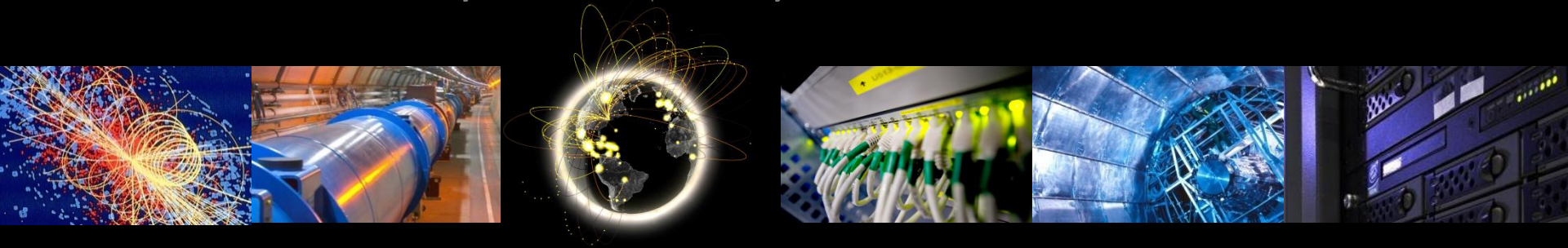


# LHCOPN monitoring status

John Shade /CERN IT-CS

January 2012 Berkeley



# Changes since June

- PIC, ASGC, TRIUMF now have two perfSONAR-PS monitoring nodes – one dedicated to latency tests, and one to bandwidth tests. Only IN2P2 & SARA remain with a single node
- Tom Wlodek has added a lot of functionality + documentation to his dashboard
  - create alarms for primitive services
  - manage user identities and authorizations
  - matrix “on-demand”
- Sander’s dashboard still works, but will need to switch to using PS Measurement Archives – unless the archive at DFN can be made perfSONAR flavour agnostic!

# More functionality

## RACF

Grid Group

## The Experimental Independent perfSONAR Dashboard

Status as of: Sun Jan 29 20:13:49 EST 2012

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[Individual Clouds:](#)

[USATLAS](#)

[IT](#)

[LHCOPN](#)

[LHCONE](#)

[CA-ATLAS](#)

[Inter Cloud Tests:](#)

[AGLT2-IT](#)

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[RACF dashboard](#)

[perfSONAR dashboard \(old\)](#)

[RACF dashboard \(test\)](#)

[perfSONAR dashboard \(old,test\)](#)

[Dashboard documentation](#)

## List of Service Matrices

[Create new Throughput Service Matrix](#) or [Create new Latency Service Matrix](#) or [Create new Traceroute Service Matrix](#)

[Create new APD Latency Service Matrix](#)

<a href="#">IT cloud throughput matrix</a>	throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">IT cloud latency matrix</a>	latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">US cloud throughput measurement</a>	throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">US cloud latency measurement</a>	latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">LHCOPN Cloud Throughput Matrix</a>	throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">LHCOPN Cloud Latency Matrix</a>	latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">AGLT2-IT Throughput</a>	throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">AGLT2-IT Latency</a>	latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">FR-US Throughput</a>	throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">FR-US Latency</a>	latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">CA-ATLAS Throughput Matrix</a>	throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">CA-ATLAS Latency Matrix</a>	latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">LHCONE Throughput Matrix</a>	throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">LHCONE Latency Matrix</a>	latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">USATLAS APD Throughput v2</a>	apd_throughput	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">USATLAS APD Latency</a>	apd_latency	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>
<a href="#">USATLAS Traceroute Matrix</a>	traceroute	<a href="#">edit matrix</a>	<a href="#">delete matrix</a>	<a href="#">add/remove hosts</a>	<a href="#">select scheduler</a>

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# Sander's High-Level Dashboard

## LHCOPN Dashboard

[Home](#)

### Current status

Last update: Mon, 30 Jan 2012 15:23:28 GMT

From / To	CA-TRIUMF	CH-CERN	DE-KIT	ES-PIC	FR-CCIN2P3	IT-INFN-CNAF	NDGF	NL-T1	TW-ASGC	UK-T1-RAL	US-FNAL-CMS	US-T1-BNL
CA-TRIUMF												
CH-CERN												
DE-KIT												
ES-PIC												
FR-CCIN2P3												
IT-INFN-CNAF												
NDGF												
NL-T1												
TW-ASGC												
UK-T1-RAL												
US-FNAL-CMS												
US-T1-BNL												

[JSON feed](#)

**Legend:** OK Deviation from Baseline Critical Unknown

<http://casper.grid.sara.nl/>

# Sander's history

## LHCOPN Dashboard

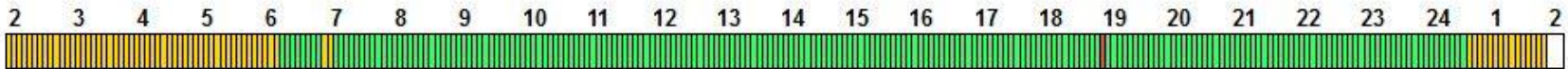
[Home](#)

### Status history

Connection from  to  from date  to



24 hour status (time between 2012-01-29 01:07:18 UTC and 2012-01-30 01:07:18 UTC)



2012-01-29 17:55:00 UTC Measured:3.13msec - Baseline:4.20msec = -25.4% (packetloss 0%)

2012-01-29 18:00:00 UTC Measured:3.11msec - Baseline:4.20msec = -26.1% (packetloss 0%)

2012-01-29 18:05:00 UTC Measured:3.07msec - Baseline:4.20msec = -26.9% (packetloss 0%)

2012-01-29 18:10:00 UTC Measured:3.08msec - Baseline:4.20msec = -26.7% (packetloss 2%)

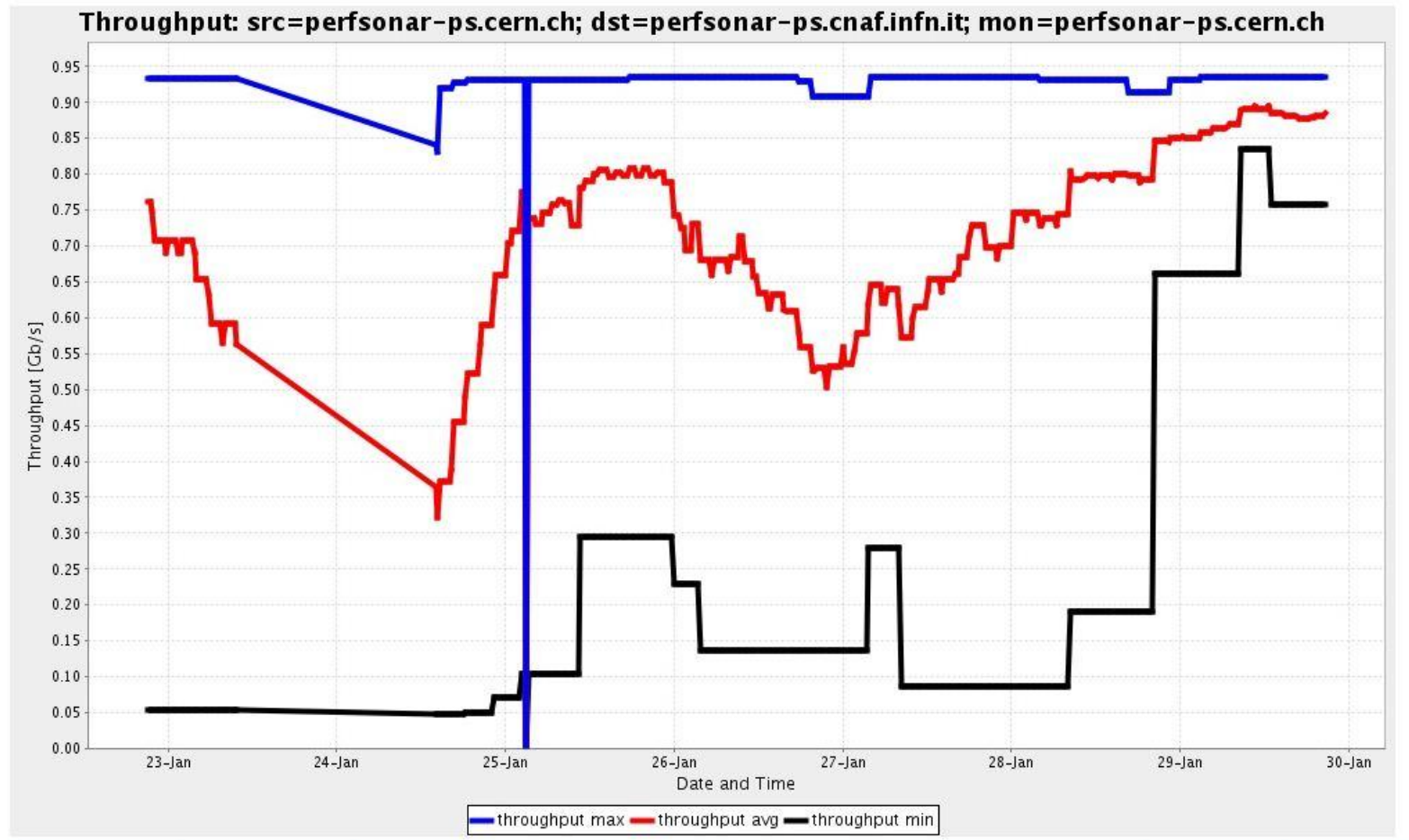
2012-01-29 18:15:00 UTC Measured:3.06msec - Baseline:4.20msec = -27.1% (packetloss 0%)

Legend: OK Deviation from Baseline Critical Unknown

# Tom's History Views

Source=perfsnar-ps.cern.ch, destination=perfsnar-ps.cnaf.infn.it, monitor=perfsnar-ps.cern.ch

Past 6 hours  Past 12 hours  Past 24 hours  Past 48 hours  Past week  Past month  Past year  All data



# LHCOPN Matrices – June 2011

## LHCOPN Cloud Throughput Matrix

	---	0	1	2	3	4	5	6	7	8	9	10	11
0:BNL (lhcomon.bnl.gov)	---	0.20	0.71	0.81	0.07	0.61	0.00	0.77	0.51	0.03	0.75	0.64	
1:ASGC (perfonar-ps.twgrid.org)	0.60	---	0.27	0.45	0.12	0.44	0.00	0.24	0.27	0.02	0.48	0.03	
2:CC-IN2P3 (ccperfonar-lhcopn.in2p3.fr)	0.29	0.03	---	0.94	0.03	0.05	0.93	0.63	0.39	0.08	0.82	0.19	
3:CERN (perfonar-ps.cern.ch)	0.82	0.49	0.94	---	0.45	0.65	0.94	0.93	0.70	0.40	0.93	0.37	
4:CNAF (perfonar-ps.cnaf.infn.it)	0.21	0.23	0.36	0.61	---	0.00	0.61	0.49	0.43	0.40	0.52	0.12	
5:FNAL (psonar1.fnal.gov)	0.41	0.00	0.00	0.00	0.09	---	0.00	0.82	0.00	0.00	0.00	0.10	
6:KIT (perfonar-de-kit.gridka.de)	0.75	0.50	0.94	0.94	0.05	0.88	---	0.92	0.91	0.35	0.93	0.53	
7:NDGF (perfonar-ps2.ndgf.org)	0.61	0.49	0.63	0.72	0.15	0.00	0.64	---	0.68	0.18	0.84	0.15	
8:PIC (perfonar-ps.pic.es)	0.22	0.12	0.84	0.87	0.26	0.20	0.20	0.65	---	0.15	0.62	0.19	
9:RAL (perfonar-ps01.gridpp.rl.ac.uk)	0.32	0.16	0.39	0.45	0.24	0.00	0.20	0.41	0.41	---	0.48	0.08	
10:SARA (ps.lhcopn-ps.sara.nl)	0.76	0.53	0.46	0.70	0.02	0.17	0.83	0.85	0.18	0.28	---	0.54	
11:TRIUMF (perfonar-ps.lhcopn-mon.triumf.ca)	0.08	0.01	0.12	0.05	0.04	0.24	0.11	0.24	0.08	0.01	0.00	---	

## LHCOPN Cloud Latency Matrix

	---	0	1	2	3	4	5	6	7	8	9	10	11
0:BNL (lhperformon.bnl.gov)	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	5.0	20.0	0.0	56.0
1:ASGC (perfonar-ps.twgrid.org)	7.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	5.0	30.0	0.0	70.0
2:CC-IN2P3 (ccperfonar-lhcopn.in2p3.fr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	29.0	0.0	48.0
3:CERN (perfonar-ps2.cern.ch)	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	3.0	29.0	0.0	63.0
4:CNAF (perfonar-ow.cnaf.infn.it)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	25.0	0.0	65.0
5:FNAL (psonar2.fnal.gov)	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	24.0	0.0	111.0
6:KIT (perfonar2-de-kit.gridka.de)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	35.0	0.0	62.0
7:NDGF (perfonar-ps.ndgf.org)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	30.0	0.0	61.0
8:PIC (perfonar-ps.pic.es)	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	2.0	0.0	20.0	0.0	47.0
9:RAL (perfonar-ps02.gridpp.rl.ac.uk)	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	3.0	0.0	0.0	0.0	62.0
10:SARA (ps.lhcopn-ps.sara.nl)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	60.0
11:TRIUMF (perfonar-ps.lhcopn-mon.triumf.ca)	1.0	2.0	1.0	1.0	0.0	16.0	0.0	0.0	3.0	0.0	1.0	0.0	0.0

<https://perfonar.usatlas.bnl.gov:8443/exda/?page=25&cloudName=LHCOPN>

# LHCOPN Matrices – Jan. 2012

BNL	CNAF	CC-IN2P3	CERN	SARA	ASGC
NDGF	PIC	KIT	TRIUMF	RAL	FNAL

LHCOPN Cloud Throughput Matrix

	---	0	1	2	3	4	5	6	7	8	9	10	11
0:BNL (lhcmon.bnl.gov)	---	0.00	0.62	0.00	0.55	0.70	0.52	0.52	0.00	0.02	0.36	0.00	
1:ASGC (lhc-bandwidth.twgrid.org)	0.36	---	0.00	0.00	0.00	0.36	0.07	0.00	0.00	0.00	0.00	0.00	
2:CC-IN2P3 (ccperfonar-lhcopn.in2p3.fr)	0.20	0.05	---	0.00	0.78	0.03	0.86	0.93	0.18	0.05	0.92	0.00	
3:CERN (perfonar-ps.cern.ch)	0.54	0.00	0.94	---	0.86	0.51	0.91	0.92	0.00	0.13	0.93	0.00	
4:CNAF (perfonar-ps.cnaf.infn.it)	0.59	0.03	0.48	0.00	---	0.40	0.62	0.40	0.61	0.06	0.50	0.00	
5:FNAL (psonar1.fnal.gov)	0.86	0.00	0.73	0.00	0.53	---	0.49	0.33	0.00	0.00	0.00	0.00	
6:KIT (perfonar-de-kit.gridka.de)	0.53	0.00	0.94	0.00	0.93	0.51	---	0.92	0.00	0.00	0.93	0.00	
7:NDGF (perfonar-ps2.ndgf.org)	0.61	0.00	0.75	0.00	0.62	0.00	0.73	---	0.00	0.02	0.83	0.00	
8:PIC (perfonar-ps-bandwidth.pic.es)	0.50	0.01	0.00	0.00	0.51	0.00	0.62	0.61	---	0.00	0.47	0.00	
9:RAL (perfonar-ps01.gridpp.rl.ac.uk)	0.24	0.00	0.26	0.00	0.00	0.13	0.13	0.13	0.00	---	0.13	0.00	
10:SARA (ps.lhcopn-ps.sara.nl)	0.72	0.00	0.45	0.00	0.45	0.00	0.73	0.75	0.00	0.00	---	0.00	
11:TRIUMF (ps-bandwidth.lhcopn-mon.triumf.ca)	0.80	0.00	0.34	0.00	0.00	0.09	0.33	0.29	0.00	0.00	0.41	---	

LHCOPN Cloud Latency Matrix

	---	0	1	2	3	4	5	6	7	8	9	10	11
0:BNL (lhcperfonar.bnl.gov)	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0
1:ASGC (lhc-latency.twgrid.org)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2:CC-IN2P3 (ccperfonar-lhcopn.in2p3.fr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3:CERN (perfonar-ps2.cern.ch)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4:CNAF (perfonar-ow.cnaf.infn.it)	3.0	1.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	0.0
5:FNAL (psonar2.fnal.gov)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6:KIT (perfonar2-de-kit.gridka.de)	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7:NDGF (perfonar-ps.ndgf.org)	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
8:PIC (perfonar-ps-latency.pic.es)	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
9:RAL (perfonar-ps02.gridpp.rl.ac.uk)	1.0	2.0	1.0	0.0	0.0	1.0	1.0	2.0	0.0	2.0	0.0	0.0	0.0
10:SARA (ps.lhcopn-ps.sara.nl)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11:TRIUMF (ps-latency.lhcopn-mon.triumf.ca)	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.0	0.0	0.0	0.0	0.0

<https://perfonar.usatlas.bnl.gov:8443/exda/?page=25&cloudName=LHCOPN>



# Some Observations

- Situation should be better that it is!
- Admittedly:
  - LHCOPN is just one of the networks that most site admins have to manage
  - Each site typically has its preferred monitoring suite (e.g. CERN=Spectrum), not necessarily perfSONAR-PS
- But:
  - No real excuse for not having a fully working base-line
- Some security concerns with vanilla perfSONAR-PS toolkit; developers are aware of them
- Time for a quick clinic sometime today?

# Conclusion & whither now?

- Few issues for WLCG within the LHCOPN itself
- perfSONAR-PS has already been used effectively to debug Tier2 transfer problems with CERN
- Need to sort out site issues once and for all, and then ensure stability!! Set alarms on primitive services!
- Can the Tier1 perfSONAR installations cope once numerous TIER2s start soliciting them?
- Would be nice to be able to query link status programatically!
- perfSONAR-PS & MDM MAs must be compatible!

