WLCG Information System Status

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BDII development and support
BDII development

• Releases since the last GDB presentation (April 2014)
  – 3 releases in total
    • Last to be done officially in EMI in the next days
      – Mostly glue-validator fixes and minor fixes affecting
        » glite-info-provider-service
        » glue-schema
        » bdii

http://gridinfo.web.cern.ch/sys-admins/bdii-releases
Ginfo development

• New BETA version of ginfo available for comments
  – /afs/cern.ch/user/i/icalvet/public/ginfo-1.9.0-1.el6.noarch.rpm
  – /afs/cern.ch/user/i/icalvet/public/ginfo_tutorial.txt

• This version provides similar functionality as lcg-info/lcg-infosites

• Please, give it a try and send your feedback to project-grid-info-support!
New GLUE 2.1

- Extension of GLUE 2 under discussion in the OGF GLUE WG
- The extension will contain new objects and attributes to better describe
  - Cloud resources
  - GPU resources
- Backwards compatible with GLUE 2.0
- New version of glue-schema package will have to be released and installed in the BDII:
  - GLUE 2.1 expected to be approved by the end of the year
  - Deployment will be managed by EGI FedCloud for their cloud sites
- WLCG has shown no interest on GLUE 2.1 for the time being, but eventually all BDII will be able to understand the new version of the schema and be able to discover Cloud and GPU resources
BDII user support

- Incident happened on 11.08 overloading CERN Top BDII with ldapsearch commands coming from a CMS user
  - [https://ggus.eu/?mode=ticket_info&ticket_id=107621](https://ggus.eu/?mode=ticket_info&ticket_id=107621)
- LDAP configuration now better tuned to deal with high loads
  - This will be the configuration by default in top BDIIIs to be released in the next days (see previous slide)
- No other incidents reported in the last months
BDII maintenance effort

<table>
<thead>
<tr>
<th>Site</th>
<th>Service Monitoring (Nagios/SAM)</th>
<th>BDII Upgrades</th>
<th>Incidents in the past year</th>
<th>OS/HW interventions</th>
<th>Adding/Removing service LDAP URLs from site BDII</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERN</td>
<td>Automated</td>
<td>None</td>
<td>User overloading the service</td>
<td>Running on VMs</td>
<td>Trivial (10 changes in 2014)</td>
</tr>
<tr>
<td>TRIUMF</td>
<td>Automated</td>
<td>Migration to EMI 3</td>
<td>None</td>
<td>Few minutes for kernel/OS upgrade</td>
<td>Trivial</td>
</tr>
<tr>
<td>NIKHEF</td>
<td>Automated</td>
<td>None</td>
<td>None</td>
<td>No major overhead</td>
<td>Trivial</td>
</tr>
<tr>
<td>PIC</td>
<td>Automated</td>
<td>Migration to EMI3 (easy)</td>
<td>None</td>
<td>Running on VMs</td>
<td>Trivial</td>
</tr>
<tr>
<td>RAL</td>
<td>Automated</td>
<td>None</td>
<td>None</td>
<td>No major overhead</td>
<td>Trivial</td>
</tr>
<tr>
<td>IN2P3</td>
<td>Automated</td>
<td>Migration to EMI 3</td>
<td>Users overloading the service</td>
<td>Running on VMs</td>
<td>Trivial</td>
</tr>
<tr>
<td>CNAF</td>
<td>Automates</td>
<td>None</td>
<td>None</td>
<td>No major overhead</td>
<td>Trivial</td>
</tr>
<tr>
<td>CIEMAT</td>
<td>Automated</td>
<td>None (grouped with other updates if needed)</td>
<td>None</td>
<td>Like any other services but very simple</td>
<td>Trivial</td>
</tr>
<tr>
<td>Manchester</td>
<td>Automated</td>
<td>None</td>
<td>Restarts needed to get rid of cached results</td>
<td>No major overhead</td>
<td>Trivial</td>
</tr>
</tbody>
</table>
BDII and GLUE deployment
BDII deployment status

- [https://wlcg-mon/dashboard/request.py/siteview#currentView=BDII+deployment](https://wlcg-mon/dashboard/request.py/siteview#currentView=BDII+deployment)
  - All GOCDB + OSG sites
  - Stable number of site and top BDII endpoints

<table>
<thead>
<tr>
<th></th>
<th>5.2.10</th>
<th>5.2.12</th>
<th>5.2.17</th>
<th>5.2.20</th>
<th>5.2.21</th>
<th>5.2.22</th>
<th>Number of Endpoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>bdii_site</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>315</td>
<td>323</td>
</tr>
<tr>
<td>bdii_top</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>79</td>
<td>83</td>
</tr>
</tbody>
</table>
Cleaning SW tags

• **195000 SW tags published one year ago**
  – Most of them belonging to ATLAS and CMS
  – After carrying out cleaning campaigns, number has been reduced to 6600 SW tags
  • These are still used by other VOs

<table>
<thead>
<tr>
<th></th>
<th>SW tags removed</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALICE</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ATLAS</td>
<td>YES</td>
<td>All of them removed</td>
</tr>
<tr>
<td>CMS</td>
<td>YES</td>
<td>5 SW tags per site are still published</td>
</tr>
<tr>
<td>LHCb</td>
<td>YES</td>
<td>Except VO-lhcb-pilot</td>
</tr>
</tbody>
</table>
GLUE deployment status

- https://wlcg-mon.cern.ch/dashboard/request.py/siteview#currentView=Glue+Deployment

  – All GOCDB + OSG BDIIis

<table>
<thead>
<tr>
<th>LCGBDII</th>
<th>GLUE1 DNs</th>
<th>GLUE1 Data Size</th>
<th>GLUE2 DNs</th>
<th>GLUE2 Data Size</th>
<th>GLUE1 Sites</th>
<th>GLUE2 Sites</th>
<th>GLUE1 Endpoints</th>
<th>GLUE2 Endpoints</th>
<th>GLUE1 Endpoint Types</th>
<th>GLUE2 Endpoint Types</th>
<th>GLUE1 Services</th>
<th>GLUE2 Services</th>
<th>GLUE2 Service Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCG-BDI</td>
<td>57104</td>
<td>53MB</td>
<td>105073</td>
<td>99MB</td>
<td>369</td>
<td>325</td>
<td>3538</td>
<td>5018</td>
<td>30</td>
<td>56</td>
<td>1891</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

One year ago, only SW Tags were summing up 120 MB!
GLUE 2 site validation
GLUE 2 validation

- GLUE 2 validation for WLCG
  - https://wlcg-mon.cern.ch/dashboard/request.py/siteview#currentView=Glue+Validator+WLCG

- EGI GLUE 2 validation
  - Uses glue-validator Nagios Probe and opens tickets to sites raising ERROR messages
  - https://midmon.egi.eu/nagios/cgi-bin/status.cgi?servicegroup=SERVICE_Site-BDII&style=detail
  - 301 tickets opened since mid March 2014, out of which 287 tickets have been solved

- New tests released in the last version which raise ERROR messages will have an impact on the sites
GLUE 2 validation statistics for WLCG

GLUE 2.0 Site Validation (exclude-known-issues)

999999999 default values

444444 Waiting Jobs error

Statistics per type

- Obsolete Entry (error)
- Default Value (error)
- Default Value (info/warning)
- Out of limits (info)
- Others

Oct-13  | Nov-13  | Dec-13  | Feb-14  | Mar-14  | May-14  | Jul-14  | Sep-14
Important GLUE 2 fixes have been released in July in EMI 3

- These fixes are related to batch system information providers
  - Some default values were still being published due to bugs in these information providers (GGUS 101157)
  - An improvement in the quality of these attributes has been observed
    - INFO and WARNING messages due to 999999 being published should disappear as now default values are different from undefined limits (GGUS 97721)

- 444444 errors related to site misconfigurations are still happening
  - Sites are strongly encouraged to check:
    https://wiki.egi.eu/wiki/Tools/Manuals/TS59
444444 Waiting Jobs in the last month

Information System Status - GDB 10th September 2014
GLUE 2 validation open issues

• Automating GLUE 2 validation has been a great success
• However there are some sites who seem to be raising ERROR messages for long periods of time
  – Why aren’t this fixed?
  – Need to follow up GGUS tickets a bit closely to understand how sites are fixing the reported problems
GLUE 2 storage validation
ATLAS SRM vs BDII

• Like LHCb, this is now monitored in the dashboard
  – http://wlcg-mon.cern.ch/dashboard/request.py/siteview#currentView=BDII+vs+SRM+ATLAS+Storage
  – It compares once per day BDII values with SRM values taken from http://bourricot.cern.ch/SLS/data/
  – Most space tokens are aligned in both SRM and BDII
    • Main inconsistencies due to known issues
    • This means Storage information published by the BDII is as reliable as the SRM information
Information Provider Fixes

• Storage Info Providers meeting held in May 2014
  – https://indico.cern.ch/event/316488/
  – Action items to follow up on storage inconsistencies published at sites

• CASTOR/EOS
  – GLUE 2 information published since August

• DPM
  – Issues detected and fixed
    • Both affecting storage capacity and GLUE 2 errors
    • Release containing these fixes expected in October

• StoRM
  – GLUE 2 errors fixed
  – Storage issues for Tape not fixed
    • In principle it only affects INFN-T1

• dCache
  – No major issues detected
GLUE Storage Monitoring

- [http://wlcg-mon.cern.ch/dashboard/request.py/siteview#currentView=Storage+Deployment](http://wlcg-mon.cern.ch/dashboard/request.py/siteview#currentView=Storage+Deployment)

<table>
<thead>
<tr>
<th>Site Name</th>
<th>GLUE 1 Nearline Storage</th>
<th>GLUE 2 Nearline Storage</th>
<th>GLUE 1 Online Storage</th>
<th>GLUE 2 Online Storage</th>
<th>GLUE 1 storage instances</th>
<th>GLUE 2 storage instances</th>
<th>GLUE 1 storage sites</th>
<th>GLUE 2 storage sites</th>
<th>GLUE 2 Storage Endpoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPM</td>
<td>40</td>
<td>NA</td>
<td>49.32</td>
<td>47.26</td>
<td>203</td>
<td>202</td>
<td>177</td>
<td>182</td>
<td>907</td>
</tr>
<tr>
<td>StorRM</td>
<td>9.79</td>
<td>11.57</td>
<td>31.81</td>
<td>29.17</td>
<td>63</td>
<td>82</td>
<td>51</td>
<td>51</td>
<td>123</td>
</tr>
<tr>
<td>castor</td>
<td>111.7</td>
<td>94.67</td>
<td>52.56</td>
<td>NA</td>
<td>20</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>123</td>
</tr>
<tr>
<td>dCache</td>
<td>77.18</td>
<td>107.39</td>
<td>145.69</td>
<td>101.03</td>
<td>79</td>
<td>59</td>
<td>56</td>
<td>39</td>
<td>1124</td>
</tr>
<tr>
<td>aces</td>
<td>0.0</td>
<td>NA</td>
<td>0.0</td>
<td>0.0</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

(*) Capacities are in PB
Summary

• BDII service stable
  – Few releases with minor fixes and effort mainly going to glue-validator

• BDII information quality automatically validated and monitored
  – Still a few open issues to be followed up
  – Effectiveness of the validation to be better understood