



Consolidating WLCG topology and configuration in the Computing Resource Information Catalogue

CHEP 2016

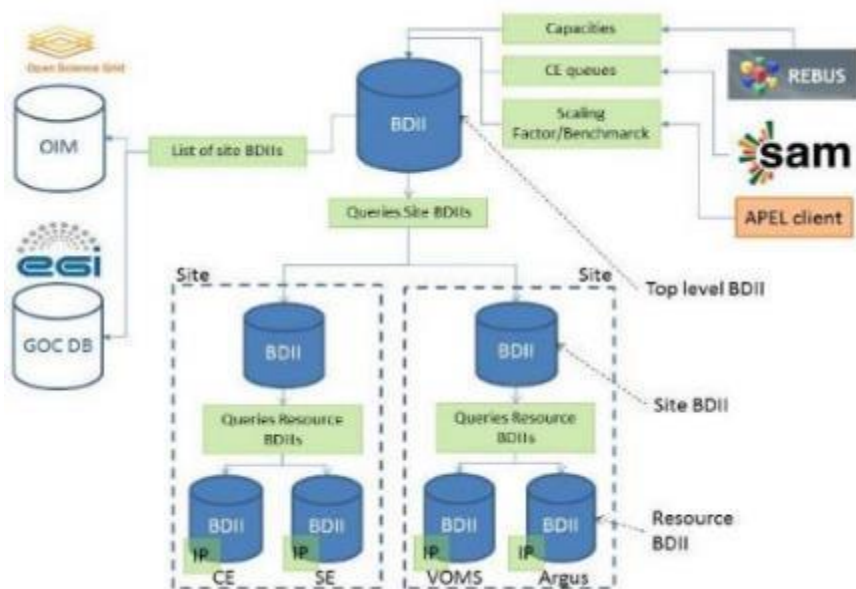
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Overview

- The Current WLCG IS
- CRIC in a Nutshell
- CRIC Main Features
- Experiment CRICs
- CRIC Roadmap

The Current WLCG IS



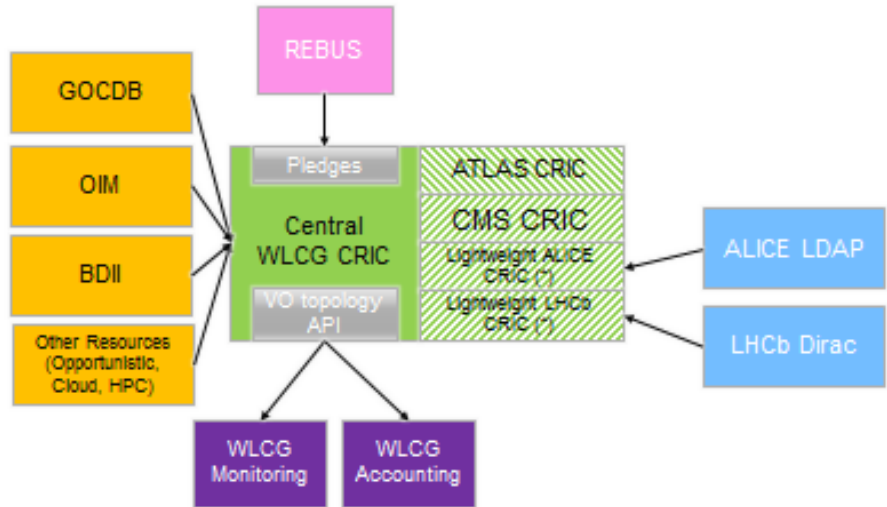
- The WLCG IS is needed for service discovery, operations, monitoring and accounting
- BDII is the main building block of the WLCG IS
- OSG will stop publishing in the BDII on 31.03.2017
- EGI will keep on relying on the BDII
- LHC VOs only rely on the BDII for computing information

- LHC VOs have developed their own IS in order to add experiment specific information and cope with different information sources
- A more flexible system that could be adapted to heterogeneous information sources and integrates all existing use cases is needed

Current IS vs CRIC



CRIC in a Nutshell



(* Maintained by WLCG to store very simple experiment topology information (i.e. experiment names)

- Based on ATLAS IS (AGIS), extended and refactored. Python and Django
- WLCG Core CRIC
 - Single entry point for WLCG topology and service configuration
 - Consumes information from all available information sources
- Experiment CRIC
 - Describes experiment topology
 - Uses core CRIC and adds extra bits needed by experiment operations and workflows
- Lightweight CRIC
 - Experiment site names and WLCG site names mapping and information on which resources are used by the experiment
 - It is needed for WLCG monitoring and accounting

CRIC Main Features

- Provide a unified view for all WLCG resources and a consistent interface for all WLCG clients
- Include information from opportunistic resources not belonging to EGI or OSG and also for HPC and clouds
- Validate information
- Log information (when, what, who) and keep history of changes
- Integrate information from experiments in a common framework

Experiment CRICs

- WLCG IS should also take into account experiment needs
 - Decouple “resources provided by” with “resources used by”
- Experiments need specific configuration information to be able to integrate resources with their data and workflow management tools
 - This is currently collected in the experiment IS
 - This is internal for each experiment and differ from one experiment to another
- CRIC offers the possibility of implementing a experiment CRIC dealing with all these requirements and integrating with core CRIC
 - Experiment CRICs are implemented as pluggable modules

CRIC Roadmap

- AGIS code re-structuring to cleanly decouple core part from experiment plugins
- Core CRIC
 - Identify use cases and define needed functionality
 - Customisation of the webUI
 - Information sources integration allowing for maximum flexibility
 - Giving sites the chance to simplify their effort on maintaining the existing information sources
- Experiment CRIC
 - Implementation of the CMS-specific concepts and customisation of the webUI
 - Implementation of the lightweight version for LHCb and ALICE
 - AGIS to CRIC migration for ATLAS

Useful Links

- **Core CRIC**

<https://twiki.cern.ch/twiki/bin/view/EGEE/CoreCRIC>

- **WLCG IS Evolution Task Force**

<https://twiki.cern.ch/twiki/bin/view/EGEE/WLCGISEvolution>

- **Grid Information System**

<http://gridinfo.web.cern.ch/>

Backup slides

CRIC Development Plans

- AGIS code re-structuring in order to cleanly decouple the core generic part from the experiment-specific plugins.
- Storage object re-design with proper implementation of concepts like multiple protocols, quota nodes and permissions. Integration of the new storage objects with the experiments
- Federated Identity integration and user management permissions: integration of the single-sign-on authentication/authorization with the management of CRIC objects, implementation of user access permission policy at the level of object instance
- Implementation of the CMS-specific concepts and required customization of the webUI
- Support of annotation: tracking the source of information from which data is collected and provide functionality to overwrite (manual change) of automatically collected data with lifetime, allowing the possibility to easily spot and fix not correct information.
- Deployment model optimization: evaluate the possible deployments of CRIC, e.g. single CRIC Core central instance with various Experiment-specific instances connected, or multiple separated Core+Experiment-specific complete instances, etc.