



## **AliEn/AliRoot Build Integration and Testing System**

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# What to install

- Two types of packages:

- Experiment software:

ROOT  , GEANT3,  AliRoot

An Object-Oriented  
Data Analysis Framework

- GRID interface:  AliEn<sup>2</sup>  
@GRID

- Requirements

- Self-contained
- Platform dependent
- User space
- Size does matter



# Build & Test systems



## AliEn BITS Global View

i686 | x86\_64 | Itanium | IntelMac | IntelMac64 | SLC5\_i686 | SLC5\_x86\_64 | UBUNTU\_x86\_64 | Show All

[Jump to i686](#)

### AliEn Releases for i686-pc-linux-gnu

Release	Date	Description	Status	Built on	Build time	Build #
HEAD	--/------	Current CVS head	✓	Sat Jun 20 08:06:04 2009	00:03:43	51
v2-17	18/06/2009	Stable	✓	Mon Jun 22 22:23:24 2009	02:03:52	1
v2-16	18/11/2008	Stable	✓	Fri Jun 12 08:14:47 2009	00:11:36	69
v2-15	14/05/2008	Stable	✓	Fri Nov 14 18:06:16 2008	00:05:20	64
v2-14	06/12/2007	Stable	✓	Tue Apr 22 13:54:00 2008		
v2-13	23/04/2007	Stable	N/A	N/A		
v2-12	29/11/2006	Stable	N/A	N/A		
v2-11	07/09/2006	Stable	N/A	N/A		
v2-10	15/05/2006	Stable	N/A	N/A		

Generated on: Mon Jun 22 22:23:24 2009

[Jump to x86\\_64](#)

### AliEn Releases for x86\_64-unknown

Release	Date	Description	Status	Built on
HEAD	--/------	Current CVS head	✓	Fri Jun 19 23:05:20 2009
v2-17	18/06/2009	Stable	✓	Mon Jun 22 23:04:00 2009



## AliEn Build Integration and Testing Sys

Platform: i686-pc-linux-gnu  
Release: v2-16

[Go to: All Releases | HEAD | v2-16 | v2-15 | v2-14 | Test Logs](#)

### AliEn Installation Tests for v2-16

Build number	Built on	Test Status
48	Wed Mar 11 14:39:40 2009	Test failed

Test progress: Overall Status: Stopped AliEn (before) Cleanup Installer A

Test details: Create cert New VO User tests A

AliEn Services	Failed Tests
ApService.log	10.test603-aliensh-basics
Authn.log	10.test97-pan
Authn.log.back	11.test08-createKeys
Broker_Job.log	11.test610-roots-se
Broker_Job.log.back	111.test20-offline
Broker_Transfer.log	124.test302-bankUserCommand
Broker_Transfer.log.back	125.test303-bankAdminCommand
CE.log	126.test304-execOrder

Main Log:

```
Starting PID (2009_03_11-15:02)...
Shell limits:
core file size      (blocks, -c) 0
data seg size      (kbytes, -d) unlimited
file size           (blocks, -f) unlimited
pending signals     (-l) 1024
max locked memory   (kbytes, -l) 32
max memory size     (kbytes, -m) unlimited
open files          (-n) 1024
```



## AliRoot BITS Global View

i686 | x86\_64 | RHEL5 | IntelMac | IntelMac64 | About AliRoot



[Jump to i686](#)

### AliRoot Releases for i686-pc-linux-gnu

Release	Date	Description	Status	Built on	Build time	Build #
HEAD	--/------	Current CVS head	N/A	N/A	N/A	N/A
v4-16-Rev-06	02/03/2009	02/03/2009	✓	Thu Mar 12 07:11:22 2009	05:34:59	4
v4-16-Rev-05	28/01/2009	28/01/2009	✓	Sat Jan 31 07:05:19 2009	05:26:35	3
v4-16-Rev-04	22/01/2009	22/01/2009	✓	Sat Jan 24 06:58:53 2009	05:28:55	2
v4-16-Rev-03	19/12/2008	19/12/2008	✓	Tue Jan 6 06:32:05 2009	05:26:30	6
v4-16-Rev-02	12/12/2008	12/12/2008	✓	Fri Dec 12 18:40:50 2008	05:30:05	2
v4-16-Rev-01	13/11/2008	13/11/2008	✗	Thu Nov 13 14:47:17 2008		1

[Jump to x86\\_64](#)

### AliRoot Releases for x86\_64-unknown-linux-gnu

Release	Date	Description	Status	Built on	Build time	Build #
HEAD	--/------	Current CVS				



# Purpose

- Have a current, up to date, installable binary image of AliEn and AliRoot for different architectures
- Automate the process of building AliEn components and of AliRoot
- Better understanding of the dependencies between packages
- Perform functional and unit tests at build time and receive alerts immediately
- Web interface that allows the monitoring of the build status and remote access to logs



# Supported architectures

Currently we support for both AliEn and AliRoot the following architectures:

- SLC4 32bits
- SLC4 64bits
- SLC4 Itanium
- SLC5 32bits
- SLC5 64bits
- IntelMac 32bits
- IntelMac 64bits
- Ubuntu 64bits



## AliEn Build Integration and Testing System

**BITS:** i686 - i686-pc-linux-gnu

**Go to:** All . i686 . x86\_64 . Itanium . IntelMac . IntelMac64 . SLC5\_i686 . SLC5\_x86\_64 . UBUNTU\_x86\_64



## AliEn Build Integration and Testing System

Platform: i686-pc-linux-gnu  
Release: HEAD

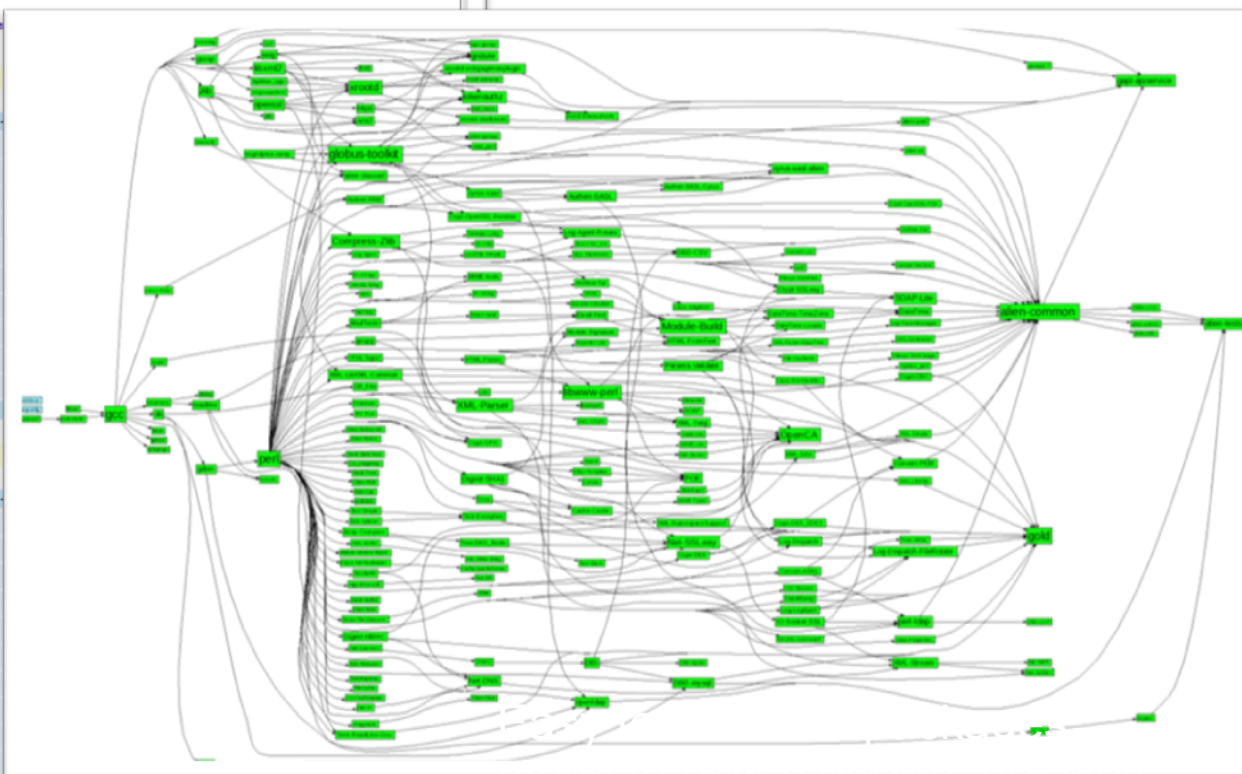
Go to: [All Releases](#) | [All Build](#) . alien . base . devel . gcc . monitor . portal . server | [All SLOC](#) | [All Deps](#)

### alien

Package	Version	Status	Prepare	Make	-install	-test	-cache
alien-admin	HEAD_19	✓	OK	OK	OK	N/A	OK
AliEn-ARC	HEAD_18	✓	OK	OK	OK	OK	OK
alien-classad	2.1.1_3	✓	OK	OK	OK	OK	OK
alien-common	HEAD_18	✓	OK	OK	OK	N/A	OK
gapl-apiser vice	2.1.16_18	✓	OK	OK	OK	N/A	OK
alien-gssapi	2.1.6_4	✓	OK	OK	OK	N/A	OK
AliEn-LCG	HEAD_19	✓	OK	OK	OK	OK	OK
alien-perl	2.1.2_3	✓	OK	OK	OK	N/A	OK
cyrus-sasl-alien	2.1.22_5	✓	OK	OK	OK	N/A	OK
alien-tests	HEAD_20	✓	OK	OK	OK	N/A	OK
<b>Total</b>	10 pkgs	10	10	10	10	3, 7 n/a	10

### base

Package	Version	Status	Prepare	Make	-install	-test	-cache
Algorithm-Diff	1.1901_3	✓	OK	OK	OK	OK	OK
ApMon_perl	2.2.19_3	✓	OK	OK	OK	OK	OK
ApMon_cpp	2.2.6_2	✓	OK	OK	OK	N/A	OK
Archive-Tar	1.29_3	✓	OK	OK	OK	OK	OK
Archive-Zip	1.16_3	✓	OK	OK	OK	OK	OK
Array-Compare	1.16_3	✓	OK	OK	OK	OK	OK
Authen-PAM	0.15_3	✓	OK	OK	OK	N/A	OK
Authen-SASL	2.10_4	✓	OK	OK	OK	OK	OK
Authen-SASL-Cyrus	0.13-server_4	✓	OK	OK	OK	N/A	OK
BSD-Resource	1.2901_3	✓	OK	OK	OK	OK	OK
Cache-Cache	1.04_3	✓	OK	OK	OK	OK	OK
Class-Base	0.03_3	✓	OK	OK	OK	OK	OK



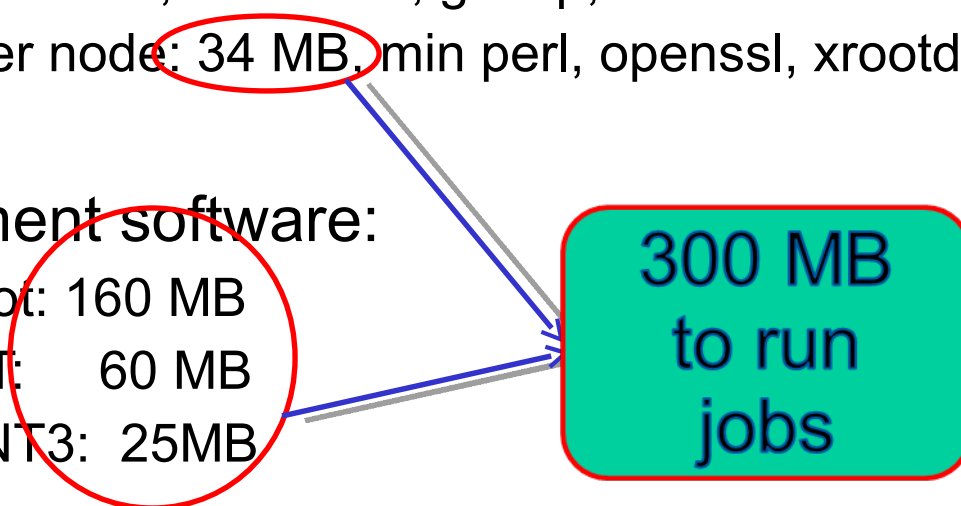
OK 243KB Perl Thu Feb 26 18:57:55 2009 00:01:36  
OK 49KB Perl Thu Feb 26 17:47:13 2009 00:00:09

- AliEn Build Environment
  - Builds AliEn and its dependencies
  - Prepares archives for
    - AliEn installer
    - Preinstalled AliEn version
      - Workernode
      - VOBox
      - Client
      - Complete installation
    - Uploads archives to the torrent seeder
    - Offers a user-friendly web interface for build monitoring
- AliEn Test Environment
  - Performs a large set of functional tests
  - Access to the logs using the web interface

Release	Date	Description	Status	Built on
HEAD	--/------	Current CVS head	✓	Sat Jun 21 2009
v2-17	18/06/2009	Stable	✓	Mon Jun 2 2009
v2-16	18/11/2008	Stable	✓	Fri Jun 12

# Packaging & size

- Combine all the required grid packages into distributions
  - Full installation: 155 MB, mysql, ldap, perl, java...
  - VO-box: 122 MB, monitor, perl, interfaces,
  - User: 55 MB, API client, gsoap, xrootd
  - Worker node: 34 MB, min perl, openssl, xrootd
- Experiment software:
  - AliRoot: 160 MB
  - ROOT: 60 MB
  - GEANT3: 25MB



300 MB  
to run  
jobs





- AliEn v2-17 – updates from build point of view
  - gcc 4.1.2 (SLC5 gcc)
  - Cleanup of modules (ex: distributing only one gsoap)
  - SLC5 and Ubuntu allowed to find missing libraries that were taken from the system
  - Latest version of xrootd (Fabrizio)
  - Xrd3cp (Andreas)
  - Latest version of MySQL 5.1
  - Torrent support – aria2c client

# AliRoot



Follows the same pattern of building as AliEn



## AliRoot Build Integration and Testing System

Platform: x86\_64-unknown-linux-gnu  
Release: v4-17-04

Goto: [All Releases](#) | [All Build](#) . [alien](#) . [aliroot](#) . [base](#) . [fastjet](#) . [geant3](#) . [root](#) | [All SLOC](#) | [All Dependencies](#)

### alien

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License
AliEn	v2-16_1	✓	OK	OK	OK	N/A	OK	OK	264MB	AliEn
<b>Total</b>	1 pkgs	1	1	1	1	1 n/a	1	1	264MB	1

### aliroot

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License
AliRoot	v4-17-04_3	✓	OK	OK	OK	OK	OK	OK	605MB	AliRoot
<b>Total</b>	1 pkgs	1	1	1	1	1	1	1	605MB	1

### base

Package	Version	Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License
apisconfig	2.4_1	✓	OK	OK	OK	N/A	OK	OK	40	ALICE
dim	v16r8_	✓	OK	OK	OK	N/A	OK	OK	456KB	Free
<b>Total</b>	3	3	3	3	3	3 n/a	3	3	456KB, 1 n/a	3

### AliRoot Releases for x86\_64-unknown-linux-gnu

Release	Date	Description	Status	Built on	Build time	Build #
HEAD	--/------	Current CVS head	✓	Thu Jun 18 04:13:16 2009	03:03:33	43
v4-17-04	18/06/2009	18/06/2009	✓	Mon Jun 22 05:02:50 2009	03:31:16	3
v4-17-03	29/05/2009	29/05/2009	✓	Sun May 31 07:20:48 2009	05:50:39	2
v4-17-02	22/05/2009	22/05/2009	✓	Sun May 24 07:18:46 2009	06:18:12	1

Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License
✓	OK	OK	OK	N/A	OK	OK	69MB	Boost Softwar
✓	OK	OK	OK	N/A	OK	OK	-	Free
✓	OK	OK	OK	OK	OK	OK	41MB	Free
3	3	3	3	1, 2 n/a	3	3	110MB, 1 n/a	3

Status	Prepare	Make	-install	-test	-cache	-autopkg	Files	License
✓	OK	OK	OK	N/A	OK	OK	6MB	GEANT



# AliRoot on the GRID

- After a complete build and in case of no errors during the tests AliRoot packages can be registered into AliEn using a web interface from MonAlisa

Install packages						
Package name	Platforms					Install all
	Linux-i686	Linux-ia64	Linux-x86_64	Darwin-i386	Darwin-x86_64	
APISCONFIG V2.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AliRoot trunk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AliRoot v4-17-02	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AliRoot v4-17-03	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AliRoot v4-17-04	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GEANT3 v1-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GEANT3 v1-10-1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remove installed packages	
Package name	Remove
VO_ALICE@AliRoot::v4-13-Rev-03	<input type="checkbox"/>
VO_ALICE@AliRoot::v4-15-Rev-01	<input type="checkbox"/>
VO_ALICE@AliRoot::v4-15-Rev-05	<input type="checkbox"/>
VO_ALICE@AliRoot::v4-15-Rev-06	<input type="checkbox"/>
VO_ALICE@AliRoot::v4-16-Rev-01	<input type="checkbox"/>
VO_ALICE@AliRoot::v4-16-Rev-02	<input type="checkbox"/>
VO_ALICE@AliRoot::v4-16-Rev-03	<input type="checkbox"/>
VO_ALICE@AliRoot::v4-16-Rev-05	<input type="checkbox"/>



# AliRoot Tests[1]

- tests are triggered at the end of the build
- the tests report to a MonAlisa monitoring page
- full access to the tests logs

Builds											
Builds											
Start	Duration	Status	OS	Arch	Release	Prepare	Make	-install	-test	-cache	-autopkg
- All -	- All -	- All -	- All -	- All -	- All -						
23.01.2009 08:57			darwin9.6.1	i686		20m 12s					
23.01.2009 08:54			darwin9.6.1	x86_64		17m 40s	34m 40s	5m 0s			
23.01.2009 01:00	2:00	OK	darwin9.6.1	i686	v4-16-Rev-04	21m 9s	55m 13s	5m 42s	19m 29s	16m 37s	5s

AliRoot benchmarks											
Reconstruction PbPb											
Start	End	Duration	State	OS	Arch	Release	CPU time	Wall time	Total memory	RSS memory	File size
- All -	- All -	- All -	- All -	- All -	- All -	- All -					
23.01.2009 03:25	23.01.2009 06:23	2:58		Linux	i686	v4-16-Rev-04	5m 42s	5m 50s	841.1 M	679.1 M	
23.01.2009 02:48	23.01.2009 05:02	2:14		Linux	x86_64	v4-16-Rev-04	4m 4s	4m 5s	1.114 G	832 M	
12.01.2009 03:11	12.01.2009 05:20	2:08		Linux	x86_64	v4-16-Rev-03	3m 56s	3m 58s	1.103 G	821 M	

Reconstruction pp											
Start	End	Duration	State	OS	Arch	Release	CPU time	Wall time	Total memory	RSS memory	File size
- All -	- All -	- All -	- All -	- All -	- All -	- All -					
13.01.2009 10:57	23.01.2009 11:49	52m 22s		Darwin	i386	v4-16-Rev-04	4m 44s	5m 12s	3.419 G	624 M	
13.01.2009 03:25	23.01.2009 04:35	1:10		Linux	i686	v4-16-Rev-04	3m 8s	4m 26s	742.6 M	548 M	
13.01.2009 02:48	23.01.2009 03:43	55m 7s		Linux	x86_64	v4-16-Rev-04	2m 17s	2m 33s	1021 M	690.7 M	
2.01.2009 03:11	12.01.2009 04:06	55m 30s		Linux	x86_64	v4-16-Rev-03	2m 13s	2m 31s	1011 M	680.3 M	

Simulation PbPb											
Start	End	Duration	State	OS	Arch	Release	CPU time	Wall time	Total memory	RSS memory	File size
- All -	- All -	- All -	- All -	- All -	- All -	- All -					
13.01.2009 03:25	23.01.2009 06:17	2:52		Linux	i686	v4-16-Rev-04	1:35	1:36	1.53 G	933.3 M	40.98 M
13.01.2009 02:48	23.01.2009 04:58	2:10		Linux	x86_64	v4-16-Rev-04	1:06	1:11	1.953 G	1.182 G	41.3 M
2.01.2009 03:11	12.01.2009 05:15	2:04		Linux	x86_64	v4-16-Rev-03	1:05	1:06	1.951 G	1.18 G	41.27 M
16.01.2009 03:25	06.01.2009 06:17	2:51		Linux	i686	v4-16-Rev-03	1:35	1:36	1.533 G	936.3 M	40.95 M

Simulation pp											
Start	End	Duration	State	OS	Arch	Release	CPU time	Wall time	Total memory	RSS memory	File size
- All -	- All -	- All -	- All -	- All -	- All -	- All -					
23.01.2009 10:57	23.01.2009 11:44	47m 5s		Darwin	i386	v4-16-Rev-04	45m 53s	47m 2s	4.085 G	843.6 M	190.6 M
23.01.2009 03:25	23.01.2009 04:31	1:05		Linux	i686	v4-16-Rev-04	1:02	1:05	1.207 G	599 M	184.6 M
23.01.2009 02:48	23.01.2009 03:40	52m 28s		Linux	x86_64	v4-16-Rev-04	51m 30s	52m 23s	1.626 G	872.2 M	191.6 M
12.01.2009 03:11	12.01.2009 04:04	52m 53s		Linux	x86_64	v4-16-Rev-03	51m 33s	52m 47s	1.651 G	897.8 M	191.6 M

- simulation and reconstruction of p+p and Pb+Pb (standard setup) with trunk
- reconstruction from MC and RAW reference data
- output analyzed with standard set of macros



# Conclusions

## Build and test system

- for multiple platform
- automatic build process of packages
- web interface that allows to follow and understand the build process
- will produce
  - Small, self-contained packages



## AliEn Build Integration and Testing System

**BITS:** i686 - i686-pc-linux-gnu

**Go to:** All . i686 . x86\_64 . Itanium . IntelMac . IntelMac64 . SLC5\_i686 . SLC5\_x86\_64 . UBUNTU\_x86\_64

<http://alienbuild.cern.ch:8888/8889>