

Application for Google Summer of Code 2008: Sandip Dev

Synopsis: The aim of this project is to develop a module which can integrate Google Contacts API into Drupal. This would enable a site, created using Drupal, to retrieve a user's Gmail contacts so that she may invite other users from her contacts list and/or find people whom she knows and are using the same site. The module would expose an API through which other modules can retrieve Google contacts.

Project: The project is pretty straight forward. A module needs to be developed which uses Google Contacts API to access Google contacts information. I have read the tutorials on drupal.org on how to create modules for Drupal, and I can assure you that I have all the necessary knowledge for the task. The module will use AuthSub Proxy authentication to authenticate a user and retrieve contact details. Once authenticated, the user would be redirected to the proper page within the site.

Moreover, since its Google which takes care of authenticating the user, the problem of security is solved too. To further simplify matters and keep security to the maximum, the module will request a one-time token instead of a session token. One-time tokens can be used only once while session tokens can be used infinitely. However, session tokens need to be stored which can lead to malicious use of such a token. Hence I would prefer to use a one-time token. So every time the user wants to let the website access her Google contacts, she will have to authenticate herself with Google.

Alternatively, the user (and not the website) could be given the option of choosing a one-time token or a session token. This way the user is responsible for her actions.

Also all tokens requested will be secured, i.e. digitally signed with a time-stamp. The intention is to maintain the highest possible amount of security. I would need some help from my mentor in implementing digital signatures as I do not have much experience with this. AuthSub proxy can request secure tokens only if the website is registered with Google as described in <http://code.google.com/apis/accounts/docs/RegistrationForWebAppsAuto.html>

Also this module will expose methods by which other User Authentication and invitation modules (such as invite), developed for Drupal, can access Google contacts information. This is pretty simple too. The functions will be accessed using module_invoke function. All such interactions will be secure as well, because of reasons described earlier.

Obvious benefit: Will simplify creation of social networking sites using Drupal. Most social networking sites today have this feature.

Design goals:

- Must be secure. The module will handle sensitive information (a list of email addresses and names). So security is of paramount importance. Hence all tokens requested by this module will be secure, i.e digitally signed with time stamps.
- Must not have any bugs. I will make the module ready for deployment. To achieve this, the module must be developed well before the deadline and must undergo severe testing so that all bugs can be discovered and patched.
- It should expose an API through which other modules can access its functions.

Roadmap:

- Will notify the Drupal community about my project and get feedback from them, especially from developers who have created other authentication modules for Drupal, so that I may know before-hand what kind of problems I may face; also because my module needs to provide an API for other authentication modules. This phase should be over by May 15th taking into account the fact that I have my end semester exams and submissions from April 22nd to May 4th. Also I shall gain more knowledge on how to write modules for Drupal and the code of other authentication modules written for Drupal. This time will also help to get acquainted with the Google Contacts API.
- I shall begin my coding from May 17th. This way I will have something to show to my mentors and Drupal community when the official coding period begins on May 26th. I will be ready with questions for my mentor. At each step the code will be available on the drupal.org, so that people may use it and report bugs, if any.
- First I would develop the module without any security. All the requested tokens will be unsecured and one-time tokens only. This is to see that

everything is working the way it should. This would be done latest by June 15th. On proper authentication, the user will be directed to the proper page and contact details of the user will be retrieved. The page to which the user will be directed will be a parameter to the function exposed by the module. Now it is up to the website what it would do with the contact details (the contact details may be passed to the invite module). Optionally, this module may parse the feeds and then pass the data over to the website and/or module. Third party sites may be required to register with Google before they are allowed to access Google Data API feeds. This is the responsibility of the webmaster.

- Then the same functionality will be extended over to session tokens which can be used infinitely. The user (and not the site admin) will be able to select which kind of tokens to use. A secure method of storing session tokens will have to be implemented. This should be over by the end of June.
- Then the feature of secure feeds will be implemented. For this the domain must be registered with Google as described in <http://code.google.com/apis/accounts/docs/RegistrationForWebAppsAuto.html>. This should be over by the 14th of July well in time for mid-term evaluation.
- The module will be released for testing. As I will be attending Drupal Barcamp at Ahmedabad, I shall ask fellow Drupal developers and users to try out my module and give inputs.
- The module will be ready for deployment by the 2nd week of August taking into account any delays that may occur.

About myself:

I am a sophomore student of Computer Engineering at Sardar Vallabhai Patel National Institute of Technology (www.svnit.ac.in), Surat, India -one of the best engineering colleges in India. I am 21 year old and have been hooked to computers since the age of 10. I have been using GNU/Linux since my 8th standard. I made my school website when I was in my 9th standard. The website is now dead as there was no one to maintain it after me. The first time I got involved with FOSS was with dotGNU. Back in 2002, I had learned a bit of .Net and tried running a few simple .Net apps in dotGNU. To be honest, I am not much into web programming. I know PHP and AJAX but I am more into C, C++ and Java. I had once developed a computer shop inventory system for my friend's shop in four days, including learning VB 6. After that I have not delved much into Windows programming. I know MySQL and MS SQL Server. These days I am learning Python and a bit of Symbian programming. I have also been working on GNU/Linux clustering using MPICH as a hobby.

I have also started a GNU/Linux Users Group at my college and I am also the secretary of the ACM Chapter here. I conduct workshop regularly on topics like GNU/Linux, algorithms, basic Game AI, Python, testing vulnerability in websites etc. I am also a member of the robotics club of our college and a bit into 8051 and AVR programming and have participated in a few robotics events.

I am a fast learner and have been using PHP for nearly 18 months now. I have been using Drupal for nearly a year now. That is why, I believe I will be able to do this project fast and finish it well before the deadline and achieve all my design goals. I am looking forward to it.