



Enabling Grids for E-science

The **eNOC** featuring DownCollector

<https://ccenoc.in2p3.fr>

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www.eu-egee.org



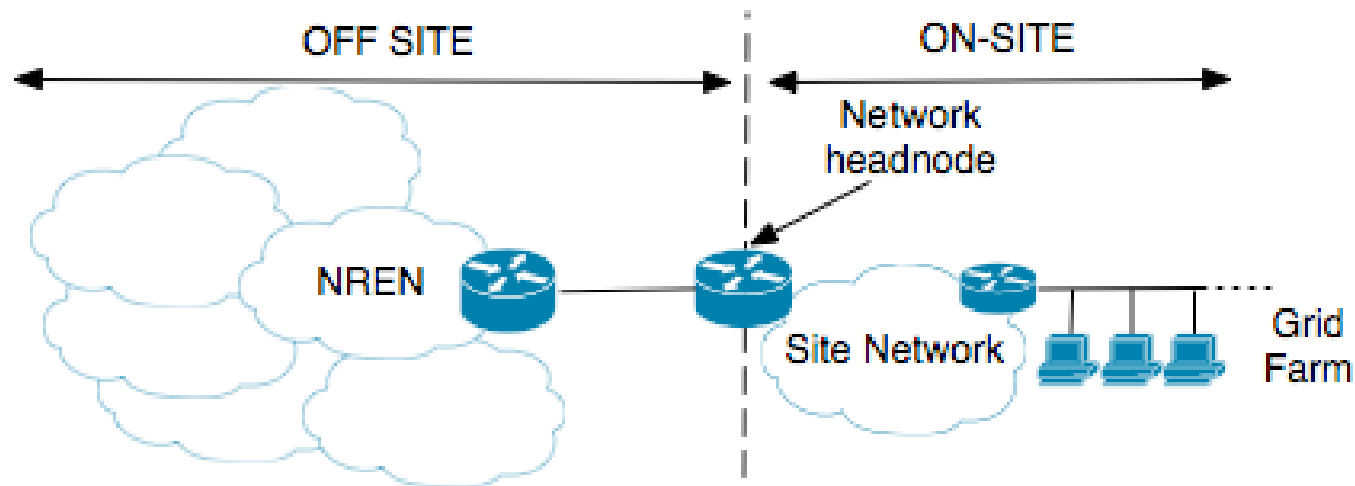
Information Society
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- **A lot of reported problems wrongly categorized**
 - Unknown error = network problem
 - Discarded when network is back, no in-depth understanding of some errors
 - support units/sites disturbed
- **ENOC's network TT matching onto Grid Topology still rough**
 - Under improvement but **VERY HARD** to foresee Grid impacts
- **No pure network monitoring**
 - Heavy to deploy and handle (1600 certified hostnames into GOCDB3)
- **Existing framework (SAM/SFT) not fully designed for**
 - Frequency, load, results analysis
- **ENOC needs to accurately monitor/assess network availability**

- **DownCollector, tool to assess network availability of Grid Sites**
 - Currently only on certified sites (~ 270 sites, 1600 nodes)
 - Also core Grid services (GOCDB, SAM, CIC...)
 - A hostname + a Grid service = a Grid node
- **Each Grid node probed (with 'nmap') every 2 minutes**
 - Lightweight
 - TCP port chosen according to GOCDB3 NODETYPE
 - Binary results:
 - Reached
 - Unreached (Service failure, network problem, power failure...)
 - Unique source host...
- **Result aggregated per sites**
 - Scheduled downtimes managed
 - **Site in trouble if none of its nodes reached**
 - Hide host problems to the ENOC

- Need to know where is the outage
 - Not same support procedures and responsibilities



- Network 'Headnode' tested during site's troubles
 - To be **carefully** chosen
 - If reached: ON-SITE
 - If unreached: OFF-SITE
 - Seems to give good results so far ...

- Through web interface
 - Trouble, site, node details

Site	Current status	Date started UTC	Date ended UTC	Date updated UTC	Downtime	Location
YerPhI	UNREACHED	2007-09-18 09:06:36		2007-09-18 11:12:31	2 hours 5 minutes 55 seconds	ON-SITE
INFN-ROMA2	UNREACHED	2007-09-18 06:30:17		2007-09-18 11:12:43	4 hours 42 minutes 26 seconds	OFF-SITE
cpDIASie	REACHED	2007-09-18 10:24:41	2007-09-18 10:28:50	2007-09-18 10:28:50	4 minutes 9 seconds	ON-SITE
WARSAW-EGEE	REACHED	2007-09-18 02:02:27	2007-09-18 02:06:17	2007-09-18 02:06:17	3 minutes 50 seconds	ON-SITE
Kharkov-KIPT-LCG2	REACHED	2007-09-18 01:02:44	2007-09-18 01:06:16	2007-09-18 01:06:16	3 minutes 32 seconds	OFF-SITE

Results for nodes belonging to site 'BUDAPEST':

Node type	IP	Hostname	Port	Status	Date UTC
BDII	148.6.8.152	grid152.kfki.hu	2170	OK	2007-09-18 11:08:03
CE	148.6.8.109	grid109.kfki.hu	2119	OK	2007-09-18 11:08:05
LFC	148.6.8.155	grid155.kfki.hu	5010	OK	2007-09-18 11:08:05
MON	148.6.8.154	grid154.kfki.hu	8443	OK	2007-09-18 11:08:07
PROX	148.6.8.153	grid153.kfki.hu	7512	OK	2007-09-18 11:08:07
RB	148.6.8.151	grid151.kfki.hu	9000	OK	2007-09-18 11:08:07
SE	148.6.8.100	grid100.kfki.hu	2811	OK	2007-09-18 11:08:09
SE	148.6.8.143	grid143.kfki.hu	2811	OK	2007-09-18 11:08:09

Network headnode for this site is 148.6.208.26 [bgp-peer.kfki.hu].

Results for nodes belonging to site 'RAL-LCG2':

	Node type	IP	Hostname	Port	Status	Date UTC
🔍	IC	130.246.187.158	lcgic01.gridpp.rl.ac.uk	2136	TIMEOUT	2007-09-18 11:10:09
🔍	RB-ALICE	130.246.183.139	lcgrb03.gridpp.rl.ac.uk	9000	CLOSED	2007-09-18 11:10:10
🔍	SE	130.246.179.10	dcache-tape.gridpp.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:12
🔍	SE	130.246.179.101	ralsrmc.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:10
🔍	SE	130.246.179.131	ralsrmb.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:10
🔍	SE	130.246.179.132	ralsrma.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:10
🔍	SE	130.246.179.152	ralsrme.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:10
🔍	SE	130.246.179.153	ralsrmf.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:11
🔍	SE	130.246.179.154	ralsrmd.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:11
🔍	SE	130.246.179.3	dcache.gridpp.rl.ac.uk	2811	CLOSED	2007-09-18 11:10:10
🔍	BDII	130.246.183.162	lcgbdii.gridpp.rl.ac.uk	2170	OK	2007-09-18 11:10:03
🔍	CE	130.246.183.151	lcgce02.gridpp.rl.ac.uk	2119	OK	2007-09-18 11:10:06

CE	160.6.19.129	gridgate.cp.dias.ie	2119	OK	2007-09-18 10:32:04
CE	160.6.19.129	gridgate.cp.dias.ie	2119	OK	2007-09-18 10:30:05
CE	160.6.19.129	gridgate.cp.dias.ie	2119	OK	2007-09-18 10:28:04
CE	160.6.19.129	gridgate.cp.dias.ie	2119	TIMEOUT	2007-09-18 10:26:05
CE	160.6.19.129	gridgate.cp.dias.ie	2119	TIMEOUT	2007-09-18 10:24:05
CE	160.6.19.129	gridgate.cp.dias.ie	2119	OK	2007-09-18 10:22:05
CE	160.6.19.129	gridgate.cp.dias.ie	2119	OK	2007-09-18 10:20:06

- **They are available on**
<https://ccenoc.in2p3.fr/DownCollector/>
 - Authentication with a valid Grid certificate
 - Tests details, explanations
- **‘Bookmarkable’ urls**
 - <https://ccenoc.in2p3.fr/DownCollector/?sn=pic>
 - <https://ccenoc.in2p3.fr/DownCollector/?nd=SE,Caliserv1.ct.infn.it>
- **Still some scalability issues**
 - Sometimes slow :-)
 - Limited filtering / history disclosed on the website

- **Results very useful internally for the ENOC**
 - Internal alarms
 - Is there a network problem or not?
 - Focus extra network attention to some sites, streamline procedures, help to match network TT on Grid etc.
- **Maybe also for others supports units?**
 - Useless to launch tests on unreachabeable hosts
 - Filter alarms (tests hierarchy...)
- **Cope with service unavailability at its root cause!**

- **Communicate results to others support units/sites**
 - Be sure a network problem is correctly detected and tracked, or there is no network problem :-)
 - Do not waste troubleshooting efforts
 - Avoid an unscalable use of our web interface

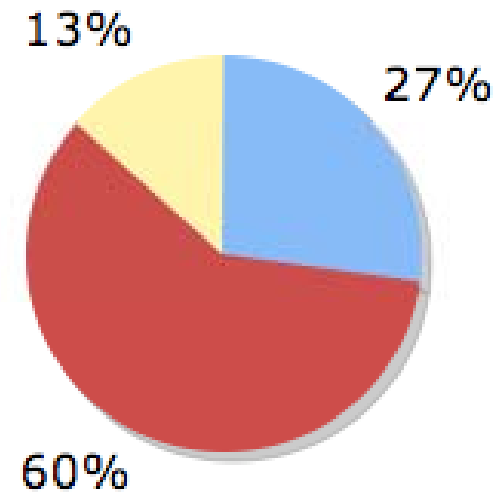
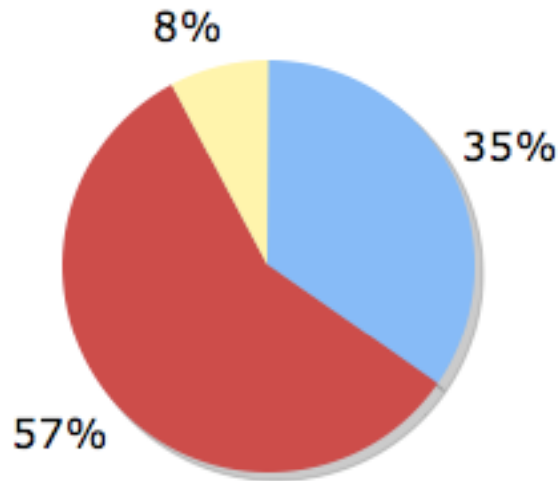
- **Sharing status**
 - Used by some PPS systems with a Nagios sensor
 - XML output easily available XML
 - COD Dashboard integration?

[npm](#) ([npm](#))

Host	Status	Services	Actions
ce1-egee.srce.hr	UP	1 OK	
cs-egee.srce.hr	UP	1 OK	
cs2-egee.srce.hr	UP	1 OK	
se1-egee.srce.hr	UP	3 OK	

August 2007: 1579 troubles

September 2007: 891 troubles



■ OFF-SITE
 ■ ON-SITE
 ■ UNABLE TO KNOW

- **Scheduled and unscheduled downtime procedure to be streamlined**
- **Core Grid service: ~15 min downtime/month**

COD Dashboard display:

DownCollector	Grid service test	Problem type and assignment
OK	KO	Service problem: GGUS ticket ROC/SITE
KO	KO	ON-SITE: ROC/SITE OFF-SITE: ENOC
OK	OK	No problem :)
KO	OK	DownCollector problem, firewalling ...

- **Many network problems are impacting the Grid**
- **Have we a network problem?**
 - Avoid unknown error = network problem
 - DownCollector could help to judge and to filter alarms
 - OFF-SITE troubles are not relevant for sites but need to be reported
- **Performance issues not addressed**
 - Hard to test without disturbing networks
 - Interfering tests in parallels