

Experience from the BELLE II Experiment

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Introduction

The usage of EGI Fed Cloud by Belle II Experiment has been done in the context of project JENNIFER2 funded under the Horizon2020 program of the European Union as a Marie Skłodowska Curie Action of the RISE program, under grant n.822070.

One of the goal is to exploiting computing and data handling technologies for the three experiments, Belle II, T2K, and HK.

The activity may continue with JENNIFER3.

Demonstrator Startup in 2019

In order to define a set of common tools, the computing models of the three experiments were first thoroughly examined as follow during a meeting we at CERN December 2019.

As outcome of the event we decided to setup a common Cloud Computing infrastructure for the three experiments based on VCYCLE.

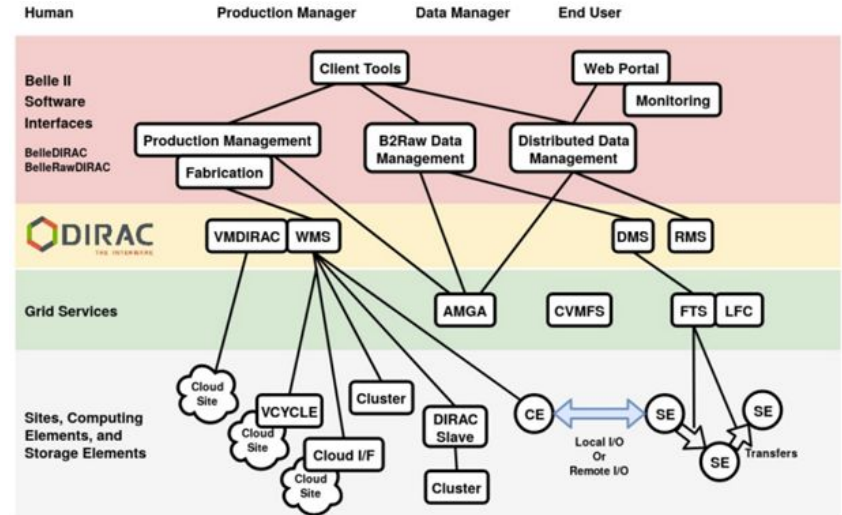


CentOS

DIRAC Framework for Belle II, T2K, HyperK

DIRAC is a framework for data and workload management. It enables users to submit jobs and retrieve data over different computing resources distributed everywhere. The three experiments Belle II, T2K, HyperK use DIRAC to perform MonteCarlo simulations, analysis, skimming over the GRID.

Through DIRAC it is possible to send jobs to several kinds of resources via GRID interface, SSH, and cloud as well.



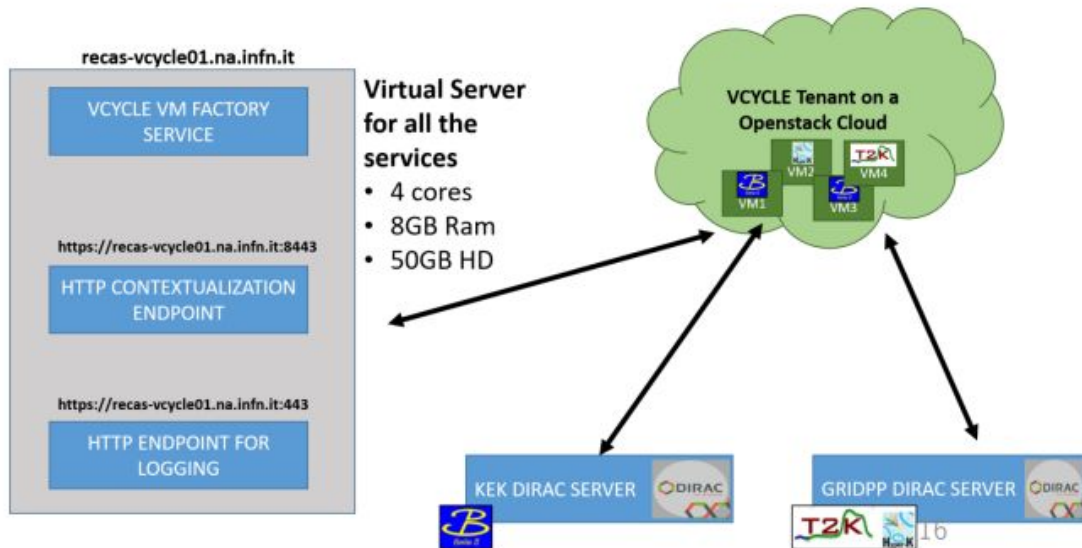
M. Bračko, Jennifer2 CompWS, CERN, 2019/12/12

JENNIFER2 Cloud Demonstrator

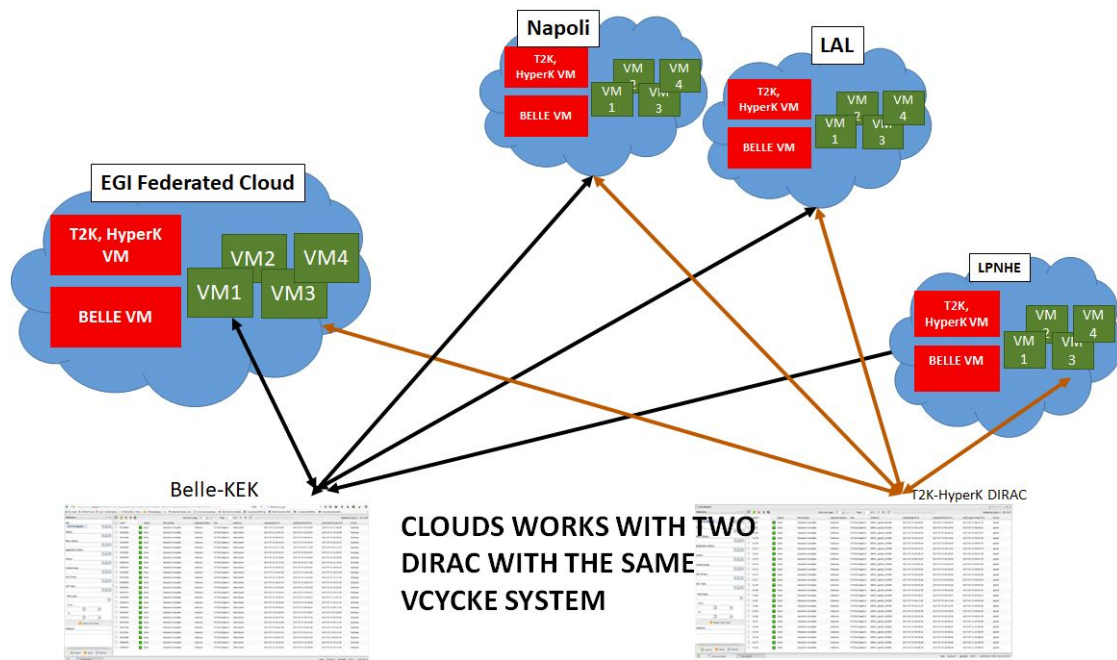
For the JENNIFER2 demonstrator we created a single VCYCLE service infrastructure and we attached it to Different Openstack Clouds using a standard local account:

- LAL (IJCLAB)
- LPNHE-GRIF
- Napoli
- EGI Fed Cloud

In order to integrate EGI Fed Cloud VCYCLE has been extended with an authentication module for token based authentication



Cloud Demonstrator



EGI Conference:

<https://indico.egi.eu/event/5000/contributions/14307/attachments/13236/16166/JENNIF>

ER2-Demonstrator-Full-Presentation.pdf

The 11th International Conference on Engineering Mathematics and Physics

(ICEMP22): <http://www.icemp.org/>

- Best presentation awarded

- Proceeding on International Journal of Applied Physics and Mathematics

End of support of VCYCLE and DIRAC CloudComputingCE

VCYCLE is not now in end of life, it can be substituted by CloudComputingCE interface of DIRAC. EGI site of IRES in testing on our Certification Interface, it require the creation of a set of application credential.

Selectors		Items per page: 25	Page 1 of 1	Updated: 2024-10-01 10:28 [UTC](13 14:26)	Displaying topics 1 -							
Site:	PilotJobRe...	Status	Site	Computing...	Broker	CurrentJobID	GridType	TaskQueu...	BenchMark	OwnerGroup	LastUpdateTime[U...	SubmissionTime[U...
Cloud.EGI.eu	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1277345	Cloud	157623	24.8	belle_pilot	2024-09-30 17:02:28	2024-09-30 16:58:17
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1277346	Cloud	157623	24.6	belle_pilot	2024-09-30 17:00:33	2024-09-30 16:56:19
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1277351	Cloud	157623	25.3	belle_pilot	2024-09-30 16:51:26	2024-09-30 16:44:18
	<input type="checkbox"/>	Running	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1277348	Cloud	157623	39.1	belle_pilot	2024-09-30 16:41:37	2024-09-30 16:36:14
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1267347	Cloud	155910	33.9	belle_pilot	2024-09-06 02:41:38	2024-09-06 02:14:44
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	-	Cloud	155907	0	belle_pilot	2024-09-06 06:16:23	2024-09-06 01:50:50
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1267234	Cloud	155844	33.6	belle_pilot	2024-09-05 20:46:02	2024-09-05 20:42:27
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	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1267090	Cloud	155757	31.5	belle_pilot	2024-09-05 13:04:27	2024-09-05 11:40:08
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1267045	Cloud	155732	31.5	belle_pilot	2024-09-05 09:29:19	2024-09-05 09:03:47
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1266938	Cloud	155732	32.2	belle_pilot	2024-09-05 12:45:06	2024-09-05 09:01:47
	<input type="checkbox"/>	Done	CLOUD.E...	sbgcloud.i...	bldiracvm0...	1266939	Cloud	155732	29.6	belle_pilot	2024-09-05 12:05:19	2024-09-05 08:59:54

Feedback and plans

Good support from EGI Team and from the Federated Cloud Teams

Management of Images take some time

New Challenge in the context of JENNIFER3 (starting the 1 January 2025):

- Work for the full transition from VCYCLE to CloudComputingCE
- Test cloud for Analysis and/or ML/AI applications
- Deliverable D.5.1 Organization of a workshop on the usage of Cloud Computing technologies in the context of Belle II, T2K and Hyper-K (month 24)