



CMS critical services TF



Definition of the Computing/IT services provided by CERN/IT which are essential to the effective running of the experiment (Offline and Computing)

TF steered by *Neil Geddes* for CMS

Close collaboration with CERN/IT and WLCG

This includes:

[CMS] write a complete list of “services”

[CMS] define “ranks” according to allowable downtime

[CMS] assign “ranks” to “services”

[CERN/IT] implement specific support categories

[CMS + CERN/IT] agree on contacts, keep all up to date



CMS critical services



Listed at:

<https://twiki.cern.ch/twiki/bin/view/CMS/SWIntCMServices>

Rank table:

<u>Rank</u>	<u>Definition</u>	<u>Max. downtime per incident (Hrs)</u>
11	CMS Stops operating	0.5
10	CMS stops transferring data form Cessy	
9	T0 Production stops	
8	T1/T2 Production/analysis stops	
7	Services critical when needed but not needed all the time (currently includes documentation)	0.5
6	A service monitoring or documenting a critical service	8
5	CMS development stops if service unavailable	24
4	CMS development at CERN stops if service unavailable	24
3	Services not critical for CMS	24
2	Services required for CMS	72
1	Used by a significant fraction of CMS	72
0	Not used or discouraged by CMS	forever



CMS, WLCG and CERN/IT on critical services



3 levels of service support are being defined by WLCG and CERN/IT in response to LHC exps:

Services	
ALL	WLCG / " Grid " standards
KEY PRODUCTION SERVICES	+ Expert call-out by operator
CASTOR/Physics DBs/Grid Data Management	+ 24 x 7 on-call

All the CMS services in the ranked list are mapped onto these service levels. Roughly:

CMS rank 10 == 24x7 on-call

CMS rank 8,9 == Expert call-out



Service	Description	IT/CMS	Rank	LB/HAS/SS ?	Notes
Oracle	Main Oracle back end. Serves a number of other services.	IT	10	HAS	There may be demand for MySQL
CERN SRM		IT	10		Closely connected to CASTOR
CASTOR		IT	10		There may different requirements on different parts - if this is relevant
DBS	Data Book-keeping system	CMS	10		required for logging data form Cessy
CASTOR Pools		IT	10		Disk. Technically may be the same as CASTOR .
Batch queues			10		
Kerberos		IT	10		Need to be able to log in to at least 1 machine to authenticate data transfers
networking Cessy-T0			10		
campus networking			10		
Telephones		IT	10		
Web "back-ends"		IT & CMS	10		Real need is to keep the historic and state data
Cessy->T0 transfer system	lxgate39 - CERN end of transfer system	IT&CMS	10		



CERN FTS	Transfer of data T0->T1(and others)	IT	9	
PHEDEX	CMS file transfer out from CERN	CMS	9	sits on top of FTS
Frontier Launchpad		CMS	9	Needs to be checked for T0 workflows - otherwise 8
AFS		IT	9	Check location of scripts etc
Tier-0	includes CAF		9	That fraction of the cern batch system and related infrastructure required for the T0
CMS VOMS Server		IT	8	transfers and remote jobs stop
CMS MyProxy ? Server		IT	8	transfers and remote jobs stop
CMS BDII	Information service required by all RBs	IT	8	Currently single point of failure - GDB working on this
External networking		IT	8	
ProdManager ?		CMS	8	Assumes all non t0 work done through single instance of prodmanager, higher if used for T0 workflow.
APT servers	Installation servers for CMSSW	IT & CMS	7 SS	Must be there when needed. Not needed all the time



Build machines		IT	7		
Tag collector		IT & CMS	7		
Testbed machines	Testbed machines (10 quad-cores) requested,		7		Assume similar to CVS servers
Cmsdoc			7		Assume similar to TWIKI
twiki		IT	7		Requirement is access to documentation
CMS RB	RB hosted by CERN	IT	8	HAS	Not used for T0. Need one somewhere, would be 8 if RBs only at CERN
SAM	Site Availability Monitoring. Used by RB to select good sites, but defaults to good if no SAW, so jobs still get submitted.	IT	6		Can not run without this for too long as service will degrade as more jobs sent to newly bad sites.
Dashboard	Monitoring System	IT	6		Needed for debugging problems
PHEDEX monitoring		CMS	6		
lemon (monitoring)		IT	6		Used by PHEDEX to control rates
WebTools ?	web server machines not explicitly identified elsewhere (SiteDB , ProdRequest , DBS browser, CondWeb ? , ...), consisting of load balanced front ends and back end application servers.	IT & CMS	5		May need to separate out some of these as some become more important to production running..
e-mail		IT	5		
smtp			5		
HyperNews		IT & SPI	5		
Savannah		IT & SPI	5		



CVS code server - CMSSW		IT	5	
CVS code server - TriDas ?		IT	5	Used by DAQ/online - but their policy in independence
linux installation	linux repository/installation services	IT	4	as above
telecom (phone conf)		CERN	4	
valgrind machines for the general user		IT	4	
performance benchmarking machines		IT	3	
indico (meetings)		IT	3	
LFC	Local File Catalog	IT	2	Not used at CERN



Roles, Tasks, Services, Operators



Roles for CMS Ops people

We need a clearer and simple definition of roles, and what's expected from each role. A role is not a person. A person may map to >1 roles. Person(s) behind a role should be contacted officially through their role.

Example: the VOC (Virtual Organization Contact) in the CERN SLA is a FacilitiesOps role in CMS. The role definition may be e.g. "Point of contact to IT. Arranges downtimes/upgrades/reconfiguration of boxes between IT and Service Operators/Developers. Monitors and triages alarms/issues from IT and users". We have a person ramping up as the CMS VOC.

Definition of Tasks/Services in CMS Ops

CMS has "Services" to run, and "Tasks" to deliver.

CMS DM/WM developers must provide clear procedures to restart CMS Services, hints on monitoring observables, etc. Ops teams must collect them and test them, ask to improve, and once done accept responsibility to take care

Example of Services: CERN DBS instance, PhEDEx central agents, CAF CRABServer, Webtools, ...

Example of Tasks: CMSSW installations, DDT/Transfer commissioning, ...

Tasks/Services Operators

Services and Tasks have operators

A Service Operator is a person responsible for the maintenance and operation of a service. The person should monitor the performance, uptime and availability of the service (as appropriate), install and configure the service. Clearly communicate issues (with patches where possible) to developers.

Example: we have a FacOps Service Operator for the PhEDEx central agents

A Task Operator is a person responsible for regularly running a task, maintaining communication with appropriate parties.

Example: we have a FacOps Task Operator for the CMSSW deployment at distributed Tiers



Working on the CERN VOBOXes SLA, also
 VOC as the main communication channel between VO and IT
 Create soon new VO-services m.l.'s (to replace personal mails)

include service responsables + VOC + FacilitiesOps
 to be published also in CDB

These will be the official interface to CERN/IT
 Behind these, CMS people can rotate, come, leave, ... transparently

DBS and Frontier

VOBoxes used by DBS and Frontier

Machine (alias)	Service/Role	Contact	Service Level	Details
vocms02 (cmst0db1, cmst0db)	DBS tier-0	Lee Lueking	(?)	
vocms03 (cmst0frontier1, cmst0frontier)	Frontier tier-0 squid	Lee Lueking	(?)	
vocms04 (cmst0frontier2, cmst0frontier)	Frontier tier-0 squid	Lee Lueking	(?)	
vocms05 (cmst0db2, cmst0db)	DBS tier-0	Lee Lueking	(?)	
vocms14 (cmsfrontier1, cmsfrontier, frontier3d)	Frontier launchpad	Lee Lueking	(?)	
vocms15 (cmsfrontier2, cmsfrontier, frontier3d2)	Frontier launchpad	Lee Lueking	(?)	
vocms16 (cmst0frontier3, cmst0frontier)	Frontier tier-0 squid	Lee Lueking	(?)	
vocms17 (cmst0frontier4, cmst0frontier)	Frontier tier-0 squid	Lee Lueking	(?)	
vocms24 (cmsdbssrv1, cmsdbssrv)	DBS services	Lee Lueking	(?)	
vocms25 (cmsdbssrv2, cmsdbssrv)	DBS services	Lee Lueking	(?)	
vocms26 (cmsdbssrv1, cmsfrontier3)	DBS & Frontier development	Lee Lueking	(?)	
vocms29 (cmsdbssrv2, cmsfrontier5)	DBS & Frontier development	Lee Lueking	(?)	
vocms30 (cmsdb1, cmsdbprod)	DBS global, local, physics & CAF	Lee Lueking	(?)	
vocms31 (cmsdb2, cmsdbprod)	DBS global, local, physics & CAF	Lee Lueking	(?)	
kgate40 (cmsdb, frontier)	DBS & Frontier monitoring	Lee Lueking	(?)	
lxvm0002 (cmsfrontier4, cmsfrontier)	Frontier launchpad	Lee Lueking	(?)	

Service Operations related to DBS and Frontier

DBS	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
Frontier	Build	Installation	Configuration	Startup	Running Test	Other Related Operations

Web Tools

VOBoxes used by Web Tools

Machine (alias)	Service	Role	Contact	Service Level	Details
vocms08 (cmsweb)	DNS load balancing	frontend	Valentin Kuznetsov, Giulio Eulisse	(?)	
vocms09 (cmsweb)	DNS load balancing	frontend	Valentin Kuznetsov, Giulio Eulisse	(?)	
vocms22 (cmswt01)	ProdRequest	backend	Valentin Kuznetsov, Giulio Eulisse	(?)	at least one of the backend machines to be available 24/7
vocms23 (cmswt02)	being deployed	backend	Valentin Kuznetsov, Giulio Eulisse	(?)	
vocms32 (cmswt03)	SiteDB, CondDB/Web Service, DBSDiscovery, Phedex Data Service	backend	Valentin Kuznetsov, Giulio Eulisse	(?)	
vocms33 (cmswttest)	CondDB/Web Application Server, ProdMon	testbox	Valentin Kuznetsov, Giulio Eulisse	(?)	should be available during office hours

More information concerning VoBoxes above (in general) can be found at [Operations](#) and [Configuration](#) pages.

Notes: Phedex WebPages should be migrated from cmslsgco03.cern.ch to backend WebTools VoBoxes next week (starting from June, 9th, 2008). WebTools services being deployed on cmsst03 in a similar way to cmsst01.

Service Operations related to Web Tools

SiteDB	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
CondDB / Web Application Server	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
CondDB / Web Service	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
DBSDiscovery	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
Phedex Data Service	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
Phedex Webpages	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
ProdRequest	Build	Installation	Configuration	Startup	Running Test	Other Related Operations
ProdMon	Build	Installation	Configuration	Startup	Running Test	Other Related Operations