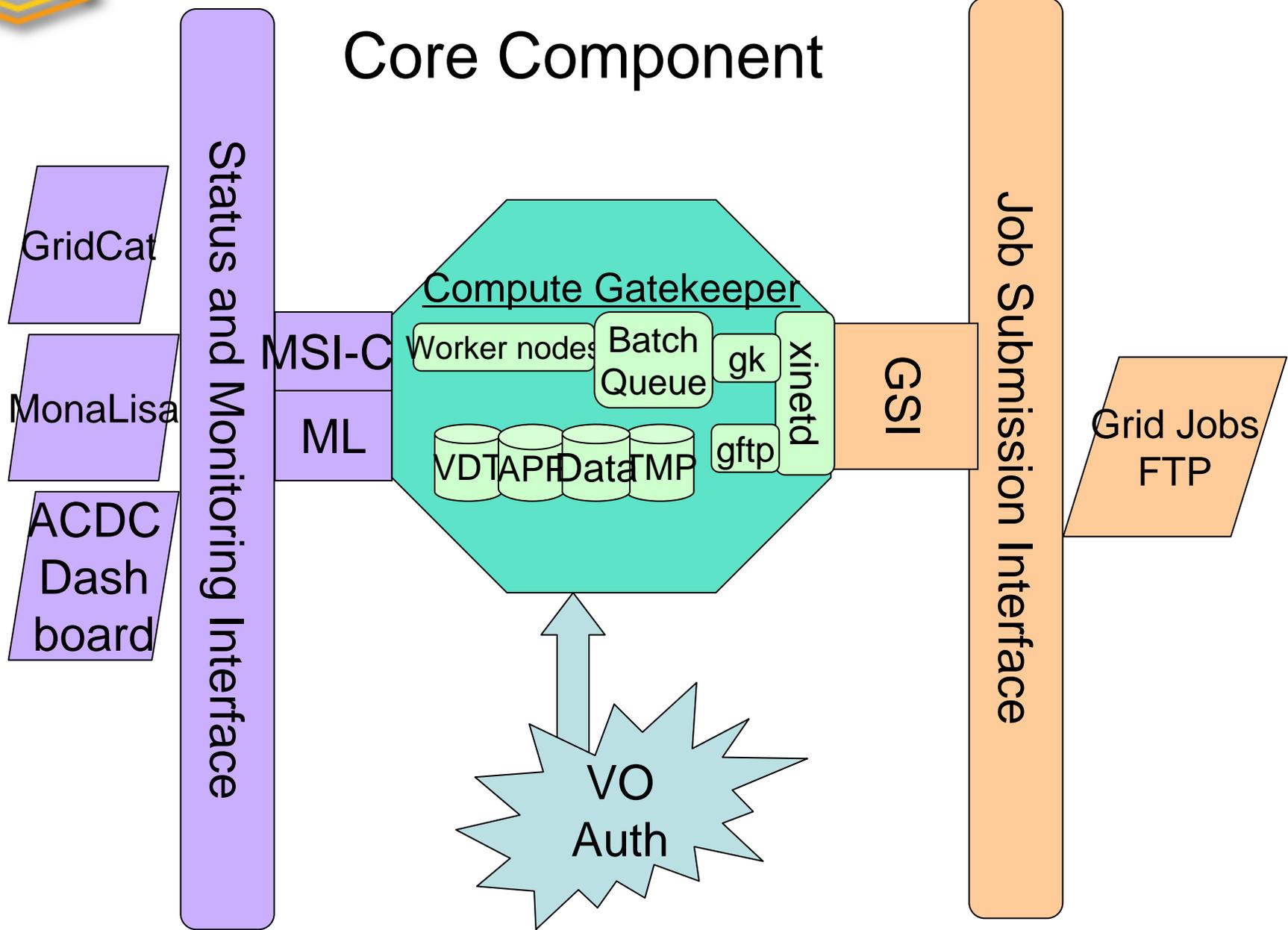




Core Component





□ □ OSG Software Environment

- Core Middleware -
 - GRAM (from Globus 3.2)
 - GSftp and GSftp4
 - Authentication or Privilege services (GUMS/PRIMA/Gridmap)
 - Accounting service (VO to local account mapping)
- Monitoring and Operations Instrumentation
 - Monitoring Information Service - Core Infrastructure (MIS-CI)
 - GRIS (GLUE 1.2/ Generic Information Provider 1.2)
 - Job Monitoring and metrics
 - Operations verification
 - Cataloging and Discovery



Instrumentation

- Information about Resources
 - **Static information** received from registrations
 - **Collected information** about the resource provided by system administrator during configuration, mostly static, software locations, batch system, storage for jobs
 - **Dynamic information** collected every couple of minutes to track usage, job accounting.
 - **Historic information** about resource use and performance, job throughput, data movement



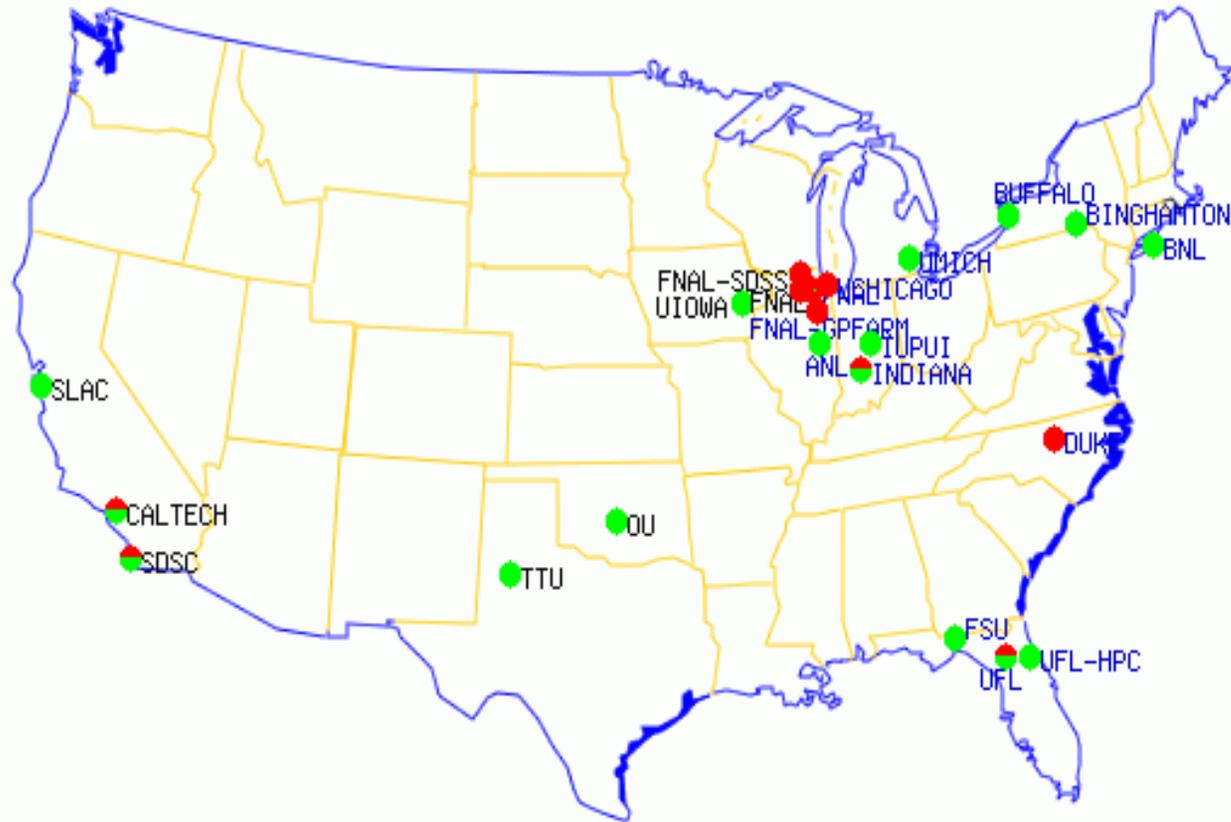
Static Information

● DUKE-HEP	osg unknown	0/0	0/24	CS	NC	DUKE	4
● UM_ATLAS	osg unknown	197/282	1898/1937	CS	MI	UMICH	279
● UF-HPC	osg 0.1.5-2	309/374	2723/6983	CS	FL	UFL-HPC	373
● PROD_SLAC	osg 0.1.5-1	2062/4035	5/490	CS	CA	SLAC	4313
● GRIDCAT_STATE_BIT_TEST	osg 0.1.5-2	0/2	2/4	CS	FL	UFL	2
● GRASE-CCR-ACDC	osg 0.1.5-2	0/68	688/9826	CS	NY	BUFFALO	68
● CIT_CMS_OPT	osg 0.1.5-2	11/16	13/67	CS	CA	CALTECH	18
● UCSD-OSGINT	osg unknown	0/0	8/71	CS	CA	SDSC	2
● UCSandiegoOSG-INT-2	osg 0.1.5-2	0/0	5/182	CS	CA	SDSC	2
● FNAL-Burt	osg 0.1.5-2	0/1	5/18	CS	IL	FNAL	1
● FERMIGRID	osg 0.1.5	0/0	3/67	CS	IL	FNAL	33
● FNAL-DDS	osg 0.1.5-2	0/1	0/9	CS	IL	FNAL	1
● USCMS-FNAL-WC1	LCG 2_4_0	NA	0/00	SS	IL	FNAL	0



OpenScienceGrid.org

Grid Catalog



Mon May 23 20:49:06 GMT 2005



Collected Information (!)

Unique Name

DNS Name

Local User Account Name

Local Home Directory

Base VDT Installation Directory

Job Manger Batch

Job Manger Fork

Batch Queue status command

Grid3 Schema \$DATA Directory

Grid3 Schema \$APP Directory

Grid3 Schema \$TMP Directory

Grid3 Schema \$TMP_WN

Gridftp Log file path

Sponsor (VO)

Output of osg-version



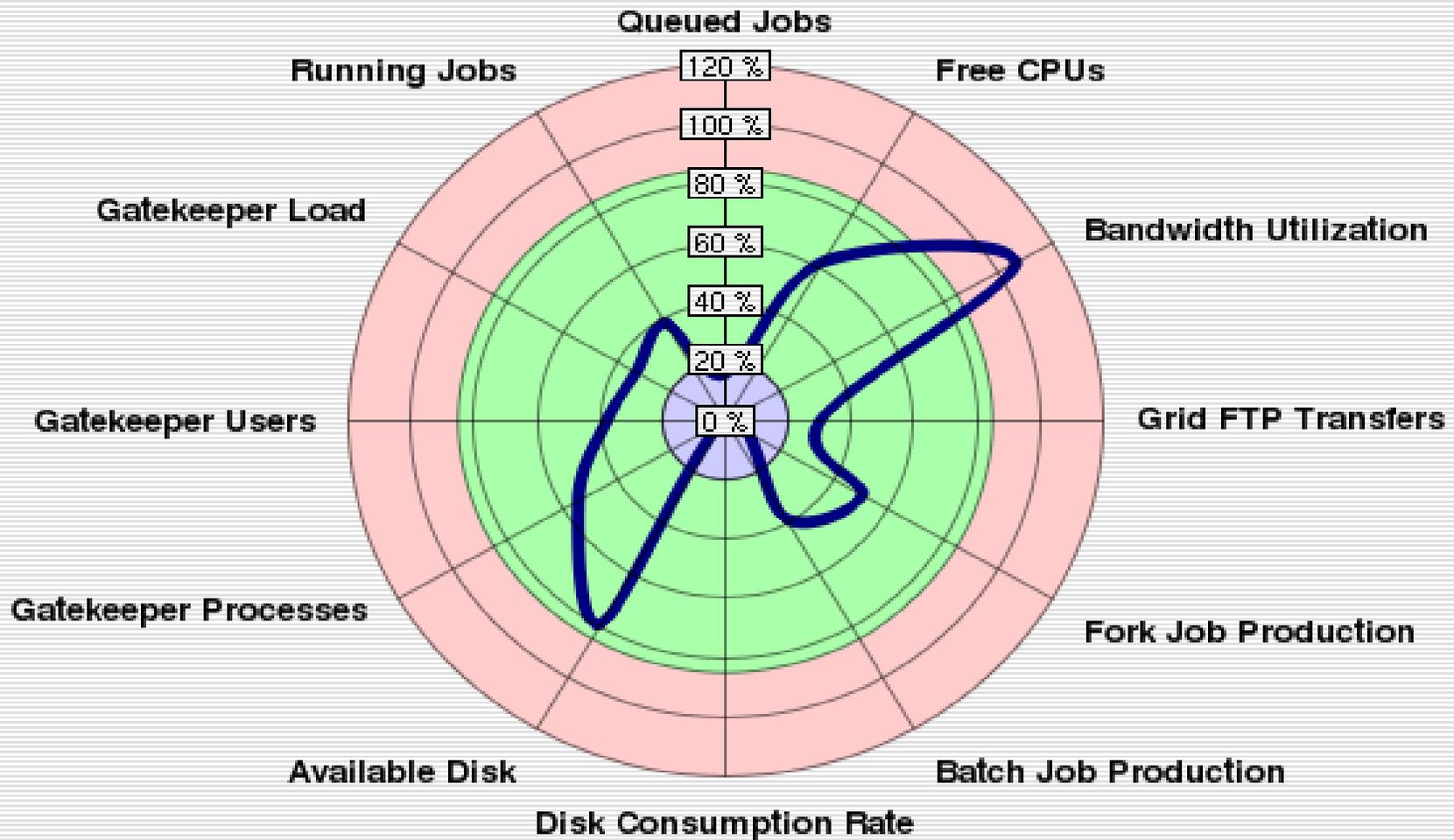
OpenScienceGrid.org

Name	resource_name	username	home	base
ANL_HEP	atlas10.hep.anl.gov	grase	/home/atlasgrid/grase	/usr/local/osg
BNL_OSG_Test1	atestgk01.usatlas.bnl.gov	grid0002	/usatlas/grid/grid0002	/home/OSG_ITB
CIT_CMS_OPT	tier2d.cacr.caltech.edu	grase	/home/grase	/OSG
CIT_CMS_OSG	citgrid3.cacr.caltech.edu	grase	/home/grase	/usr/local/OSG-0.1.5-2/
DUKE-HEP	atlg01.phy.duke.edu	ivdgl	/home/ivdgl	/grid/osg-0.1.3
FNAL_CMST1_TEST	cmsrv23.fnal.gov	grase	/home/grase	/storage/cmsrv23/osg/v0_1_5
FNAL_GPFARM	fngp-osg.fnal.gov	grase	/home/grase	/export/osg/grid
FNPCG	fnpcg.fnal.gov	grase	/home/grase	/export/home/grid
FSU-OSGDEV	unxc08.hep.fsu.edu	grase	/home/grase	/usr/local/grid
GRASE-BINGHAMTON	rommel.cs.binghamton.edu	grase	/home/grase	/opt/osg
GRASE-CCR-ACDC	acdc.ccr.buffalo.edu	grase	/home/grase	/raid/opt/grid
IUPUI_ITB	feynman.uits.iupui.edu	grase	/home/grase	/usr/local/osg-itb
IU_WALLABY	wallaby.uits.indiana.edu	grase	/home/grase	/usr/local/grid
LIGO-CIT-OSG	osg-gk.ligo.caltech.edu	ivdgl	/usr1/ivdgl	/app/osg-0.1.4
OUHEP_ITB	ouhep1.nhn.ou.edu	grase	/home/grase	/opt/osg-itb
TTU-TESTWULF	testwulf.hpcc.ttu.edu	grase	/export/home/grase	/usr/local/grid_OSG-0.1.5
UBuffalo-CCR-ITB	mama.ccr.buffalo.edu	grase	/home/grase	/opt/grid
UCSD-OSGINT	t2cms02.sdsc.edu	ivdgl	/data/users/ivdgl	/data/osg-0/
UC_Teraport_OSG_ITB	tp-login2.uchicago.edu	ivdgl	/gpfs1/home/ivdgl	/gpfs1/osg
UERJ_HEPGRID	prod-frontend.hepgrid.uerj.br	grase	/home/grase	/opt/osg
UF-HPC	hpc2.hpc.ufl.edu	grase	/home/grase	/opt/grid



OSG-ITB Grid Health

High Normal Low





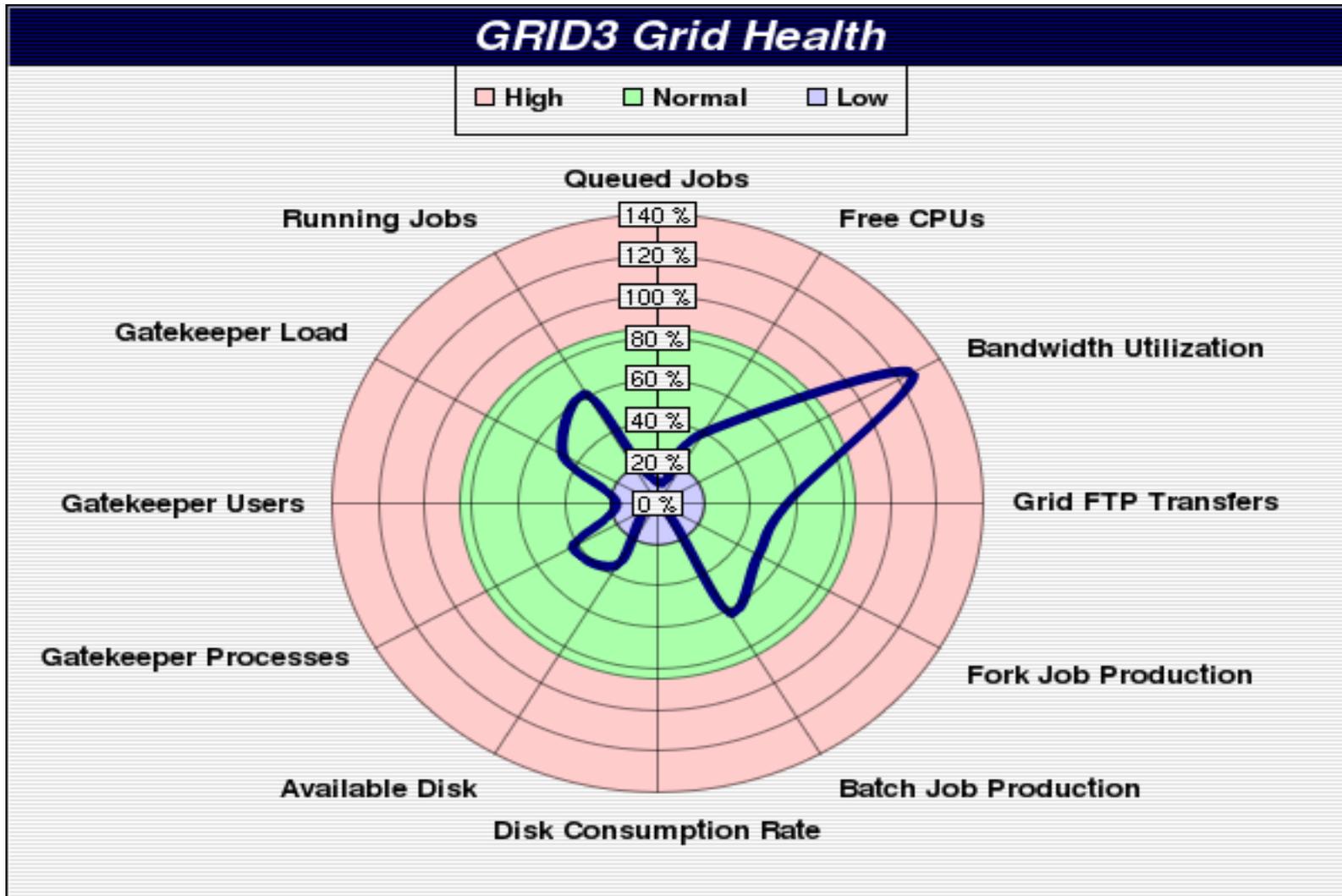
MonaLisa

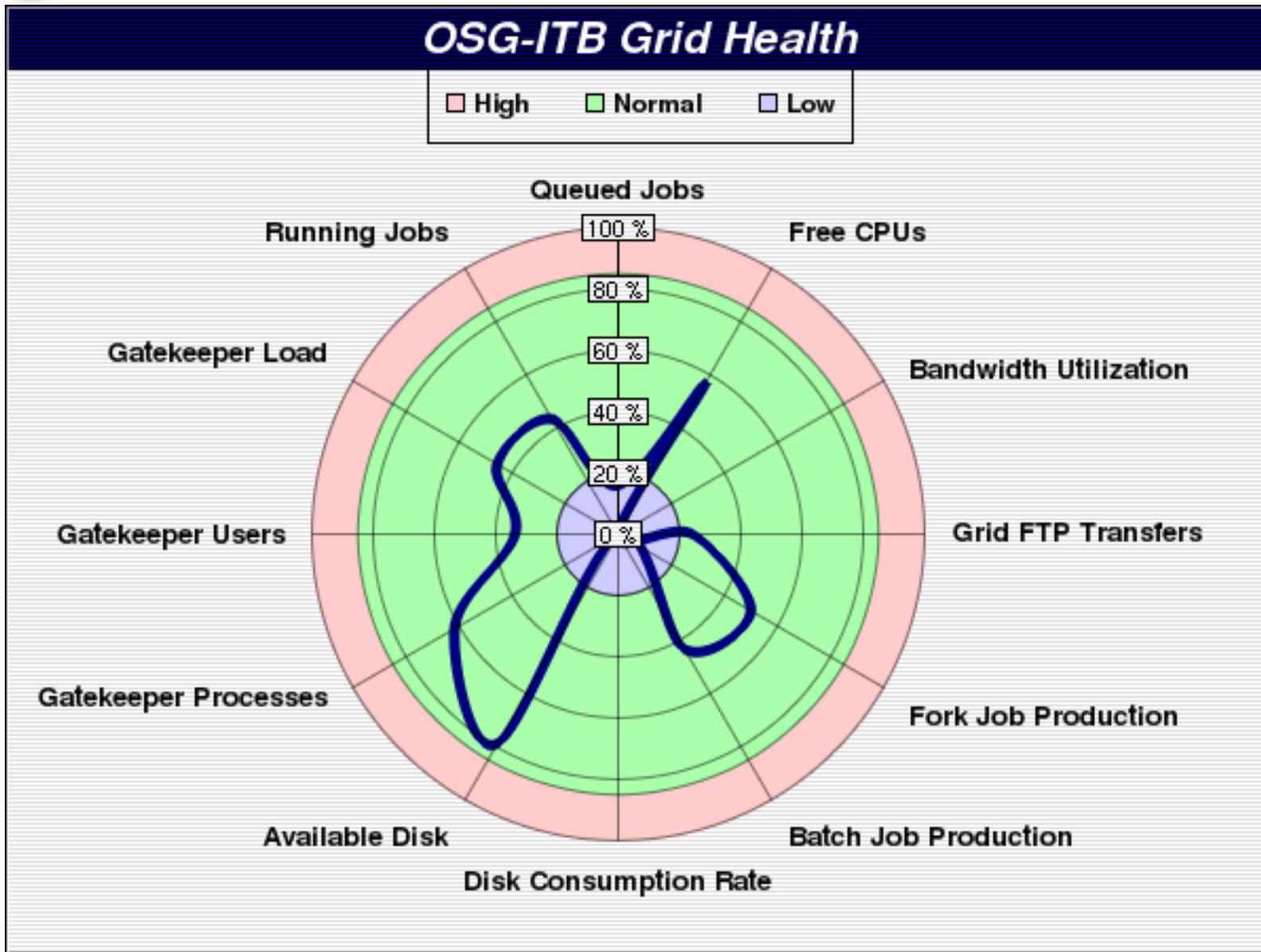
- Utilization: Busy/ Free Nodes
- Total Running / Idle Jobs
- Running Jobs per VO





ACDC - grid-dashboard







Monitoring Goals

- Increase information available for each resource
- Reduce monitoring impact on the resource

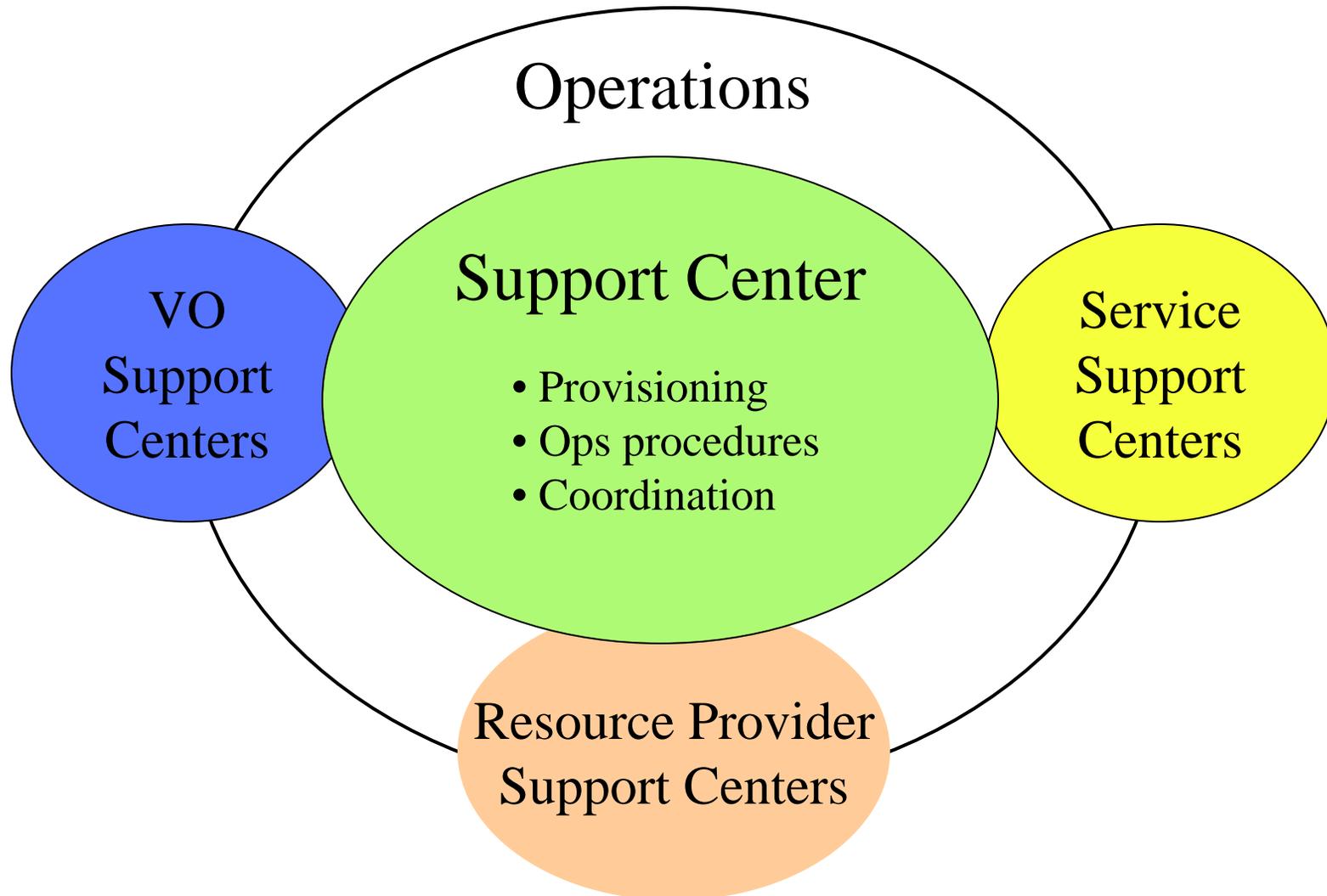


Agenda

- Integration Testbed (ITB) and it's purpose
- OSG Core Middleware and Monitoring
- OSG Operations status



Grid Operations Center





Provisioning Process

- Set up the release candidates for production installation tests.
- Add version control to production release
- Deploy and validate auxiliary services
 - Setup interaction with VO support centers
- Full documentation
 - Installation Manuals
 - Releases Notes, Change Logs, Patches, Upgrades
 - Description of the services provided for the release and access information



Service Infrastructure

- Trouble Ticketing system and interface
- Monitoring tools development and maintenance
- Identity services (certificate verification)
- Grid information collection
- VO-level services for monitoring
- Knowledge base
- Mailing Lists
- Formal and collaborative web information repositories



Site Resource - Service Matrix

No Information
 Pass
 Error
 Fail
 Untested

Production Sites

	Remote Host is Reachable	Running Gatekeeper	Authentication	Hello, World Application Check	Remote Host Uptime	Internet Network Services	Internet Servers Database	Certificate Expiration	Gatekeeper Conf	GSIF TP	GSIF TP Local -> Remote	GSIF TP Remote -> Local	Grid Tools	Grid Services	Scheduler	Scheduler Path	Scheduler Status	MDS	Globus Deploy	Grid5 Information	Grid5 User VO Map	Apps Directory Write	Data Directory Write	Trmp Directory Write	MonALISA	Ganglia	
acdc.ccr.buffalo.edu																										2005-05-20 13:13:50	
atestgk01.usatlas.bnl.gov																											2005-05-20 13:15:39
atlas10.hep.anl.gov																											2005-05-20 13:11:30
atlg01.phy.duke.edu																											2005-05-20 13:11:32
citgrid3.cacr.caltech.edu																											2005-05-20 13:13:48
cmssrv23.fnal.gov																											2005-05-20 13:11:30
feynman.uits.iupui.edu																											2005-05-20 13:14:52
fngp-osg.fnal.gov																											2005-05-20 13:12:06
fnpccg.fnal.gov																											2005-05-20 13:11:51
gdsuf.phys.ufl.edu																											2005-05-20 13:11:45
grid03.uchicago.edu																											2005-05-20 13:15:17
grid07.uchicago.edu																											2005-05-20 13:11:32
hpc2.hpc.ufl.edu																											2005-05-20 13:14:08
iuatlas.physics.indiana.edu																											2005-05-20 13:11:23
mama.ccr.buffalo.edu																											2005-05-20 13:11:21
osg-gk.ligo.caltech.edu																											2005-05-20 13:13:41
osgserv01.slac.stanford.edu																											2005-05-20 13:12:12
ouhep1.nhn.ou.edu																											2005-05-20 13:13:58
prod-frontend.hepgrid.uerj.br																											2005-05-20 13:15:17
rommel.cs.binghamton.edu																											2005-05-20 13:14:51
rsgid3.its.uiowa.edu																											2005-05-20 13:14:26
sdsslx10.fnal.gov																											2005-05-20 13:11:41
t2cms02.sdsc.edu																											2005-05-20 13:22:23
testwulf.hpcc.ttu.edu																											2005-05-20 13:11:27
tier2d.cacr.caltech.edu																											2005-05-20 13:14:10
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unxc08.hep.fsu.edu																											2005-05-20 13:14:04
wallaby.uits.indiana.edu																											2005-05-20 13:14:03

Resource Verification



Enabling Opportunistic Use

- All resources thought to be “reserved” by local site or by associated VO
- No master (meta) scheduler
- Plan to utilize dynamic monitoring data to predict resource job scheduling



LCG Integration Path

- Propose intermixing OSG ITB and LCG testbed

