“Xoreax”
Incredibuild For Linux
Release notes

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Reference		
Document Name	Version	Description
Extending_IncrediBuild_Work_Planning		Tasks description

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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
- 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_helper_machine.sh” - script that install all relevant packages on helper machines. For more information please read “Linux_Incredibuild_deployment_Instructions_v1.0.doc”
  - “prepare_initiator_machine.sh” - script that install all relevant packages on helper machines. For more information please read “Linux_Incredibuild_deployment_Instructions_v1.0.doc”
- How to Install [APPENDIX A]

Scope

The following items were planned for this release

TAKS ID	TASK DESCRIPTION	Status
ACT00024	After Initiator machine package installation, Incredibuild server should run automatically on boot	DONE
ACT00025	XgConsole should notify if GridServer is not running and ask to start the daemon	DONE
ACT00027	XgConsole should notify if there is no profile.xml in current folder and use default one. Location /etc/default/incredibuild_profile.xml	DONE
ACT00029	XgConsole should print help to stdout with version of GridServer if it is running	DONE
ACT00038	tool that discover all process that could be intercepted during build and print incredibuild classification (not including filters option)	DONE
ACT00039	tool that can make profile for all intercepted process and print tasks sorted by execution time	DONE
ACT00040	Optimize scheduler algorithm	DONE
ACT00045	analyze ACT00040 and ACT00039 result On Amazon server the random scheduler acts better than by performance time. The reason is that there is only one CPU on machine and any algorithm that minimize Local Machine time acts better. On Xoreax farm, the performance by time algorithm is much faster ~%15. Both algorithms acts badly on MySQL, checking with several tools, the reason is multi-core linkage	DONE
ACT00046	Add to GridServer grouping and localslot smart management, based on profile.xml rule	DONE
ACT00049	Benchmark new scheduler with bug stability corrections (found several issues related to ssh and some internal data synchronization)	DONE
ACT00050	Add progress bar to deployment script	DONE

Known issues

- New package may not run within incredibuild system due to wrong profile.xml setup
  - Currently need to ensure that AllowIntercept and AllowRemote/AllowLocal are done correctly
  - If process that is running process that should be run on GridServer is not listed it would be ignored
- Possible deadlock in logic
  - use-case (linux kernel):
    - gcc is “AllowIntercept”
    - as is “Allowremote”
    - cc1 is “AllowRemote”
    - both cc1 and as are launched from gcc same time
    - as is waiting cc1 results
    - as is in “Slot” execution
    - cc1 is in ready process queue (not launched yet)
    - No available slots
    - In this case there is a deadlock
  - currently we don't intercept “as” process
- Due to previous item, there is a problem of uncontrollable execution of local process that are not presented by our system

Comparison table

Xoreax farm:

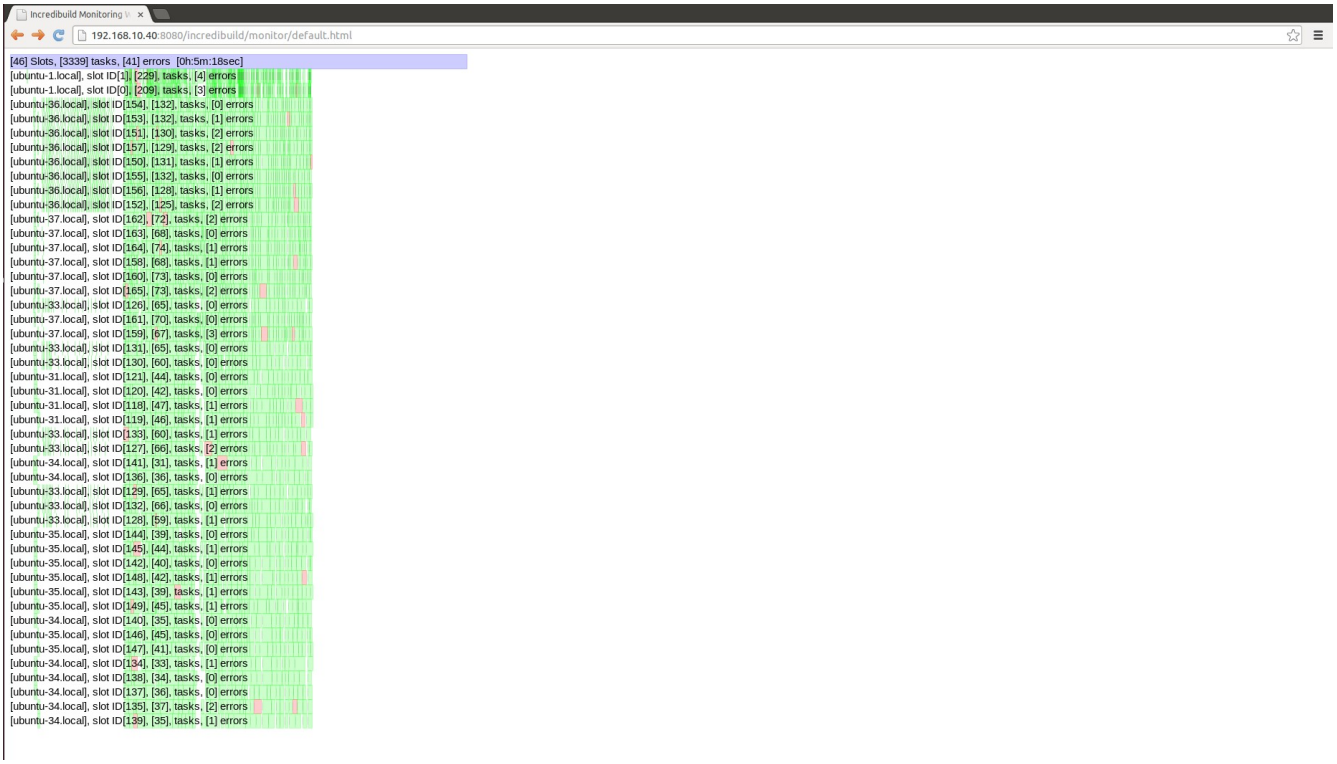
- 8 machines
- 4x8 cores
- 1x2 cores (local machine)
- 3x4 cores

launcher	MySQL		Samba		Linux	
Incredibuild	real user sys	2m55.158s 1m48.411s 0m34.602s	real user sys	5m18.896s 5m12.960s 1m53.891s	real user sys	1m55.236s 0m37.478s 0m24.758s
distcc	real user sys	3m36.087s 2m13.396s 0m45.271s	real user sys	6m53.630s 8m38.368s 3m14.312s	real user sys	2m19.453s 2m7.336s 0m31.074s
Local machine	real user sys	15m58.856s 28m48.472s 1m38.446s	real user sys	8m6.840s 12m10.114s 2m48.623s	real user sys	5m35.349s 9m29.756s 0m53.447s

*** Incredibuild running with full log, reduce debugging information give additional %10 optimization**

Screen shots from builds

Samba



MySql

Linux Kernel

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:
“./prepare_[machine_type]_machine.sh grid_server_domain.conf.generic_ubuntu”
         1.2.1.1 machine_type could be – “initiator” or “helper”
         1.2.1.2 grid_server_domain.conf.generic_ubuntu could be replaced with any other grid_server_domain.conf.[profile] file

First time installation

Install initiator 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”
3 install generic package
   3.1 “cd incredibuild_deployment”
   3.2 “./prepare_initiator_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

Install build machine in domain

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”
6 install generic package