

# “Xoreax” Incredibuild For Linux Release notes

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# Introduction

The goal of this document is to provide clear status for planned work, developed features and expose issues found during internal QA tests

## ***Package information***

- Package created by automatic “GNU Make” system and propriety build configuration
- Package as binary code is located on [https://github.com/dimakuzminov/incredibuild\\_deployment.git](https://github.com/dimakuzminov/incredibuild_deployment.git)
- Package structure
  - bin/ - all Incredibuild binary applications
  - web/ - Monitor scripts, sources and libraries
  - etc/ - system scripts that are used on “Helper” and “Initiator” machines
  - usr/ - system files for “Helper” and “Initiator” machines
  - Documentation/ - all relevant Documents for this project (including this document)
  - grid\_server\_domain.conf.[domain\_group\_name] this file list DNS of computers in grid domain (it is manually defined files). For more information please read “Linux\_Incredibuild\_deployment\_Instructions\_v1.0.doc”
  - linux.pem – ssh access internal key (defined by amazon site, but used in all our test systems)
  - “prepare\_incredibuild\_machine.sh” - script that install all relevant packages on helper/initiator machines. For more information please read “Linux\_Incredibuild\_deployment\_Instructions\_v1.1.doc”
  - “prepare\_coordinator\_machine.sh” - script that install all relevant packages on coordinator machine. For more information please read “Linux\_Incredibuild\_deployment\_Instructions\_v1.1.doc”
  - 3rd\_side/ - all scripts to install 3rd side applications for grid computation
  - obsolete/ - all scripts that were previously supported, some need to be removed and some need to be updated
- How to Install [APPENDIX A]

## Changes

- incredbuild and incredbuild\_coordinator services supporting status
- web page of monitor is blinking, found on Firefox
  - rewrite GUI to reduce redraw time
- fix build crash with message "input/output error" "no space on device"
  - found conflict in NFS client setup, it is due to udp implementation (conflict with cash mechanism)
- installation packages are printing package version
- support linkage process recognition with new process handling mechanism
  - gcc/g++/c++ options " -c : -E : -S " are must option do not running link and collect
  - AllowRemote and AllowLocal is used to support it
    - gcc AllowRemote="yes"
    - gcc AllowLocal="yes" ArgumentsExclude=" -c : -E : -S "
    - it means that gcc will be priority to run on local machine, but if there are exclude options it will run on remote machine as well. In our case exclude is for all process that are not running "link" or "collect2"

## Scope

### ***Changes from version 6.1.10***

commit a18f6401a5c56394702744181dfe16b92435a7bf

Add update for developers script

commit 52a404e1dc97892d882d6a5dd4c9a2669acf55c2

Release version 6.2: fix support for NFS

commit 91288892e3d42de439c55b59a79b07a271c85829

Fix boot process, add runlevel 1,2,3,4

commit 8e7474db23ace17a9e91793bca72b3411070f7ec

add version export support

commit 80f0a225229e2dc79cae54146ebfd187d4dd8a0c

Remove from NFS client "udp" option, it force unstable behavior in system

commit fa308195fd5ca97429a278ea01f12d06821e1358

Rewrite service to support service status option

commit e8013d2450dae6fae039ec195d7dafb70cc14d1b

Fix web GUI blinking and optimize code

commit c653096c4edd34997ec04854c76e5953f52a95ea

Fix profile.xml

commit 2f5c0ecfe0da416002bf5b20de34dba02994b6d2

Added handling of new profile.xml rules

## Tests

### Testing entire solution on one host.

#### Test – 0001 Testing XgConsole starts when GridCoordinator is down

- GridCoordinator is down.
- Run GridServer
- run XgConsole make.
- Expected result:
  - XgConsole error “No available slots”.
- Actual result:
  - XgConsole error “No available slots”.

#### Test – 0002 GridCoordinator is down, run XgRegisterMe

- GridCoordinator is down.
- Run XgRegisterMe.
- Expected result:
  - Connection error.
- Actual:
  - Connection error.

#### Test – 0003 GridCoordinator is down, GridServer is down, run XgConsole

- GridCoordinator is down.
- GridServer is down.
- Run XgConsole make.
- Expected result:
  - XgConsole error “GridServer is down, please run sudo service incredibuild start ”.
- Actual:
  1. XgConsole error “GridServer is down, please run sudo service incredibuild start ”.

#### Test – 0004 GridCoordinator is up, GridServer is down, run XgConsole

- GridCoordinator is up.
- GridServer is down.
- Run XgConsole make.
- Expected result:
  - XgConsole error “GridServer is down, please run sudo service incredibuild start ”.
- Actual:
  1. XgConsole error “GridServer is down, please run sudo service incredibuild start ”.

**Test – 0005 GridCoordinator is up, GridServer is up, run  
prepare\_incredibuild\_machine.sh first time**

- GridCoordinator is up.
- GridServer is up.
- Run prepare\_incredibuild\_machine.sh first time.
- Expected result:
  - Message “local machine is registered”.
- Actual:
  1. Message “local machine is registered”.

**Test – 0006 GridCoordinator is up, GridServer is up, run  
prepare\_incredibuild\_machine.sh not first time**

- GridCoordinator is up.
- GridServer is up.
- Run prepare\_incredibuild\_machine.sh not first time.
- Expected result:
  - Message “local machine is already registered”.
- Actual:
  - Message “local machine is already registered”.



## Test various solutions on Xoreax.

### Test – 0001 Build MySQL solution with exclude parameters feature

- Check that there is no profile.xml in [MySQL]/build directory.
- run XgConsole “make -j” from [MySQL]/build directory.
- Expected result:
  - MySQL should be build.
- Actual result:
  - MySQL was built, elapsed time  
real 5m0.331s  
  
user 0m13.765s  
  
sys 0m15.017s

### Test – 0002 Build MySQL solution without exclude parameters feature

- Create copy of /etc/init.d/incredibuild\_profile.xml in [MySQL]/build directory.
- Open this file and remove all ArgumentsExclude attributes.
- run XgConsole “make -j” from [MySQL]/build directory.
- Expected result:
  - MySQL should be build.
- Actual result:
  - MySQL was built, elapsed time  
real 6m4.498s  
  
user 0m14.129s  
  
sys 0m16.377s

### Test – 0003 Build ACE solution with exclude parameters feature

- Check that there is no profile.xml in ACE directory.
- run XgConsole “make -j” from ACE directory.
- Expected result:
  - ACE should be build.
- Actual result:
  - ACE was built, elapsed time  
real 11m24.161s  
  
user 0m51.555s  
  
sys 0m16.237s

- Known issue:
  - In case of ACE, exclude parameters slow compilation.

### **Test – 0004 Build ACE solution without exclude parameters feature**

- Create copy of /etc/init.d/incredibuild\_profile.xml in ACE directory.
- Open this file and remove all ArgumentsExclude attributes.
- run XgConsole “make -j” from ACE directory.
- Expected result:
  - ACE should be build.
- Actual result:
  - ACE was built, elapsed time
 

real	3m15.262s
user	0m54.847s
sys	0m23.201s

### **Test – 0005 Build Samba solution with exclude parameters feature**

- Check that there is no profile.xml in Samba directory.
- Run XgConsole “make -j” in Samba directory.
- Expected result:
  - Samba should be build.
- Actual result:
  - Samba was built, elapsed time
 

real	6m18.315s
user	2m1.364s
sys	1m9.716s

### **Test – 0006 Build Samba solution without exclude parameters feature**

- Create copy of /etc/init.d/incredibuild\_profile.xml in Samba directory.
- Open this file and remove all ArgumentsExclude attributes.
- run XgConsole “make -j” in Samba directory.
- Expected result:
  - Samba should be build.
- Actual result:
  - Samba was built, elapsed time
 

real	5m57.601s
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user 2m1.168s

sys 1m9.844s

## **Test – 0007 Build Linux Kernel solution**

- run XgConsole “make -j” in Linux Kernel directory.
- Expected result:
  - Kernel should be build.
- Actual result:
  - Kernel was built, elapsed time

real 2m11.259s

user 0m24.714s

sys 0m13.057s

## **Test Incredibuild monitor.**

### **Test – 0001 Monitor blinking was fixed in Firefox browser.**

- Run build of some solution on Xoreax.
- Open monitor in Firefox browser.
- Expected result:
  - Monitor should not blink.
- Actual result:
  - Monitor not blinks.

## **Test installation scripts.**

### **Test – 0001 prepare\_coordinator\_machine.sh shows the version.**

- Run prepare\_coordinator\_machine.sh.
- Expected result:
  - The script should print the version while running.
- Actual result:
  - The script prints the version when it begins to work.

### **Test – 0002 prepare\_incredibuild\_machine.sh shows the version.**

- Run prepare\_incredibuild\_machine.sh.
- Expected result:

- The script should print the version while running.
- Actual result:
  - The script prints the version when it begins to work.

## **Test new features of services.**

### **Test – 0001 service incredibuild\_coordinator shows its status when runs.**

- Run incredibuild\_coordinator service.
- Run command “service incredibuild\_coordinator status”
- Expected result:
  - Message “ \* GridCoordinator is running”.
- Actual result:
  - Message “ \* GridCoordinator is running”.

### **Test – 0002 service incredibuild\_coordinator shows its status when stops.**

- Stop incredibuild\_coordinator service.
- Run command “service incredibuild\_coordinator status”
- Expected result:
  - Message “ \* GridCoordinator is not running”.
- Actual result:
  - Message “ \* GridCoordinator is not running”.

### **Test – 0003 service incredibuild shows its status when runs.**

- Run incredibuild service.
- Run command “service incredibuild status”
- Expected result:
  - Message “ \* GridServer is running”.
- Actual result:
  - Message “ \* GridServer is running”.

### **Test – 0002 service incredibuild shows its status when stops.**

- Stop incredibuild service.
- Run command “service incredibuild status”
- Expected result:
  - Message “ \* GridServer is not running”.
- Actual result:
  - Message “ \* GridServer is not running”.

## Comparison table

launcher	MySQL		Samba		Linux		ACE	
Version 5.0 Xoreax 7 machines 46 slots( new scheduler): 31, 35, 33, 34, 36, 37, 1	real	4m22.500s	real	6m12.928s	real	1m44.109s	Not tested	
	user	0m41.107s	user	2m2.316s	user	0m26.082s		
	sys	0m20.929s	sys	1m10.260s	sys	0m13.113s		
Version 6.1.10 Xoreax 4 machines 22 slots 1, 31, 36, 34	real	3m26.288s	real	5m41.678s	real	2m8.966s	Not tested	
	user	0m13.429s	user	2m1.692s	user	0m24.242s		
	sys	0m15.969s	sys	1m11.208s	sys	0m12.929s		
Version 6.2 Xoreax 5 machines 24 slots, with exclude parameters 1, 31, 36, 34, 22	real	5m0.331s	real	6m18.315s	real	2m11.259s	real	11m24.161s
	user	0m13.765s	user	2m1.364s	user	0m24.714s	user	0m51.555s
	sys	0m15.017s	sys	1m9.716s	sys	0m13.057s	sys	0m16.237s
Version 6.2 Xoreax 5 machines 24 slots, no exclude parameters 1, 31, 36, 34, 22	real	6m4.498s	real	5m57.601s	real	2m12.171s	real	3m15.262s
	user	0m14.129s	user	2m1.168s	user	0m24.198s	user	0m54.847s
	sys	0m16.377s	sys	1m9.844s	sys	0m11.985s	sys	0m23.201s
Local machine	real	15m58.856s	real	8m6.840s	real	5m35.349s	real	9m51.807s
	user	28m48.472s	user	12m10.114s	user	9m29.756s	user	17m14.809s
	sys	1m38.446s	sys	2m48.623s	sys	0m53.447s	sys	1m30.682s

- **Build on local machine only ( 2 cores ) is running with option -j 4.**
  - **Local machine cannot be used for anything else and working at over capacity.**
  - **It is maximal speed that could be achieved**
- **When using XgConsole, there is restriction don't run more than number of cores on each machine and of course all process are running with low priority**
- **For builds 6.2 ND 6.1.10, small number of machines is used.**
  - **Need to rerun tests with 7 machines at least and 46 slots**

# APPENDIX A

## PACKAGE UPDATE

1. please run following commands each time you know there are updates in deployment package
  - 1.1 “cd incredibuild\_deployment”
  - 1.2 “git pull”
    - 1.2.1 if new files, please run following command:
      - 1.2.1.1 coordinator: ./prepare\_coordinator\_machine.sh
        - 1.2.1.1.1 optional can provided predefined “grid\_domain\_server.conf” file as argument
      - 1.2.1.2 initiator/helper machine: ./prepare\_incredibuild\_machine.sh coordinator\_machine\_name/ip\_address
        - 1.2.1.2.1 must specify coordinator\_machine\_DNS\_name to run the script
    - 1.2.2 to remove entire package from current machine:
      - 1.2.2.1 ./remove\_incredibuild\_package.sh

## First time installation

### Install coordinator machine in domain

We need to use Terminal application for this process;

- 1 Open terminal
- 2 write following command to download package from public git repository
  - 2.1 “sudo apt-get install git”
  - 2.2 “git clone [https://github.com/dimakuzminov/incredibuild\\_deployment](https://github.com/dimakuzminov/incredibuild_deployment)”
- 3 install generic package
  - 3.1 “cd incredibuild\_deployment”
  - 3.2 “./prepare\_coordinator\_machine.sh [grid\_server\_domain.conf.[generic\_ubuntu]]”
    - 3.2.1 grid\_server\_domain.conf.generic\_ubuntu could be replaced with any other grid\_server\_domain.conf.[profile] file
    - 3.2.2 grid\_server\_domain.conf file argument could be ignored

### Install build machine in domain

**It is recommended to install machine, only after coordinator is installed in network and is accessible from current machine**

We need to use Terminal application for this process;

- 4 Open terminal
- 5 write following command to download package from public git repository
  - 5.1 “sudo apt-get install git”
  - 5.2 “git clone [https://github.com/dimakuzminov/incredibuild\\_deployment](https://github.com/dimakuzminov/incredibuild_deployment)”
- 6 install generic package
  - 6.1 “cd incredibuild\_deployment”
  - 6.2 “./prepare\_incredibuild\_machine.sh coordinator\_machine\_DNS\_name”
    - 6.2.1 must specify coordinator\_machine\_DNS\_name