

SEGP2 Plugin Group Milestone 7 Report

Total Hours Spend: approx. 10+91 hours

Executive Summary

Milestone 7, the final milestone for this project, began by reviewing what were the leftover work and issues needed to be addressed. These leftovers are mainly bug fixes and code cleanups. Besides that, the group looked up what sort of documents should be produced and delivered to the customer, Rising Sun Pictures (RSP). Finally, the members had concentrated their resources on integrating the system as a whole. The following were the tasks that had been set by the group at the beginning of the sprint:

- **Week 1:** Cleanup, patch-up and documentation the daemon and GUI plugins design, development and implementation.
- **Week 2:** Continue with cleanup and documentation, and open up resources to the entire group for integration.
- **Week 3:** Finalize all codes and documentations, and hand the project back to RSP.

This is the only sprint that a strict policy of no new designs, research and codings was set, which is mainly a code-freeze throughout the group. This is to ease integration activities, and free up resources to address GIT merging issues that were discovered in the previous sprint. Also, this sprint do not have a formal Gantt as it was agreed to have the members to be self-initiative in assisting integration with the other sub-group. However, there were several deliverables that were planned:

- Metadata (GUI & Daemon plugins) *Mohammad, Keane and Xiaodong*
- Daemon status (Daemon plugin) *Filimoni and Mohammad*
- File Monitor (Daemon plugin) *Ken, Ida and Mohammad*

The deliverables were presented as demonstrations during the final presentation. All three items are related to each other, which are to showcase the improved plugins implementation both in the back-end (the daemon) and the front-end (the GUI). Besides the stated deliverables, new scripts (`earth_plugins`, `list_plugins` and `uninstall_plugin`) were also showcased during the presentation as part of plugins management.

Ken had produced the daemon plugins documentation in this sprint, as part of the documentation tasks assigned. Also, he had helped in producing the GUI plugins documentation as well. Besides documentations, he also assisted in integrating all the works done in previous milestones, and plugins. He helped by planning and strategizing how the mergers should be done with the other core members of the integration as well. He spend about 10 hours this sprint to complete this project.

Filimoni continued with enhancing the daemon feature by redirecting all status information to the front-end. On top of that, he also assisted in the documentation of plugins as a proof-reader. Another significant contribution from him was the assistance on integration as well. He, together with Mohammad and Jon, had managed to have their respective repositories integrated into the final branch. He had spend about 91 hours in this sprint.

Xiaodong and Keane produced the GUI plugins documentation, which presented their thoughts in designing the framework from the ground up. They had spend ?? hours (Xiaodong ?? hours and Keane ?? hours) in having the document written.

Ida pursued with Mohammad to have the `uninstall_plugins` script corrected to support dependent extension plugins. This error was discovered by Ken in the previous sprint while testing. He suggested to Ida that this can be fixed by making the script intelligent enough to

block the removal activity if the plugin being removed has dependent child plugins extended from it. She spend ?? hours in this sprint.

Mohammad had spend ?? hours in this sprint doing ...

Individual Reports

Attached are the individual reports of each member of the group.

Ken's Milestone 7 Report

Executive Summary

I helped in strategizing how integration should be done, together with Fil, Mohammad and Jon. I suggested to use branches instead of forks to have the integration done. In the end a new fork was created and in that fork, there were several branches created as a buffer for each integration stages. The stages are partial integration between groups. The first two groups were first integrated, then followed by plugins. I have also helped in documenting the plugins design, development and implementation. I mainly re-wrote the document that was written by the GUI plugins group, and compiled all the notes on daemon plugins into a structured document. I was also put in charge of creating the final presentation slides.

Tasks and Activities Assigned

- Co-writing plugins documentations.
 - Daemon Plugins
 - * Description: There were already several prepared notes about daemon plugins that were written by myself. In this sprint, the focus was on getting the plugins integrated and properly documented. The task is to compile the notes into developers comprehensible documents for future reference.
 - * Affected files: `plugin_group/daemon_plugins/*`, `plugin_group/GUI_plugins Doc/*`
 - * Git commits: (pamalite/segp2) `efb25d3bb17772440d08e98f53ede927bc1c16cf`
 (pamalite/segp2) `eee6f84c9a9160d1d17e452b9bc91fb3ecb15676`
 (pamalite/segp2) `55801f180e90aa91ddf88f79d2a7762c40fa7d80`
 - * Estimated time taken (planned): 2 hours
 - * Estimated time taken (actual): 2 hours
- Strategizing and testing integrated branches.
 - Description: Started strategizing with Jon, Fil and Mohammad on how to mitigate merge errors during integration with GIT. Also, I pointed out that we needed a strategy on not relying too much on GIT's merge algorithms as they tend not to merge files properly. Thus, it was suggested to merge files in stages, and each stage is a branch from the master trunk. However, I did not do the merge. I tested the merged stages to help check whether the mergers were properly made. I fixed some errors and committed the corrections back to the respective branches. Some minor merge errors were related to Ticket 66 and missed codes for other tickets which broke the system upon a more in-depth testing was conducted. However, the Unit Test was given up as it was realized that there is not enough time to re-write the extension points codes to cope with Rails' unit test cases.
 - Git commits: (Jonv/earth/group1.2) `619b85e55cabe9c959ea128d8e8536d5fc684d96`
 (Jonv/earth/group1.2.earthd_plugins) `ca3c9fda5539cb10881166195df76e99806bcbfb`
 (Jonv/earth/group1.2.earthd_gui_plugins) `ca3c9fda5539cb10881166195df76e99806bcbfb`
 (pamalite/earth/group1.2) `572f62ecb1c8b806d2745ea69a3698af6f1f84c7`
 (pamalite/earth/group1.2.earthd_plugins) `901bda47ff97d8f4d43a313971653b66b1f15f1a`
 (pamalite/earth/group1.2.earthd_plugins) `1ea191e6ba50bb2458987dd22bed2eda95d935cf`
 (pamalite/earth/group1.2.earthd_plugins) `f643d7727a9f563ab3c1a04f2039f109f2054788`
 (pamalite/earth/group1.2.earthd_plugins) `fe2aea30ec40e46b4d88ca9960a138f864f81bce`
 (pamalite/earth/group1.2.earthd_gui_plugins) `d40768224acf690b7fc0395730ffffb1b78c2bfff`
 (pamalite/earth/group1.2.earthd_gui_plugins) `286490b58f53edb0601672efd33bb3c3757b5d04`

- ```
(pamalite/earth/group1.2.earthd_gui_plugins) 901bda47ff97d8f4d43a313971653b66b1f15f1a
(pamalite/earth/group1.2.earthd_gui_plugins) 1ea191e6ba50bb2458987dd22bed2eda95d935cf
(pamalite/earth/group1.2.earthd_gui_plugins) f643d7727a9f563ab3c1a04f2039f109f2054788
(pamalite/earth/group1.2.earthd_gui_plugins) fe2aea30ec40e46b4d88ca9960a138f864f81bce
```
- Estimated time taken (planned): 4 hours
  - Estimated time taken (actual): 4 hours

## Resource Contributions

For this milestone, I have estimated that I had spend about 10 hours (including 4 hours meeting time) over the spread of 3 weeks. I have budgeted 45 hours (15 hours per week) for this semester. The other 15 hours were spend on my research project.

Looking at the hours I felt that I have had a productive sprint, though I am only using a fraction of my budgeted hours. The rest of the hours were used on the research project thesis. However, I observed that my skills on using GIT matured the most in this sprint, due to the fact that I was requested to create a backup repository incase that Jon's repository was mistakenly broken. I have also spend some time to help Jon understand some GIT commands to ease integration and synchronizing with the backup repository.

## Rooms for Improvement

- Low levels of patience was observed during this sprint. This was because one of the members were not showing interest in helping out with the closing of the project. I lost my patience with the member and had ignored his complaints and ranting completely as I thought this member can be hindrance towards the success of this project, and I focused myself on members who are interested in having a proper project closure. I will try to be more approachable and keep my cool in future projects by trying to have a constructive confrontation with such members.

## Filimoni's Milestone 7 Report

### Executive Summary

For this milestone, integration of all the features and fixes that were developed during the previous development sprints was the highest priority. Hence, changes made in individual and subgroup repositories were pushed to the main group repository. The relevant documentation also had to be reviewed and updated on the project document repository. Furthermore, some pending modifications such as the display of daemon status information on the web-based graphical user interface had to be completed before being included in the main group repository. There were also some significant improvements in the milestone planning processing, in particular the allocation of resources to tasks.

### Tasks and Activities Assigned

1. Modify configuration page to update daemon status information in real-time
  - Description: This task involved capturing the daemon status information and displaying it on the web-based GUI in real-time.
  - Affected Files:
    - app/controllers/servers\_controller.rb
    - app/models/earth/server.rb
    - script/earthd
  - Git commits: (ssurfer/earth.git) dc1a5ef6cbb3898bf66702304d70e3a5d283993e
  - Estimated time taken (planned): 30 hours
  - Estimated time taken (actual): 30 hours
2. Integrate tickets done by Subgroup1 in previous development sprints (milestones)
  - Description: This task involved merging the fixes for tickets that were attempted during the early development sprints for subsequent integration with the main group repository.
  - Affected Files:
    - app/controllers/browser\_controller.rb
    - app/controllers/graph\_controller.rb
    - app/controllers/servers\_controller.rb
    - app/helpers/application\_helper.rb
    - app/helpers/graph\_helper.rb
    - app/models/earth/directory.rb
    - app/models/earth/server.rb
    - app/models/size.rb
    - app/views/browser/flat.html.haml
    - app/views/browser/show.html.haml
    - config/earth-webapp.yml
    - test/functional/browser\_controller\_test.rb
  - Git commits: (segp2sg1/earth.git) a0854e2c929e958bfb422b2ecff46883270ebd86
  - Estimated time taken (planned): 30 hours
  - Estimated time taken (actual): 30 hours
3. Assist with integration of SEGP2 Repository for Milestone 7 (Final)

- Description: This task involved integrating the repository of the various project sub-groups to create the final group repository.
- Affected Files:
  - app/controllers/application.rb
  - app/helpers/application\_helper.rb
  - app/views/browser/\_breadcrumb\_and\_filter.html.haml
  - app/views/layouts/application.haml
  - vendor/plugins/plugin\_bios/MIT-LICENSE
  - vendor/plugins/plugin\_bios/README
  - vendor/plugins/plugin\_bios/Rakefile
  - vendor/plugins/plugin\_bios/generators/plugin\_bus/USAGE
  - vendor/plugins/plugin\_bios/generators/plugin\_bus/plugin\_bus\_generator.rb
  - vendor/plugins/plugin\_bios/init.rb
  - vendor/plugins/plugin\_bios/install.rb
  - vendor/plugins/plugin\_bios/lib/plugin\_bios.rb
  - vendor/plugins/plugin\_bios/tasks/plugin\_bus\_tasks.rake
  - vendor/plugins/plugin\_bios/test/plugin\_bus\_test.rb
  - vendor/plugins/plugin\_bios/uninstall.rb
- Git commits: (Jonv/earth.git) e55a0dc1bda43819357e849373f72f4074089481 (branch: group\_1.2\_earthd\_gui\_plugins)
- Estimated time taken (planned): 20 hours
- Estimated time taken (actual): 16 hours

#### 4. Review Earth Daemon and Earth GUI plugins documentation

- Description: This task involved reviewing the documentation of the various aspect of the Earth application, particularly the newly added plugin framework, to ensure better comprehension and understanding.
- Affected Files:
  - Subgroups/plugin\_group/daemon\_plugins/daemon\_plugins.pdf
  - Subgroups/plugin\_group/GUI plugin Doc/gui\_plugins.pdf
- Git commits: (pamalite/segp2.git)
- Estimated time taken (planned): 6 hours
- Estimated time taken (actual): 12 hours

## Resource Contributions

Apart from the under-resourced Task 4, the planned allocation of resources (time) was quite accurate for the designated tasks (Task 1 - Task 3) during this development sprint (M7). This can be explained by the improvements made during the previous development sprints. As a developer works on a project for a number of development sprints or cycles, planning efforts is expected to improve. As a result, the planned development time of 86 hours for this milestone was quite close to the actual development time of 88 hours.

It should also be noted that for Task 1, the initial design of updating and fetching the daemon status information in real-time through the database, was quite inefficient and lacks the necessary responsiveness for such feature to be of any practical use. Further investigation showed that the implementation of the daemon status update feature could be improved significantly by simply

bypassing the database processing. This would involve having the necessary model method spawn a sub-process to invoke status command on the daemon and return the daemon status information to the parent process, which subsequently passes it on to the relevant view page for display on the web-based GUI (browser).

For Task 4, the documentation review process took more time than budgeted due to the inconsistency of the various part of the document. It had been wrongly assumed that the different parts of the documents (drafted by different developers) will adopt a similar writing style and cohesiveness. This was not the case and further efforts had to be expended to improve documentation for the plugin systems. While the submitted final documents is not quite perfect, it is certainly more understandable than the initial draft.

## **Room for Improvement**

As in previous milestones, some improvements could have been made during the course of this (M7) development sprint. In addition to the swift resolve of the problems with Tasks 1 and 4 mentioned above, the integration of ticket fixes should be made as and when they become available. This involves pushing all the changes up to the main group repository perhaps at the end of each development sprint. It should not be left until the final development sprint because it ties up a number of significant resources that could have been better utilised on other aspects of the project.