyProxy, Frontier, Nagios, etc.)

The following table describes the requirements of the corresponding nodes in terms of IP protocol in a timescale limited to a few years from now.

Node	Network	Requirement
User	IPv4	MUST work, as users can connect from anywhere
User	IPv6	SHOULD work, but it would concern only very few users working from IPv6-only networks
User	dual stack	MUST work, it should be the most common case in a few years
Batch	IPv4	MUST work, as some batch systems might not work on IPv6, or e.g. the site might want to use AFS internally
Batch	IPv6	MUST work, as some sites might exceed their IPv4 allocation otherwise
Batch	dual stack	MUST work, as some sites might want to use legacy software but also be fully IPv6-ready (e.g. CERN)
Site service	IPv4	MUST work, as many institutes will not adopt IPv6 for some years and backward compatibility is required
Site service	IPv6	SHOULD work, but it will have to work when there will be new sites with only IPv6
Site service	dual stack	MUST work, it should be the most common case in a few years
Central service	IPv4	MAY work, but central services can be expected to run at sites with an IPv6 infrastructure
Central service	IPv6	MAY work, as above sites certainly have an IPv4 infrastructure
Central service	dual stack	MUST work, and all above sites are expected to be able to provide dual-stack nodes

Existing WLCG sites may have only IPv4 and will not be forced by WLCG to deploy IPv6 to continue working. This is obviously true for resources that WLCG cannot control (opportunistic, clouds, etc.). On the other hand, WLCG should allow new sites to deploy only IPv6 in a scenario where IPv4 addresses cannot be obtained. Therefore, a realistic scenario is such that some sites will be accessible only via IPv4, some only via IPv6 and some via both protocols. Similarly, users may have to work from nodes supporting only IPv4, only IPv6 or both.

An additional constraint comes from storage federations: it is obvious that sites using only a protocol will not be able to read data from sites using only the other protocol. Therefore sites wishing to participate to a storage federation will need to deploy their SEs in dual stack, when sites with IPv6-only WNs become a reality.

In such scenario, central services are obviously required to work in dual stack using both protocols and be hosted at eligible sites.

All middleware used at a site must work via both protocols, to accommodate IPv4/6-only sites. A site is recommended to deploy the services it exposes to the outside in dual stack, but it is not a requirement (apart in the storage federation case).

To summarise, these are the testing scenarios to be considered:

- central services **MUST** be deployed on dual stack nodes and tested using both protocols
- site services **MUST** be deployed on dual stack nodes and tested using both protocols (which guarantees they work in IPv4/6 mode)
- user clients and libraries **MUST** be deployed on dual stack nodes and tested using both protocols (which guarantees they work in IPv4/6 mode)
- batch nodes **MUST** be deployed on IPv4, IPv6 or dual stack nodes (not all three configurations might

be possible for a given site, though).

From now on all services are assumed to run on dual stack nodes. Moreover, when testing on a dual stack testbed, tests need to be run by forcing IPv4 or IPv6 either on the client node.

Use cases to test

Basic job submission

The user submits a job using the native middleware clients (CREAM client, Condor-G, etc.) or intermediate services (gLite WMS, glideinWMS, PanDA, DIRAC, AliEN, etc.).

User	CE	Batch	Notes
IPv4	dual stack	IPv4	
IPv4	dual stack	dual stack	
IPv4	dual stack	IPv6	
dual stack	dual stack	IPv4	also forcing IPv6 on user node
dual stack	dual stack	dual stack	also forcing IPv6 on user node
dual stack	dual stack	IPv6	also forcing IPv6 on user node

All "auxiliary" services (ARGUS, VOMS, MyProxy, etc.) are supposed to work on dual stack, but may run on IPv4 initially for practical purposes, to avoid having a full dual-stack service stack right from the beginning. This remark is totally general and applies to all tests described below.

In case of intermediate services, the tests become much more complex given the higher number of services involved.

Basic data transfer

The user copies a file from his node to a SE and back.

User	SE	Notes
IPv4	dual stack	
dual stack	dual stack	also forcing IPv6 on user node

In this context, a batch node reading/writing to a local or remote SE is treated as a user node. The file copy MUST be tried with all protocols supported by the SE.

Third party data transfer

The user replicates a bunch of files between sites via FTS-3.

User	SEs (source, destination)	FTS-3	Notes
IPv4	dual stack	dual stack	in practice FTS3 could be IPv4 forever
dual stack	dual stack	dual stack	in practice FTS3 could be IPv4 forever

Production data transfer

The user replicates a dataset using experiment-level tools (PhEDEx, DDM, DIRAC, etc.).

User	SEs (source, destination)	FTS-3	Experiment tool	Notes
IPv4	dual stack	dual stack	dual stack	
dual stack	dual stack	dual stack	dual stack	

Conditions data

A job access conditions data from a batch node via Frontier/squid.

Batch	squid	Frontier	Notes
IPv4	dual stack	dual stack	
IPv6	dual stack	dual stack	
dual stack	dual stack	dual stack	

Experiment software

A job accesses experiment software in CVMFS from a batch node.

Batch	squid	Stratum0/1	Notes
IPv4	dual stack	dual stack	
IPv6	dual stack	dual stack	
dual stack	dual stack	dual stack	

Experiment workflow

A user runs a real workflow (event generation, simulation, reprocessing, analysis).

This test combines all previous tests into one.

Information system

A user queries the information system

User	BDII	Notes
IPv4	dual stack	
dual stack	dual stack	

Job monitoring

Monitoring information from jobs, coming either from central services or from batch nodes via messaging systems, is collected, stored and accessed by a user.

User	Monitoring server	Messaging system	Batch	Notes
IPv4	dual stack	dual stack	IPv4	
IPv4	dual stack	dual stack	IPv6	
IPv4	dual stack	dual stack	dual stack	
dual stack	dual stack	dual stack	IPv4	
dual stack	dual stack	dual stack	IPv6	
dual stack	dual stack	dual stack	dual stack	

IPv6 compliance of WLCG services

AliEN

ARC

ARGUS

BDII

- Contact: Maria Alandes
- Status: BDII is IPv6 compliant since the EMI 2 release. (OpenLDAP OK since v2)
 - ◆ Further info on the investigation here: <https://savannah.cern.ch/bugs/index.php?95839>
 - ◆ In order to enable the IPv6 interface, a yaim variable BDII_IPV6_SUPPORT needs to be set to 'yes' (default is no). This is all described in the sys admin guide and the corresponding release notes.

CASTOR

cfengine

CMS Tag Collector

cmsweb

CREAM CE

CVMFS

Dashboard Google Earth

dCache

DIRAC

DPM

- Contact: Fabrizio Furano
- Status:
 - ◆ SRM and rfio need a config workaround
 - ◇ <https://tomtools.its.cern.ch/jira/browse/GTSL-31>
 - ◇ <https://hepiv6.web.cern.ch/content/slc6-actually-glibc-29-change-aipassive-bind-pfunspec>
 - ◆ Glasgow are evaluating DPM on IPv6 as part of their Hepix involvement (Sam Skipsey). Quite a lot is working, details should come from Sam.
- Dependencies:
 - ◆ MySQL 5.5 (min version for IPv6) not available for SL6, DPM has been successfully deployed with MariaDB (IPv6 compliant), works out of the box.
 - ◆ xrootd frontend - awaiting v4
 - ◆ apache >=2.2 (used for HTTP/DAV interface) supports ipv6

EGI Accounting Portal

EOS

Experiment Dashboards

Frontier

FTS

- Contact: Michail Salichos for both FTS2 and FTS3
- FTS2 Status:
 - ◆ Francesco Prelz has checked FTS2 in the past.
 - ◆ Should be OK, except for the Globus issue https://ggus.eu/ws/ticket_info.php?ticket=86101
 - ◆ By default, would **not** fix this if broken.
- FTS3 status:
 - ◆ looks good for FTS3 and its dependencies (modulo the globus issue mentioned above)
 - ◆ with the exception of Active MQ-cpp - the messaging side will need some attention for IPv6 support.

Ganglia

GFAL/lcg_util

- Contact:
 - ◆ GFAL2: Adrien Devresse
 - ◆ gfal/lcg_util: Alejandro Alvarez Ayllon
- Status: gfal2 is plugin based, so it all depends on the plugin
 - ◆ HTTP: neon supports IPv6
 - ◆ SRM: gsoap supports IPv6
 - ◆ GridFTP: it is enabled - <https://its.cern.ch/jira/browse/LCGUTIL-4>
 - ◆ DCAP: unknown
 - ◆ LFC and RFIO: should work
 - ◆ BDII: OpenLDAP does support ipv6
 - ◆ Note on gsoap - this is used for WS in a number of cases. It supports IPV6 but this has to be enabled at compile time, so in certain builds it could be missing.
- Note: gfal/lcg_util is probably OK, not tested, and by default would **not** fix this if broken.

glideinWMS

GOADB

Gratia Accounting

Gridsite

GridView

Gstat

iCMS

LFC

- See details for DPM

Nagios

PanDA

perfSONAR

PhEDEx

REBUS

SAM

Scientific Linux

STD IB and QA pages

StoRM

Ticket system (GGUS)

various D web tools

VOMS

gLite WMS

xroot

DualStack Virtual Machines at CERN

In the CERN Agile Infrastructure it is possible to ask for a Virtual Machine and set it up as dual stack node. This allows procuring "hardware" for testing of any kind of service on dual stack. To setup a dual stack VM at CERN please follow the instructions at the [DualStackCERNVirtualMachine](#) page

IPv6 Site Survey

The results of the 2014 IPv6 Site Survey are reported in...

SAM migration to IPv6

This page details the steps to be accomplished to use SAM to test IPv6 endpoints.

-- AndreaSciaba - 15-Jul-2013

This topic: LCG > Wlclpv6

Topic revision: r170 - 2021-02-25 - AndreaSciaba



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