

LHC[OPN/ONE] → IPv6 → status

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STEINBUCH CENTRE FOR COMPUTING - SCC



proposal of last meeting → accepted with no objections:
activities/requests → require IPv6 readiness

- Request
 - all Tier-1s offer IPv6 peering to LHCOPN
 - provide a dual stack PerfSONAR machine
 - by **April 2015**.
- Request
 - Tier-2s offer IPv6 peering to LHCONE
 - provide a dual stack PerfSONAR machine
 - by **August 2015**.



LHCOPN → current IPv6 CIDRs



CH-CERN	513 (CERN) 61339 (CERN-WIGNER)	-	128.142.0.0/16 188.184.128.0/17 188.185.128.0/17 (AS61339)	-	2001:1458:301::/48 2001:1458:302::/48 2001:1459:301::/48
DE-KIT	34878 (FZK)	192.16.166.32/30 192.16.166.36/30	192.108.45.0/24 192.108.46.0/23	2001:1458:302:9::/64 2001:1458:302:D::/64	2a00:1398:104::/46
ES-PIC	43115 (PIC)	192.16.166.56/30 192.16.166.60/30	193.109.172.0/24	2001:1458:302:11::/64	2001:67c:1148:200::/64 2001:67c:1148:201::/64 2001:67c:1148:202::/64
FR-CCIN2P3	789 (IN2P3)	192.16.166.40/30 192.16.166.44/30 (not used)	193.48.99.0/24	2001:1458:302:8::/64	2001:660:5009:9::/64
IT-INFN-CNAF	137 (GARR)	192.16.166.16/30 192.16.166.192/29	131.154.128.0/17	? 2001:1458:302:27::1 ?	2001:760:4205::/48
KR-KISTI	1237 (Kreonet)	192.16.166.164/30	134.75.125.0/24	2001:1458:302:29::/64	-
NDGF	39590 (NDGF)	192.16.166.48/30 192.16.166.52/30	109.105.124.0/22	2001:1458:302:F::/64	2001:948:40::/42
US-FNAL-CMS	3152 (FNAL)	192.16.166.24/30 192.16.166.28/30 192.16.166.6/30	131.225.2.0/24 131.225.160.0/24 131.225.184.0/22 131.225.188.0/22	v3506 2001:1458:302:22::/64 v3500 2001:1458:302::/64 v3501 2001:1458:302:1::/64	2620:6a:0:2::/64

■ Tier-1s still missing:

■ NL-T1

■ BNL

■ ASGC

■ Triumf

■ RAL → Janet no IPv6 peer

■ Russian sites

■ RRC-KI

■ JINR



PerfSONAR of Tier-1s

IPv6



Tier-1	LHCOPN IPv6 Peering	LHCONE IPv6 Peering	Perfsonar via IPv6
ASGC	--	--	
BNL	not on their priority list		
CH-CERN	✓	✓	LHC[OPN/ONE]
DE-KIT	✓	✓	LHC[OPN/ONE]
FNAL	✓	✓	LHC[OPN/ONE]
FR-CCIN2P3	✓	✓	LHCONE
IT-INFN-CNAF	--	✓	LHCONE
NGDF	✓	✓	LHC[OPN/ONE]
ES-PIC	✓	✓	LHCOPN
KISTI	startet but no IPv6 Peering implemented		
NL-T1			peering and dual-stack Perfsonar in preparation
Triumf	IPv6 peering planned at end of 2015		
RRC-KI-T1	--	--	

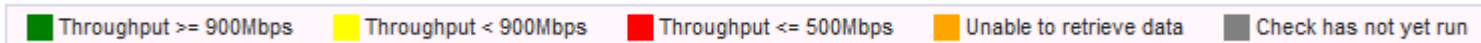
LRZ ?

Tier-2		
	LHCONE IPv6 Peering	Perfsonar
DESY	✓	LHCONE
CEA SACLAY	✓	LHCONE
ARNES	✓	Grille de Recherche d'Ile de France (GRIF)
WISC-MADISON	✓	LHCONE
Ann Arbor	✓	still waiting for dual-stack PerfSONAR
there are additional IPv6 Perfsonar server at Tier-2 Centers, but not via LHCONE		
Prag FZU		GPI
uk sites		london imperial college proposed to peer with LHCONE (but no IPv6)
UK QML		GPI
UKI NorthGrid		GPI
UKI SouthGrid		GPI
Univ. Nebraska		GPI
Infn Milano		GPI
UKI-SCOTGRID-ECDF		GPI
US-UCSD		GPI

GPI – general purpose internet

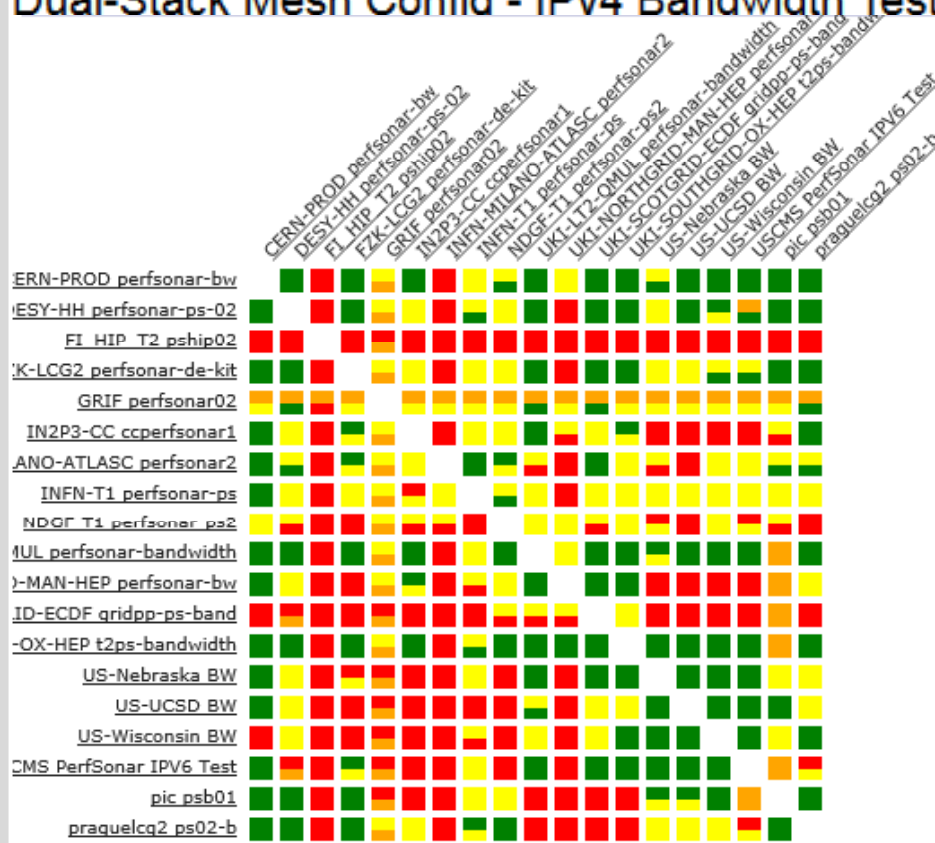


dual stack PerfSONAR (WEB presents)



Dual-Stack Mesh Config - IPv4 Bandwidth Test

Dual-Stack Mesh Config - IPv6 Bandwidth Test



ToDo

■ GARR

- Traceroute -s perfsonar-ps.cnaf.infn.it -c perfsonar-bw.cern.ch - **OK**
- Traceroute -s perfsonar-ps.cnaf.infn.it -c perfsonar-bw.cern.ch - **failed**
- Not possible, does not reach destination → routing issue?
→ solved – CERN is rejecting traceroute → exception for perfsonar?
- The remaining tier-1 sites → road map ?
- IPv6 effort still ongoing → expect that IPv6 production services will be available during this year
- Automated collection of all IPv6 prefixes of LHCONE → Michael O'Conner ?

Questions ?



LHC IPv6 Working Group

