

SEGP2 Plugin Group Milestone 5 Report

Total Hours Spend: approx. ??? hours

Executive Summary

Milestone 5 began by forming an all Masters of Software Engineering students group to focus on developing a functional and usable plugin system for Earth.

The group started with the plan of decomposing the entire development process into three major tasks:

1. Decomposing the File Montior into API methods.
2. Retrofit `earthd` to load plugins from the database.
3. Streamlining the plugins deployment.

Due to time constraints, and the forming of the new group, the group agreed to only complete the first two tasks for this sprint.

At the end of the sprint, `earthd` was retrofitted with the new plugins loading mechanism. Also, the plugin architecture also sport an extension sub-architecture that allows plugins to have plugins as well. All these were integrated in a functional prototype that was demonstrated during the end of milestone presentation.

Besides `earthd`, a few of the members also took the opportunity to explore how the Models, Views Controllers and Helpers can be made pluggable. It was suggested that the entire front-end needs to be revamped to support a toolkit like API architecture. However, this suggestion was dismissed as it is too complicated and there is not enough resources to complete such a feat. The results of the investigations were mixed, and it was agreed that a path will be finalized in the next sprint which the group will work on.

The group achieved synergy by practicing pair, or rather peer, programming. Since Ken has less hours than the rest, the group had gave the administration role to him to run the group, while giving the development responsibilities were assumed by the rest. Besides administrations, Ken was also the main consult for doubts in the plugin system development, as he had been leading this development since Sprint 3.

Overall, the group was able to deliver a solid plugin system for the back-end, and options to be considered for the MVC front-end. Our goal for the next sprint is to finish up the unfinished matters from this sprint and have the daemon plugins system online before the final integration of the entire system.

Individual Reports

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

Ken's Milestone 5 Report

Executive Summary

I have been defaulted as the main contact of the newly formed Plugin Focus Group. Due to my hours being halved due to my commitment on delivering a research paper, I have been assigned to track and manage the group's progress. Besides that, I have initiated a plugin briefing with the group at the start of the group formation, and it was well accepted. The result of the briefing is the current working plugin mechanism, which was demonstrated during the Milestone 5 Meeting, that had exceeded my expectations on how far the new members can produce. On top of that, I had managed to fix a problem that was caused by an unknown bug in the PostgreSQL Ruby connector, and helped move the group forward. Overall, Sprint 5 have been very fruitful and Sprint 6 will be the polishing of what was leftover.

Tasks and Activities Assigned

- Overseeing the progress of the developments of the plugins mechanism development.
 - Sub-task 1: API library composition.
 - * Description: Standardize the APIs creation and how to integrate them into plugins.
 - * Idea/Solution: N/A
 - * Affected files: N/A
 - * Git commits: N/A
 - * Estimated time taken (planned): (throughout the sprint)
 - * Estimated time taken (actual): (throughout the sprint)
 - Sub-task 2: Earth daemon revamping.
 - * Description: Retrofitting earthd to support multiple plugins loading from database.
 - * Idea/Solution: The main problem of the daemon plugin was due to a translation error between PostgreSQL and Ruby, which caused the pre-signed signatures to corrupt when retrieved as Binary. The solution is to use Text as the storage data type, and pack the codes and signatures into Base64 encoded bundles to maintain consistency. The only thing left to do is to add the decoding process in the Plugin Manager.
 - * Affected files: `062_change_plugin_descriptor_code_signature_columns_to_text.rb` and `plugin_manager.rb`
 - * Git commits: (pamalite/earth) `ad4cbaed3a0ded49d44453ed674aaaaca6b86144`
 - * Estimated time taken (planned): 6 hours
 - * Estimated time taken (actual): 7 hours
- Updating the notes briefed during the plugins briefing.
 - Description: Besides having technical briefing about what has been done in previous sprints, on the subject of plugins, some form of a documented notes are needed for easy reference by the new developers. I have prepared some documentations previously, but I saw it is time to update them to reflect the new ideas.
 - Idea/Solution: N/A
 - Affected files: `plugin_developers_guide.pdf` and `Plugin_System_Notes_2.pdf`
 - Git commits: (pamalite/segp2) `20d0ef6cfc86618a57d08a27078ec8a692921c94`, (pamalite/segp2) `74b7f3b8c4773935b8038329f5b309417375be1f`
 - Estimated time taken (actual): 3 hours

Resource Contributions

For this milestone, I have estimated that I had spend about 22 hours (including 12 hours meeting time) over the spread of 3 weeks. I have only a 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 half of my budgeted hours. The rest of the hours were used for other academics commitments. However, I managed to get the new group in-sync with the latest plugins development plans and designs. And, the group managed to exceed the expectation by coming up with a plugin system that works beyond the planned version. Also, the system is readily to be deployed, and it only needs to be polished.

Rooms for Improvement

- Better communication with team members: It was observed that a member of the team had branched off to work on what he feels it is right without the consensus of the group. His action nearly cost the group to repeat history of having too many leads that cannot be followed. Such an action maybe good for the future, but it is bad for the group's reputation when there is no prototype to be shown at the end of the milestone. Besides, having a member who do not share the same vision as everyone else may lead the group into unwanted conflicts.
 - Plan: Level expectations between all group members and myself.