Global Build Stats Plugin

Plugin Information
View global-build-stats on the plugin site for more information.

ⓘ Older versions of this plugin may not be safe to use. Please review the following warnings before using an older version:

- CSRF and XSS vulnerabilities

Global build stats plugin will allow to gather and display global build result statistics.
It is a useful tool allowing to display global jenkins/hudson build trend over time.

Requirements

Since v1.1, Global build stats plugin requires Jenkins 1.398 or higher.

Before v1.0, Global build stats plugin requires Jenkins/Hudson 1.339 or higher.

Installation

To install Global build stats Plugin, Go to the "plugin management" section in the administration Panel.
Latest released version will be available. Install it from there (you should need to restart Jenkins/Hudson after that).

To verify that the plugin is well installed, go to the Administration panel : you should see an icon with mister Jenkins/Hudson and a graph on it :

 or

Then you can click it and access the global build stats config panel.

Usage

The global build stats main screen is made of different sections :

- On the left side : Action links
- On the center : Charts displaying global build statistics & action buttons (update, move & delete)
- On the bottom : Data initialization

Action links

4 links are availables :

- Back to dashboard : Navigation link allowing to go back to Jenkins/Hudson root URL
- Create new chart : Display a popup form to create a new Chart. See the Create / Update a chart section.
- Manage retention strategies. See the Manage retention strategies section.
- Data Initialization : Useful to initialize your global build stats data, especially just after Global build stats first installation. See the Data Initialization Section.

Data Initialization

If you click on this button, all of your existing persisted build results will be gathered.
This is particularly useful to initialize statistics in a first step.
Note that data initialization gathering is only based on "recordable" data. If you frequently purged your job results, data will no longer be available for gathering. Nevertheless, once data has been initialized in global-build-stats, it will be made available even if data is purged (result data is cloned in the global-build-stats.xml file).
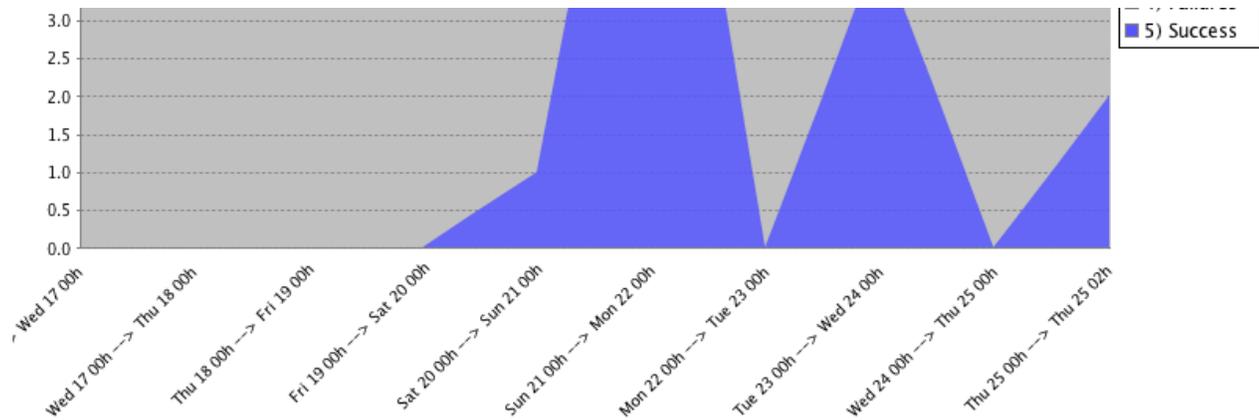Starting from 0.1 (and greater ones), you can perform several data initializations : existing global-build-stats.xml will be merged against eventually new gathered data.

Take into account the following only if you are using a 0.1-alphaX version of global-build-stats plugin (for greater versions, data are merged and thus, never lost) :
Beware : this should be done only once because :

- Statistics are automatically updated after each build
- "not recoverable" statistics (for example, if you check the "delete old builds" checkbox on job configuration) will be lost if you click this button

Manage retention strategies

Build Results retention strategies

- ☑ Automatically discard results older than [365] days
- ☐ Do not keep build results when they are discarded
- ☐ Keep existing job results only

[Update retention strategies]

Data Initialization

Click button below to initialize build statistics
Job results read will be merged with already recorded job results.

[Initialize stats]

This section is for customizing job build result retention for global-build-stats plugin.
Job build result is the largest data stored in global build stats configuration files (in global-build-stats.xml or global-build-stats/jobResults/*). That is to say, if you're expecting some disk consumption issue, a workaround would be to be stricter on the job build result retention strategies.

> ⚠️ **Warning**
>
> Using retention strategies will delete **permanently** job build results. Thus, you won't be able to retrieve them.
> Take this functionality with care.

Prior to version 1.2, 3 retention strategies are available :

- Automatically discard results older than X days : as mentioned, by checking this strategy, a daily purge process will be executed to clean oldy job build results stored
- Keep existing job results only : by checking this strategy, a purge will be triggered **only once** (when submitting the form) that will ensure every global-build-stats stored build results correspond to an **existing** (ie not purged) build result.
- Do not keep build results when they are discarded : by checking this strategy, every time someone will delete a build or a job, corresponding job results stored by global build stats will be deleted. This strategy is different than "keep existing job result only" strategy since it won't affect job results stored in the past. Moreover, it is a strategy that will be triggered regularly (instead of only once for "keep existing job results only").

Build stats Chart Creation / Update

In this popup form, you can create a new Build Stats Chart.

Here are some details on the different parameters :

- Chart title : Title displayed on top of the Chart
- Chart size : Width & Height (in pixels) of the created chart
- Chart Scale : Unit of chart X axis. Either Year, Month, Week, Day or Hour. Difference between "XXX" and "XXX From now" concerns the X axis ranges. If current datetime is 2010/10/27 3:00 PM and selected chart scale is "daily", last date ranges on X axis will be [2010/10/26 00:00 AM -> 2010/10/27 00:00 AM] and [2010/10/27 00:00 AM -> 2010/10/27 3:00 PM]. If "daily from now" were selected, we would have [2010/10/25 3:00 PM -> 2010/10/26 3:00 PM] and [2010/10/26 3:00 PM -> 2010/10/27 3:00 PM]
- Chart Length : Number of steps (ticks) on X axis. Unit used depends on selected chart scale.
- Job filtering : Either All jobs (no filtering) or a job name regex (syntax is the same than the one used by Pattern class
- Node filtering : Either All nodes (no filtering), master node, or a node name regex (syntax is the same than the one used by Pattern class
- Launcher filtering : Filtering on user who launched the build. System user is used when performing triggered non manual builds, so if you want to display "automatic" (=non manual) builds, check the "System only" radio button. The user name regex syntax is the same than the one used by Pattern class
- Statuses filtering : Success, Failures, Unstables, Aborted or Not Build builds. Not that "not build" statuses are unchecked by default : this status is special since sometimes, on a successful maven multi module project, module builds are marked as "not build" (unknown reason)
- Elements displayed on chart. I call these elements "dimensions" :
  - Build statuses : will show build count (or percentage) for each selected build statuses
  - Total build time : will display total cumulated build time on each time ranges. This functionality could be useful to determine the cost of an externalization in a "Jenkins/Hudson as a Service" platform like cloudbees
  - Average build time : will display average cumulated build time on each time ranges

All fields are mandatory. Chart's width, height & length should be integers.
If at least 1 server-side validation fails, form will not be "submittable".

Before submitting the form, you can have a look at the future chart which will be displayed by clicking the "overview" button.
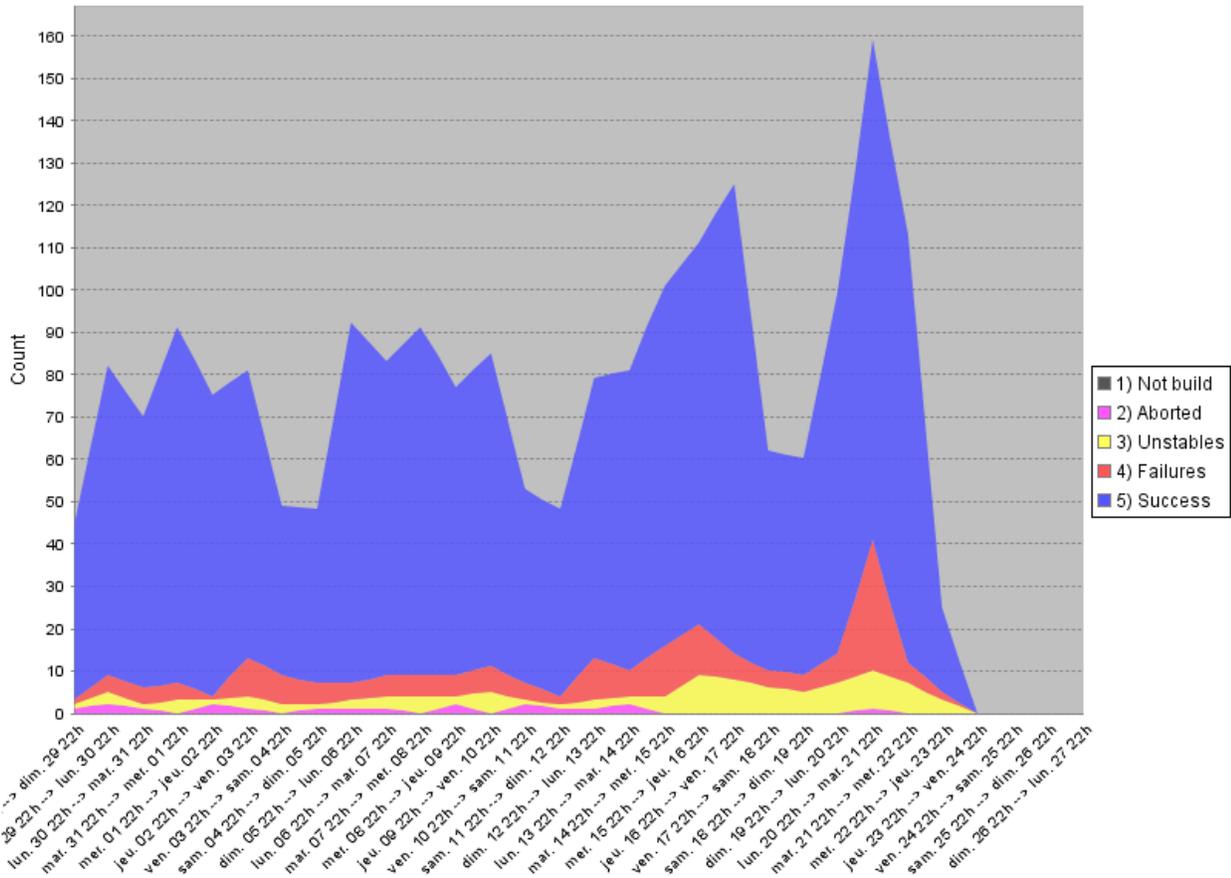
Build stats Chart display

This section displays every persisted Chart Configurations.
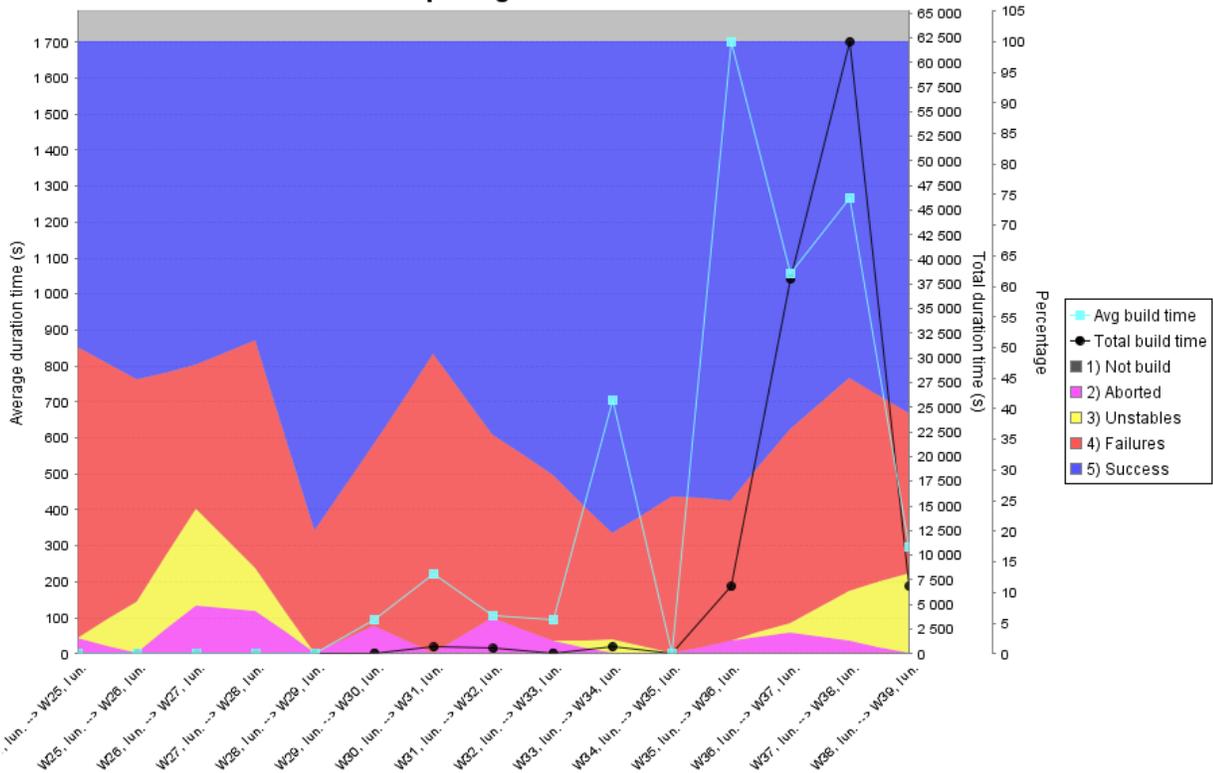You can, too, edit, delete or move up/down these graphs.
Graphs are created using REST-like URL so that you can export this URLs into your favourite Portal or CMS (or Jenkins/Hudson dashboard).

2 chart examples can be seen below :

30 last days

Reporting builds since 15 last weeks

Last chart displays the 3 available dimensions altogether (result counts, total build time & average build time).

By clicking a results counts region, you will be redirected on the build search engine screen.
See the Build Search engine section for further details.

Near every build chart, you'll have at least two button : edit & delete buttons.
Depending of the placement of your chart, you'll be able to "move up/down" the chart.

Notes about user & node filtering

⚠️ **Warning**

Don't expect to have relevant results just after an upgrade between :

- pre and post 0.4 versions for node filtering
- pre and post 1.0 versions for user filtering

When migrating, only not purged data (concerning node & user having launched the build) will be recorded.
That is, "old" data (such as builds executed a few weeks ago) won't be available.

Starting from your plugin upgrade, full data will obviously be recorded.

Notes about durations displayed when migrating to v0.5

⚠️ **Warning**

For the same reasons as above, don't expect to have relevant results just after an upgrade between pre and post 0.5 versions : you'll have to wait a few times in order to have sufficient data amount to calculate total & average build duration.

Build search engine

The build search engine is accessible by clicking a build result region on a chart.
It will provide search criteria to query the global-build-stats build results on different ways : result status, job name, node name and date ranges.

Global Build Search

Search criteria

Start date : 7/26/2010

End date : 8/2/2010

Filters :
- Job filtering : ⚪ ALL Jobs 🔘 Job name regex : .*reporting.*
- Node filtering : 🔘 ALL Nodes ⚪ Node name regex :
- Statuses taken into account : ☑ Success ☐ Failures ☐ Unstables ☐ Aborted ☐ Not Build

[Search]

Search results

Status	Job name	#	Date	Duration	Node name
Success		#766	Aug 2, 2010 10:01:11 PM	Data not available	Data not available
Success		#18	Aug 2, 2010 7:51:21 PM	Data not available	Data not available
Success		#17	Aug 2, 2010 7:28:06 PM	Data not available	Data not available
Success		#169	Aug 2, 2010 9:20:31 AM	Data not available	Data not available
Success		#26	Aug 2, 2010 12:01:22 AM	3 min 6 sec	master
Success		#765	Aug 1, 2010 10:01:11 PM	Data not available	Data not available
Success		#25	Aug 1, 2010 12:01:19 AM	3 min 38 sec	master
Success		#764	Jul 31, 2010 10:01:11 PM	Data not available	Data not available
Success		#97	Jul 31, 2010 12:04:22 AM	Data not available	Data not available
Success		#24	Jul 31, 2010 12:01:23 AM	Data not available	Data not available
Success		#763	Jul 30, 2010 10:01:11 PM	Data not available	Data not available
Success		#90	Jul 30, 2010 10:13:41 AM	Data not available	Data not available

Result sort order can be changed by clicking the table headers.
If build result has not been purged, a clickable link will be displayed to navigate through the console output & the detailed build result.

Bonus track : Global-build-stats JSON API

A detailed section has been created to describe how to retrieve global-build-stats data from Jenkins/Hudson standard JSON & REST API.

Product backlog

Known issues

type	key	summary

> ⚠ Can't show details. Ask your admin to whitelist this Jira URL.
>
> View these issues in Jira

Future version(s)

Identified issues :
JENKINS-7241: Special characters in chart title ("é" for example) are not well filling textfields in edit form
Fix legend item sorting (for now, sort depends on alphabetical order... that's why statuses are prefixed with "1), 2).."
Fix date displayed on build search view, due to yui calendars
Rename persisted node names in global-build-stats.xml after node is renamed

Features :
Test global build stat behaviour under IE & Safari
Cache chart renderings (provide a checkbox in the buildStatConfiguration, allowing to enable chart caching with a given refresh rate based on selected time scale). Chart rendering will cache chart in-memory (thus it will consume a little bit more memory) but will reduce the CPU used when displaying the chart. It feets particularly well if you decide to "share" your chart with lots of users that will want to display it (on the jenkins/hudson welcome screen for example)
In build search results, allow to limit number of results (radio button allowing "unlimited" and "limited to XXX results")
Allow to select build start or build end for stats gathering (build end could be calculated with build start + duration). For now, we use only build start
(if possible) Allow to click on a date to display date builds (no matter the build result)
If possible, provide tooltips on chart, displaying the 10 first job names matching with the current hovered region

Tasks :

Releases

1.5 (October 23, 2017)

- Fix security vulnerability

1.3 (April, 5th, 2012)

Improvements

- Provided action link to the retention strategy section
- JENKINS-9088 : Fixed stack ordering of build statuses in a more natural manner : not build > failures > aborted > unstables > success
- Hierarchical project support

1.2 (August, 25th, 2011)

Improvements

- Related to JENKINS-10607 : **Largely improved data serialization** by :
    - Saving things in a separate thread (jobs are not hanging anymore after completing, due to data saving)
    - Job build results are now sharded into monthly files so that save will be performed in a constant time
- Allowing to define **build result retention strategies**, which will purge stored job build results and lower job build result filesize on filesystem. See the Manage retention strategies section section for further informations.

Bugs

- JENKINS-10563 Fixed NoSuchElementException when no job result was gathered
- JENKINS-10607 Jenkins jobs hangs when finished

1.1 (August, 3rd, 2011)

Tasks

- Changed Global build stats logo to be jenkins compliant

1.0 (November, 14th, 2010)

Fixed bugs

- Internationalized week & day labels on charts

Improvements

- Recorded user who launched the build, displaying it on build search engine view
- Provided filter on user who launched the build (will allow to filter on build launched by SYSTEM only to skip manually launched builds)
- Provided radio button allowing to filter on master node only
- Check if build result has been performed at least once... if not, automatically perform a data recording
- Externalized javascript functions in JS cacheable files
- Simplified data migration API

Tasks

- Provide wiki entry about global-build-stats json API
- Update wiki's screenshots / user guide with new features of 0.3 & 0.4
- Moved global build stats svn tags on https://svn.dev.java.net/svn/hudson/tags/global-build-stats/

0.5 (September, 23th, 2010)

Improvements

- **Display total & average builds duration** on charts
- **Node name filtering**

0.4.1 (September, 16th, 2010)

Fixed bugs

- JENKINS-7476: Jelly exception on plugin manager screen ("installed" tab)

0.4 (September, 15th, 2010)

Fixed bugs

- JENKINS-7240: Don't provide link to console in build search results if build informations have been deleted

Improvements

- **Recording additionnal data** : job build duration & job build node name (only used in the build search screen for now !)
- **Allow to change y-axis unit to percent**
- **Allow to change chart id** (for security concerns)
- **Internationalized plugin**
- Provide API informations regarding buildStatConfig (/plugin/global-build-stats/api/json?depth=2&buildStatConfigId=*XXX*)
- Display build duration on the build search screen

Tasks

- Create a JIRA component for global build stats : Issues can be seen here (http://issues.jenkins-ci.org/secure/IssueNavigator.jspa?
mode=hide&reset=true&jqlQuery=project+%3D+HUDSON+AND+status+in+(Open,+%22In+Progress%22,+Reopened)+AND+component+%
3D+'global-build-stats')

0.3.1 (August, 18th, 2010)

Fixed bugs

- In some versions of chrome, "delete" JS method seems to no be allowed (and was, then, resulting in JS syntax errors).
Global build stats has been tested only with firefox & chrome. Tests will be made under safari & IE soon.

0.3 (August, 17th, 2010)

Fixed bugs

- jobFilter property was badly persisted if radio button was let to "ALL" by default (+ provided data migration for previous versions)
- Fixed encoding of special characters ("é" for example) in chart title

Improvements

- Provided data migration tool API to migrate from different versions of the persisted plugin data (it will be easier to migrate from one version to another)
- Optimized global-build-stats.xml file size (1.5Mo for 8600 build results) => Reduced by half thanks to xstream aliases
- **UI Greatly improved by doing AJAX calls** :
    - Move up/down in chart listing are made with AJAX (no more refresh !)
    - Create/Edit/Delete in chart listing are made with AJAX (no more refresh !)
- Allow an overview of a chart in the new Create/Edit popup form
- **All charts are given a unique identifier** + calling the /plugin/global-build-stats/showChart?buildStatId= url (instead of /plugin/global-build-stats /showChart?widht=&height=etc..) will have the security checks de-activated
  => You can now share your charts without being redirected on a 403 error
  Url /plugin/global-build-stats/showChart remains accessible (and is used for chart overview), but there, security checks are performed (you must be an administrator to reach the chart)
- Provided a link, in build search results, to direct console output for a build number
- Switched "unstables" and "aborted" colors (unstables:pink=>yellow, aborted:yellow=>pink) to fit with standard jenkins/hudson display + changed display order + changed chart background color (yellow area will be more visible)

Tasks

- Refactored GlobalBuildStatPlugin into several new layers : business, validation (lowers complexity of GlobalBuildStatPlugin class)

0.2 (July, 4th, 2010)

Fixed bugs

- Bug: Hour reset lead to 00h instead of 12h

Improvements

- **Global build search engine** allowing to select several search criteria concerning build results and display search results
- **Chart can be clicked** : it will list selected builds category on clicked year/month/week/day/hour
- Change date displayed on chart depending on selected scale (time axis' height is largely lowered !)

0.1 (June, 13th, 2010)

Fixed bugs

- Fixed rootUrl problem in checkUrls AJAX validation
- Fixed vertical axis size in charts
- Synchronized blocks whenever data are recorded **in order to prevent plugin from ConcurrentModificationException** (plugin is now thread safe !)
  Note: If you have $HUDSON_HOME/*.tmp files looking like your global-build-stats.xml file, you can delete them !
- "\" are now allowed in your job name regexes

Improvements

- **Jenkins/Hudson version 1.339 is now required**
- **Secured chart listing screen : Administer rights needed**
- Added HOURLY_FROM_NOW, DAILY_FROM_NOW, WEEKLY_FROM_NOW, MONTHLY_FROM_NOW and YEARLY_FROM_NOW chart scales.
  Beware : pre-1.0 YEARLY, MONTHLY and WEEKLY scales were acting the same as post-1.0 YEARLY_FROM_NOW, MONTHLY_FROM_NOW and WEEKLY_FROM_NOW.
  If you want to keep your chart as if it were in pre-1.0, you should update these scales !
- Improved color used
- Provided backward compatibility of BuildStatConfiguration (with 1.0-alpha1 release)
- Data initialization is now made via AJAX submission
- Data initialization now merges read data with existing data : you won't lose data anymore !
- "not build" status is unchecked by default
- Added icons instead of buttons for chart actions (delete/edit/move up/move down)

0.1-alpha4 (March, 13th, 2010)

AJAX Form validation enabled

0.1-alpha3 (March, 1st, 2010)

Fixed bug : If checkbox are unchecked, build stat config is not added
Some precision : if chart doesn't appear after form submission, check your fields : all are mandatory (except for checkboxes which can be unchecked),
width & heigth & length should be integers

0.1-alpha2 (March, 1st, 2010)

Minimum Jenkins/Hudson version downgraded from 1.339 to 1.321
Chart persistence implemented.
Create/Update/Delete multiple chart build configurations.
Added job name filtering.
Changed displayed date pattern on chart.
Server-side form validation is done .... but nothing is displayed on the user side (due of lack on knowledge on form validation ... see 0.1 roadmap to see
how this will be handled in the future)

0.1-alpha1 (February, 21th, 2010)

First release.
Contained only a unique chart and the possibility to initialize build stats from existing build results.
Chart is contructed in a RESTly way that is to say you can provide GEt parameters to the chart.
No Chart persistence implemented.

Greetings to our sponsors

I'm a proud user of .
Feel free to download and test this IDE, it's worth a try !