



Monitoring, Accounting, Debugging

DIRAC Project



Outline

- ▶ Monitoring system behavior
- ▶ Accounting information
- ▶ Dealing with failures
 - ▶ Services
 - ▶ Jobs



System Administrator Console

- ▶ With SysAdmin console one can have an overview of the system in several ways:
 - ▶ > show status

System	Name	Type	Setup	Installed	Runit	Uptime	PID
DataManagement	StorageElement	service	SetUp	Installed	Run	2109	4091
DataManagement	FileCatalog	service	SetUp	Installed	Run	2109	4100
DataManagement	StorageElementProxy	service	SetUp	Installed	Run	2109	4137
Framework	SystemLoggingReport	service	SetUp	Installed	Run	2109	4246
Framework	Monitoring	service	SetUp	Installed	Run	2109	4115
Framework	Notification	service	SetUp	Installed	Run	2109	4126
Framework	SecurityLogging	service	SetUp	Installed	Run	2109	4111
Framework	UserProfileManager	service	SetUp	Installed	Run	2109	4099
Framework	ProxyManager	service	SetUp	Installed	Run	2109	4105
Framework	SystemAdministrator	service	SetUp	Installed	Run	2109	4142
Framework	SystemLogging	service	SetUp	Installed	Run	2109	4103
Framework	Plotting	service	SetUp	Installed	Run	2109	4222
Framework	BundleDelivery	service	SetUp	Installed	Run	2109	4101
WorkloadManagement	SandboxStore	service	SetUp	Installed	Run	2109	4113
WorkloadManagement	Matcher	service	SetUp	Installed	Run	2109	4164



System Administrator Console

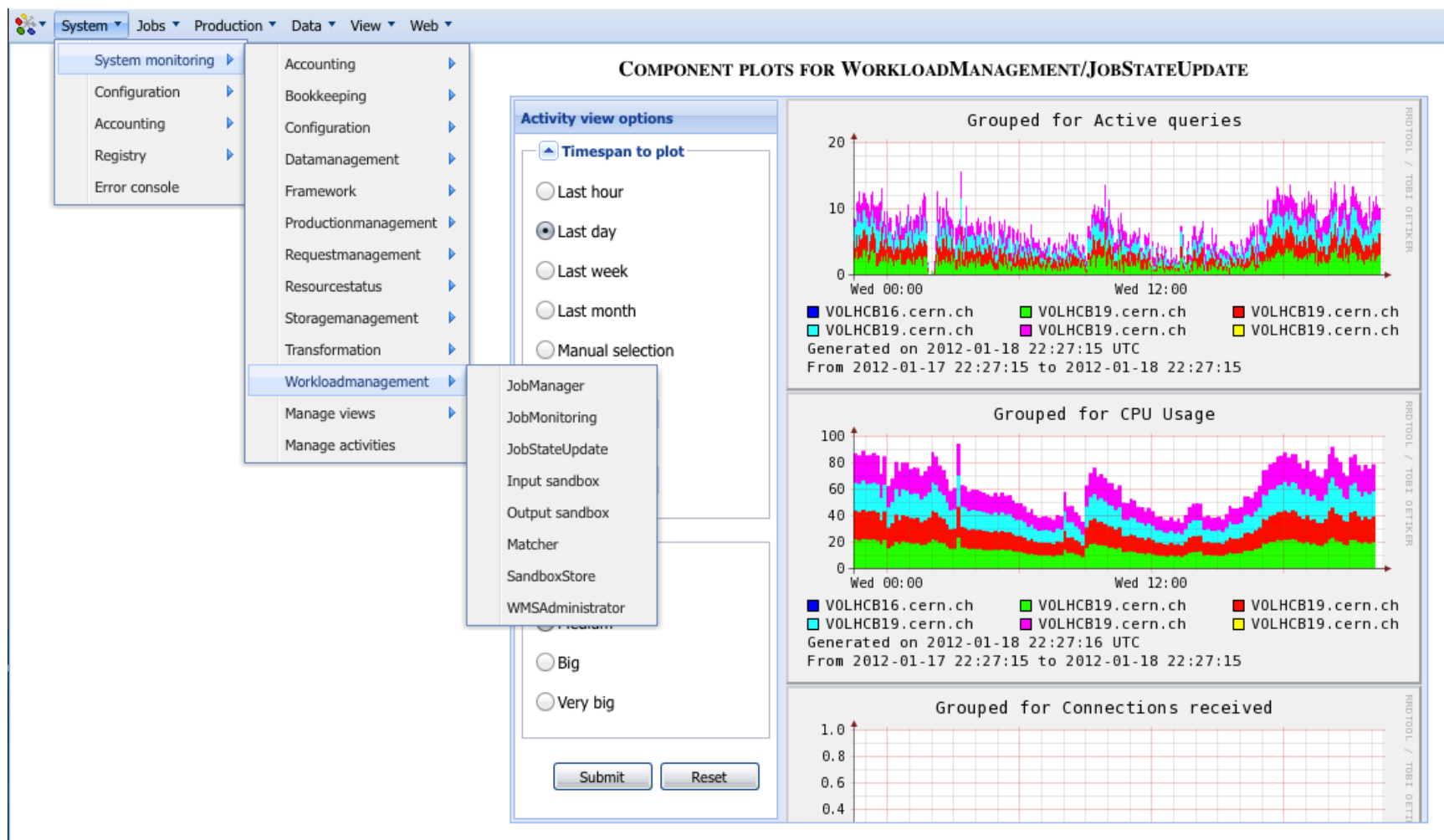
▶ > show errors

System	Component	Last hour	Last day	Last error
1	Accounting	3	3	Bucket length has changed for type Dirac-Production_Pilot
2	Accounting	3	3	Bucket length has changed for type Dirac-Production_Pilot
3	Configuration	526	766	Error while loading agent module Error while calling
10	Configuration	687	13465	Error while loading agent module Can't load agent
11	Configuration	690	16226	Error while loading agent module Can't load agent
12	Configuration	0	0	
13	DataManagement	0	0	
14	DataManagement	0	0	
15	DataManagement	1	1	Missing __RCSID__
16	Framework	0	0	
17	Framework	2	10	Could not save hash after synchronization /vo/dirac/
18	Framework	196	1129	illegal attempt to update using time 1326921480 when
19	Framework	0	0	
20	Framework	0	0	
21	Framework	13	13	Unknown@Unknown has no proxy registered

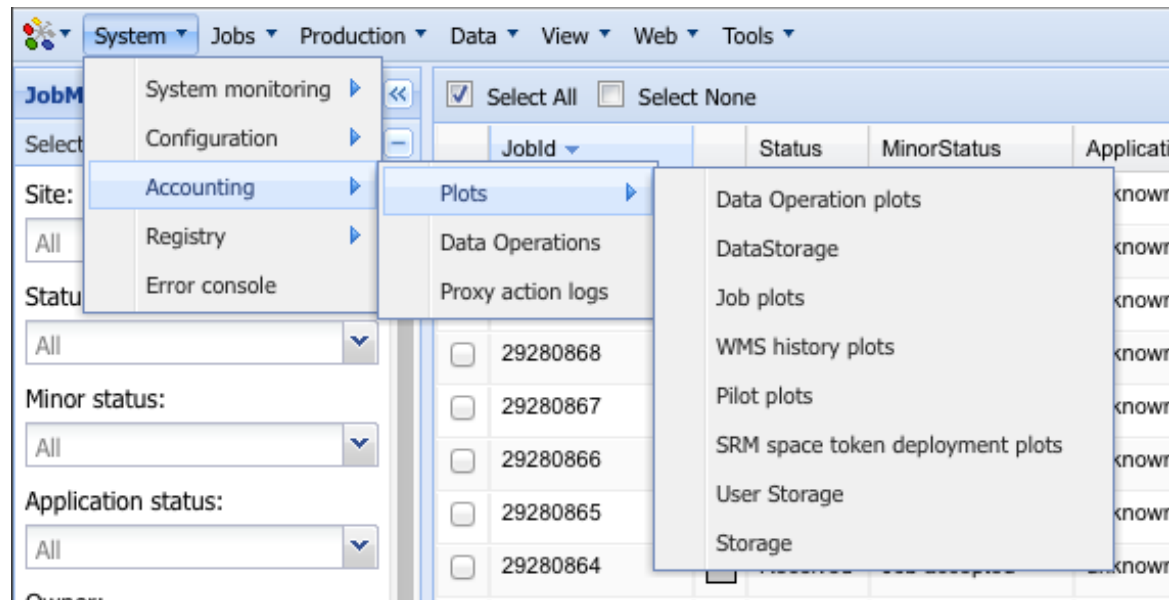


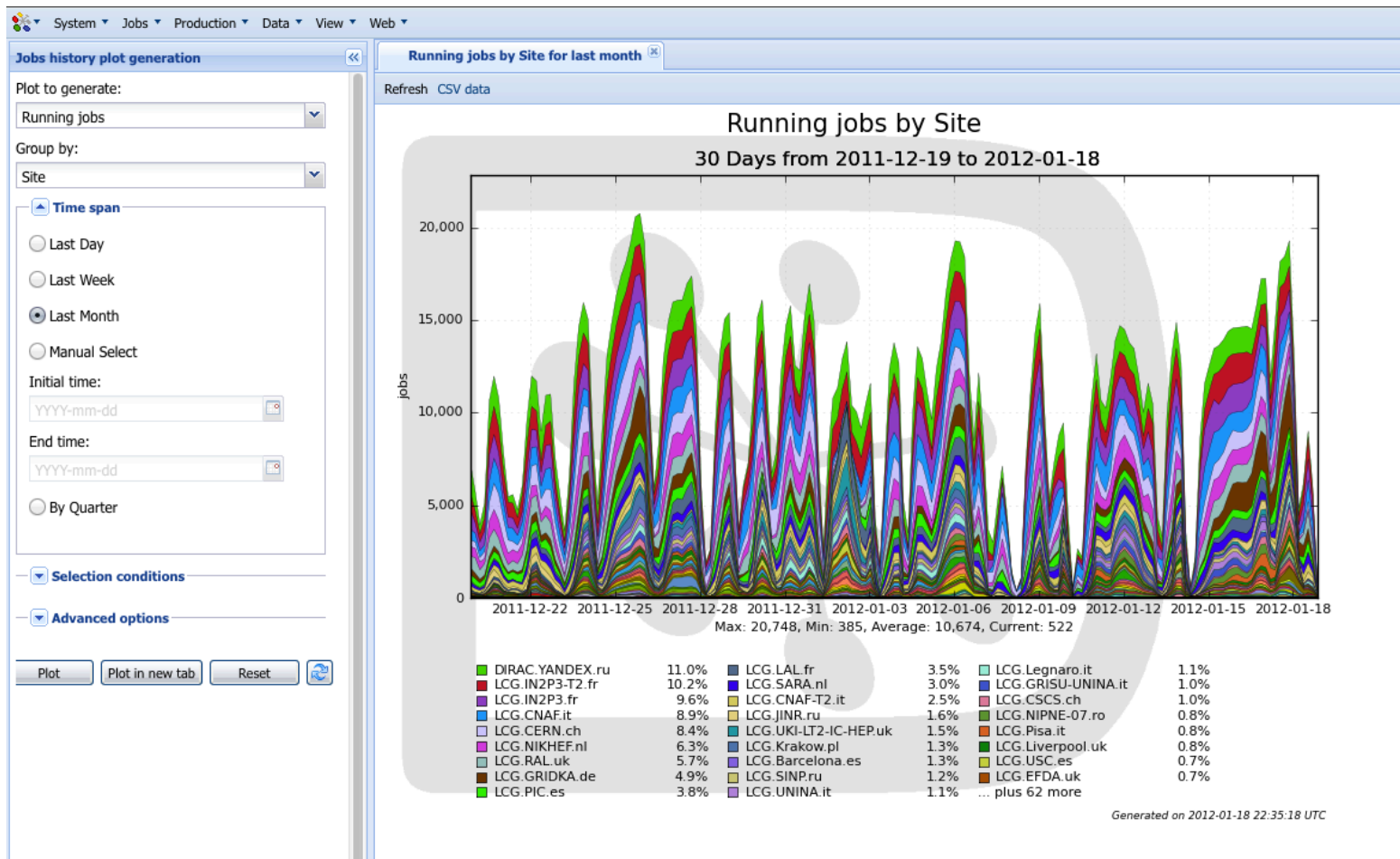
Monitoring service

- ▶ All the components are periodically reporting its parameters (CPU, Memory, query rates, etc) to the Monitoring service
- ▶ The Monitoring service is building corresponding rrd database entries
- ▶ The resulting plots are available in the Web portal



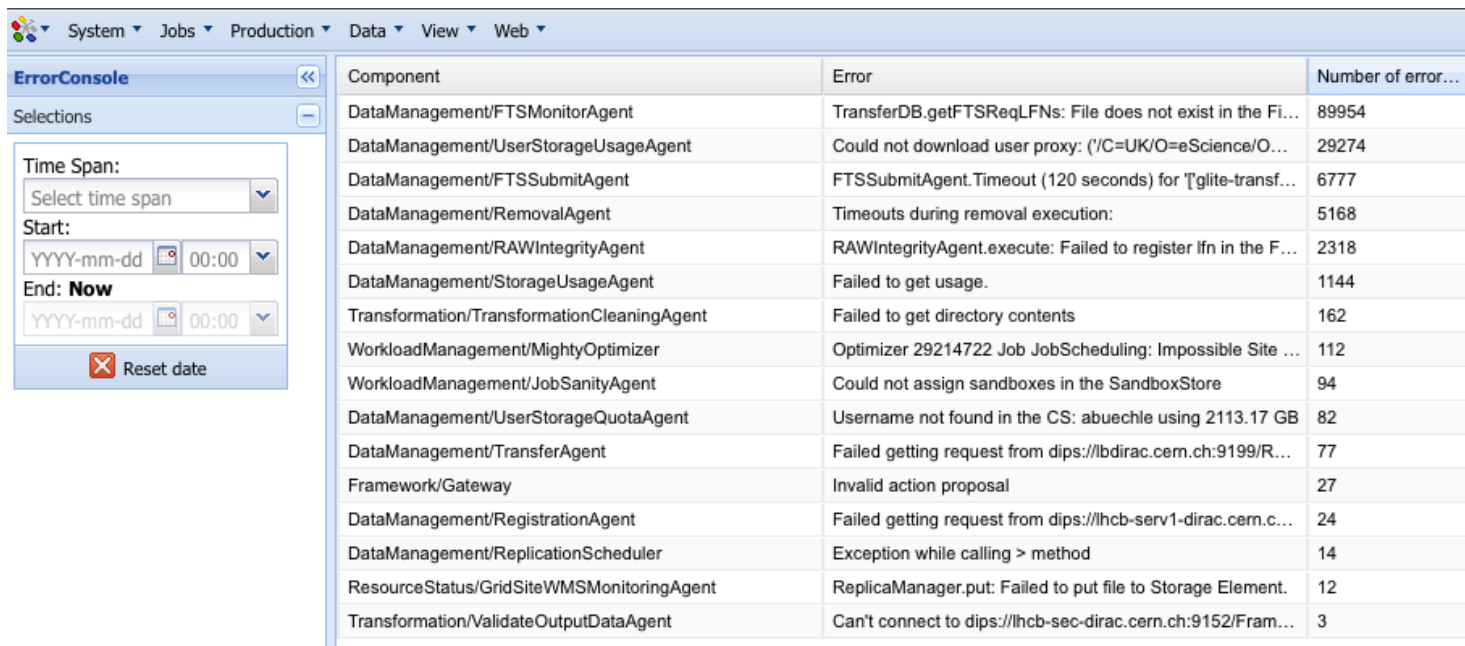
- ▶ Various data about resources consumption, numbers of jobs, data transfers, etc are collected by a dedicated Accounting service
- ▶ The accounting data is available in various forms
 - ▶ historical plots, pie charts





- ▶ **Component log is the place to look into in case of failure**
 - ▶ In the server host:
 - ▶ > `less /vo/dirac/startup/Framework_SystemAdministrator/log/current`
 - ▶ From the SysAdmin console:
 - ▶ > `show log Framework SystemAdministrator I00`
 - ▶ Each line in the log has a time stamp and LogLevel
 - ▶ Look for lines with the ERROR log stamp
 - ▶ You can correlate the errors with other events (e.g. power cuts, etc)

- ▶ All the error messages from any component are also sent to a special SystemLogging service



Component	Error	Number of error...
DataManagement/FTSMonitorAgent	TransferDB.getFTSReqLFNs: File does not exist in the Fi...	89954
DataManagement/UserStorageUsageAgent	Could not download user proxy: (/C=UK/O=eScience/O...	29274
DataManagement/FTSSubmitAgent	FTSSubmitAgent.Timeout (120 seconds) for "[glite-transf...	6777
DataManagement/RemovalAgent	Timeouts during removal execution:	5168
DataManagement/RAWIntegrityAgent	RAWIntegrityAgent.execute: Failed to register lfn in the F...	2318
DataManagement/StorageUsageAgent	Failed to get usage.	1144
Transformation/TransformationCleaningAgent	Failed to get directory contents	162
WorkloadManagement/MightyOptimizer	Optimizer 29214722 Job JobScheduling: Impossible Site ...	112
WorkloadManagement/JobSanityAgent	Could not assign sandboxes in the SandboxStore	94
DataManagement/UserStorageQuotaAgent	Username not found in the CS: abuechle using 2113.17 GB	82
DataManagement/TransferAgent	Failed getting request from dips://lbdirc.cern.ch:9199/R...	77
Framework/Gateway	Invalid action proposal	27
DataManagement/RegistrationAgent	Failed getting request from dips://lhcb-serv1-dirac.cern.c...	24
DataManagement/ReplicationScheduler	Exception while calling > method	14
ResourceStatus/GridSiteWMSMonitoringAgent	ReplicaManager.put: Failed to put file to Storage Element.	12
Transformation/ValidateOutputDataAgent	Can't connect to dips://lhcb-sec-dirac.cern.ch:9152/Fram...	3

► Look up the job standard output peek

<input type="checkbox"/>	29276409	Failed	Application Fini...	Gauss Exited W...	LCG.Catania.it	00015563_000...	2012-01-18 21:25	2012-01-18 21:25	2012-01-18 18:14	rgracian
<input type="checkbox"/>	29276398	Failed	Application Fini...	Gauss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29276396	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29276183	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275915	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275892	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275886	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275877	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275850	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275642	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275618	Failed		xited W...	LCG.Catania.it					
<input type="checkbox"/>	29275401	Failed		ript.py ...	LCG.CE...					
<input type="checkbox"/>	29275197	Failed		ject.sh...	LCG.CE...					
<input type="checkbox"/>	29274815	Failed		ript.py ...	LCG.CE...					
<input type="checkbox"/>	29274809	Failed	Application Fini...	gaudi-script.py ...	LCG.CE...					
<input type="checkbox"/>	29274791	Failed	Application Fini...	gaudi-script.py ...	LCG.RAL...					
<input type="checkbox"/>	29274776	Failed	Application Fini...	gaudi-script.py ...	LCG.RAL.uk	B2Dpi-Sel-Dow...	2012-01-18 21:32	2012-01-18 21:32	2012-01-18 17:07	ccauret
<input type="checkbox"/>	29274774	Failed	Application Fini...	gaudi-script.py ...	LCG.RAL.uk	B2Dpi-Sel-Dow...	2012-01-18 20:37	2012-01-18 20:37	2012-01-18 17:07	ccauret

Standard output for JobID: 29276409

```

Last 20 lines of application output from JobWrapper on 2012-01-18 21:25:14.895307 :
CPU Total: 00:00:10 (h:m:s) Normalized CPU Total 95.4 s @ HEP'06
=====
2012-01-18 21:25:10 UTC dirac-jobexec/UploadLogFile  VERB: setJobParameter(29276409,Log
2012-01-18 21:25:11 UTC dirac-jobexec/UploadLogFile  INFO: Logs for this job may be retr
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: Payload proxy information:
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: subject      : /DC=es/DC=irisgr
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: issuer       : /DC=es/DC=irisgr
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: identity     : /DC=es/DC=irisgr
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: timeleft    : 141:08:36
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: DIRAC group  : lhcb_mc
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: path         : /tmp/tmpDCgEJm
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: username     : rgracian
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: VOMS         : True
2012-01-18 21:25:11 UTC dirac-jobexec/ModuleBase     VERB: VOMS fqan    : [ '/lhcb/Role=prod
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  INFO: Initializing $Id: FailoverR
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  VERB: Found WMS JobID = 29276409
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  INFO: Workflow status = False, st
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  INFO: Status of files have been p
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  INFO: Request is empty, nothing t
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  VERB: Workflow status = False, st
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  WARN: Workflow status is not ok,
2012-01-18 21:25:11 UTC dirac-jobexec/FailoverRequest  INFO: Workflow failed, end of Fai

```

► Look up the associated pilot job output

<input type="checkbox"/>	29276409	Failed	Application Fini...	Gauss Exited W...	LCG.Catania.it	00015563_000...	2012-01-18 21:25	2012-01-18 21:25	2012-01-18 18:14	rgracian
<input type="checkbox"/>	29276398	Failed	Application Fini...	Gauss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29276396	Failed	Application Fini...	Gauss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29276183	Failed	JDL	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275915	Failed	Attributes	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275892	Failed	Parameters	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275886	Failed	Logging info	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275877	Failed	Peek StandardOutput	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275850	Failed	Get LogFile	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275642	Failed	Get PendingRequest	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275618	Failed	Get StagerReport	ss Exited W...	LCG.Catania.it					
<input type="checkbox"/>	29275401	Failed	Actions	di-script.py ...	LCG.CERN.ch					
<input type="checkbox"/>	29275197	Failed	Pilot	Get StdOut	CERN.ch					
<input type="checkbox"/>	29274815	Failed	Sandbox	Get StdErr	CERN.ch					
<input type="checkbox"/>	29274809	Failed	Show value	di-script.py ...	LCG.CERN.ch					
<input type="checkbox"/>	29274791	Failed	Application Fini...	gaudi-script.py ...	LCG.RAL.uk					
<input type="checkbox"/>	29274776	Failed	Application Fini...	gaudi-script.py ...	LCG.RAL.uk					

Pilot StdOut for JobID: 29276398 2012-01-18 21:25 2012-01-18 18:14 rgracian

```

2012-01-18 20:45:25 UTC dirac-pilot [INFO] Running ./dirac-pilot.py -G lhcb_mc -M 5 -
2012-01-18 20:45:25 UTC dirac-pilot [INFO] Version 3ef2766 (2011-11-30 01:30:06 +0100
2012-01-18 20:45:25 UTC dirac-pilot [DEBUG] Installing with: /home/prdlhcb/home_cream
2012-01-18 20:45:25 UTC dirac-install [NOTICE] Processing installation requirements
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Loading global defaults from: http://lh
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Loaded global defaults
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Defaults for Installations/LHCb are in h
2012-01-18 20:45:25 UTC dirac-install [NOTICE] Destination path for installation is /
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Defaults for Projects/LHCb are in http:
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Processing dependencies for LHCb:v7rlp6
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Releases file is http://lhcbproject.web
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Loaded releases file http://lhcbproject.w
2012-01-18 20:45:25 UTC dirac-install [DEBUG] LHCb v7rlp6 depends on DIRAC:v6rlp2
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Defaults for Projects/DIRAC are in http:
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Processing dependencies for DIRAC:v6rlp2
2012-01-18 20:45:25 UTC dirac-install [DEBUG] Releases file is http://lhcbproject.web
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Loaded releases file http://lhcbproject.w
2012-01-18 20:45:26 UTC dirac-install [NOTICE] Discovering modules to install
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Discovering modules to install for LHCb
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Modules to be installed for LHCb are: LH
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Discovering modules to install for DIRAC
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Modules to be installed for DIRAC are: D
2012-01-18 20:45:26 UTC dirac-install [NOTICE] Writing down the releases files
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Dumping releases file for LHCb:v7rlp6
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Dumping releases file for DIRAC:v6rlp2
2012-01-18 20:45:26 UTC dirac-install [NOTICE] Installing modules...
2012-01-18 20:45:26 UTC dirac-install [NOTICE] Installing DIRAC:v6rlp2
2012-01-18 20:45:26 UTC dirac-install [NOTICE] Retrieving http://lhcbproject.web.cern
2012-01-18 20:45:26 UTC dirac-install [DEBUG] Retrieving remote file "http://lhcbproje

```

- Note that pilot can pick up several jobs in a row
 - The pilot output will be only available than the pilot finishes