

Possible evolution of the ALICE software packages (offline)

19/03/2015

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From AliRoot to AliRoot + AliPhysics

- Successful transition
- In production since the beginning of 2015
- “Small” AliPhysics package under active development
- “Big” AliRoot package, relatively stable
 - Hosting on GitHub is not possible (> 2GB)
 - Working with “big” repository is more difficult
- At the same time we have set of external packages (~20), see the next page

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
AliEn	v2-19_1	✓	OK	OK	OK	N/A	OK	OK		-AliEn	Mon Mar 9 16:31:36 2015	00:00:54
Total	1 pkgs	1	1	1	1	1 n/a	1	1		1 n/a1	Mon Mar 9 16:31:36 2015	00:00:54

aliroot [top](#)

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
AliRoot	apps_1	×	FAIL	FAIL	FAIL	N/A	FAIL	FAIL		-AliRoot	Thu Mar 12 09:07:42 2015	00:16:08
Total	1 pkgs	1	1	1	1	1 n/a	1	1		1 n/a1	Thu Mar 12 09:07:42 2015	00:16:08

base [top](#)

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
apisconfig	2.4_1	✓	OK	OK	OK	N/A	OK	OK		40ALICE	Mon Mar 9 16:31:46 2015	00:00:10
gcc	4.8.4_1	✓	OK	OK	OK	N/A	OK	OK		396MBGNU	Wed Mar 11 18:05:17 2015	00:30:11
gmp	6.0.0_1	✓	OK	OK	OK	N/A	OK	OK		2MBGNU	Wed Mar 11 17:32:34 2015	00:01:06
jemalloc	3.6.0_1	✓	OK	OK	OK	N/A	OK	OK		2MBBSD License	Mon Mar 9 16:32:06 2015	00:00:20
loadgenerator	1.0_	✓	OK	OK	OK	N/A	OK	OK		-Free	Mon Mar 9 16:32:14 2015	00:00:08
mpc	1.0.3_1	✓	OK	OK	OK	N/A	OK	OK		489KBGNU	Wed Mar 11 17:34:47 2015	00:00:26
mpfr	3.1.2_1	✓	OK	OK	OK	N/A	OK	OK		1MBGNU	Wed Mar 11 17:33:07 2015	00:00:31
gperftools	2.0_1	✓	OK	OK	OK	N/A	OK	OK		10MBBSD License	Mon Mar 9 16:32:53 2015	00:00:39
Total	8 pkgs	8	8	8	8	8 n/a	8	8	414MB, 1 n/a8		Wed Mar 11 18:05:17 2015	00:33:31

fastjet [top](#)

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
boost	1_53_0_1	✓	OK	OK	OK	N/A	OK	OK		128MBBoost Software License - Version 1.0	Mon Mar 9 16:38:46 2015	00:05:53
CGAL	4.4_1	✓	OK	OK	OK	N/A	OK	OK		26MBFree	Mon Mar 9 16:39:49 2015	00:01:03
fastjet	3.0.6_1	✓	OK	OK	OK	N/A	OK	OK		71MBFree	Mon Mar 9 16:44:17 2015	00:04:28
fjcontrib	1.012_1	✓	OK	OK	OK	N/A	OK	OK		6MBFree	Mon Mar 9 16:45:11 2015	00:00:54
Total	4 pkgs	4	4	4	4	4 n/a	4	4	232MB4		Mon Mar 9 16:45:11 2015	00:12:18

geant3 [top](#)

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
geant3	v1-15a_1	✓	OK	OK	OK	N/A	OK	OK		11MBGEANT	Mon Mar 9 17:03:20 2015	00:01:55
Total	1 pkgs	1	1	1	1	1 n/a	1	1	11MB1		Mon Mar 9 17:03:20 2015	00:01:55

geant4 [top](#)

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
clhep	2.1.1.0_	✓	OK	OK	OK	N/A	OK	OK		-CLHEP	Mon Mar 9 16:45:19 2015	00:00:08
geant4	10.00.p01_	✓	OK	OK	OK	N/A	OK	OK		-GEANT	Mon Mar 9 16:45:26 2015	00:00:07
geant4_vmcc	v2-15a_	✓	OK	OK	OK	N/A	OK	OK		-ROOT	Mon Mar 9 16:45:33 2015	00:00:07
Total	3 pkgs	3	3	3	3	3 n/a	3	3	3 n/a3		Mon Mar 9 16:45:33 2015	00:00:22

mc [top](#)

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
crmc	1.4_1	×	OK	FAIL	FAIL	N/A	FAIL	FAIL		-Free	Thu Mar 12 08:51:31 2015	00:03:02
HepMC	2.06.09_28	×	OK	OK	OK	N/A	OK	OK		9MBFree	Thu Mar 12 08:34:55 2015	00:00:28
Total	2 pkgs	2	2	1, 1	1, 1	2 n/a	1, 1	1, 1	9MB, 1 n/a2		Thu Mar 12 08:51:31 2015	00:03:30

root [top](#)

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License	Built on	Build time
root	v5-34-26_1	×	OK	OK	FAIL	N/A	FAIL	FAIL		-ROOT	Thu Mar 12 08:48:27 2015	00:13:31
Total	1 pkgs	1	1	1	1	1 n/a	1	1	1 n/a1		Thu Mar 12 08:48:27 2015	00:13:31

All Total 21 pkgs 17, 4 20, 1 19, 2 18, 3 21 n/a 18, 3 18, 3 667MB, 8 n/a21 Thu Mar 12 09:07:42 2015 01:22:09

AliRoot hosting “external” code & data

- Generators & interfaces
 - DIME
 - DPMJET
 - EPOS
 - HERWIG
 - HIJING
 - PYTHIA6
 - PYTHIA8
 - STARLIGHT
 - TAmpt
 - TDPMjet
 - TEPEMGEN
 - TEvtGen
 - THbtp
 - THerwig
 - THijing
 - THydjet
 - TPHIC
 - TTherminator
 - TUHKMgen
- OCDB
 - Root files
- LHAPDF
 - Also data files
- “Libraries”
 - MICROCERN: additional to Geant3?
 - Vc: available also in Root
- “Tools”
 - RuleChecker: obsolete and not supported

Advantages

- “Easy” distribution
- “Self-consistent” versions
- Full access to the code, possibility to modify it
- Control of the compilation options
- Possibility to use rootmaps
- Psychology: “People are used to it”

Disadvantages

- Heterogeneous build: packages outside and inside AliRoot
- Big size of repository
- Not clear what are the modifications we do in the “external” packages
- No support for the external packages in AliRoot
- Conflicting versions of some packages, i.e. Pythia6, Vc from Root vs AliRoot
- Different testing patterns

Proposal for the “external” packages

- Use the FairSoft way of distribution of external packages (or directly FairSoft after including there the missing packages)
 - Download from the authoritative source and apply well defined set of patches (if needed)
 - Use CMake to steer the process
 - Use configuration file to specify the set of versions and their dependencies

Proposal for OCDB

- Remove the Root files from AliRoot, including the history
- Provide set of macros to be able to generate the default OCDB (Raffaele is discussing with the detector experts)
- Provide an OCDB snapshot for anchored simulation tests (from AliEn or from a dedicated URL)

What do we do for packages, available only from AliRoot?

- Several generators are available only from AliRoot, i.e DPMJET, TUHKMgen, etc.
- Possibilities
 - Keep in AliRoot
 - Make new repository(ies) and use it(them) in the compilation of the external packages
- The second option has advantage if we need to restrict the access