Extensibility of the LSI Portal, generalizing and extending

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Introduction

The LSI Portal\textsuperscript{6}: a portal project, focusing in bioinformatics, whose goal is to produce a web based front end to compute resources. The portal is implemented using the following technologies: PHP\textsuperscript{1}, Perl\textsuperscript{2}, MySQL\textsuperscript{3}, Apache2\textsuperscript{4}, and Lightweight Directory Access Protocol (LDAP)\textsuperscript{5}. The intent is to allow non-programmers to use complex programs through an intuitive web interface. The function of the technologies listed is shown below.

Original Layout

1. A user navigates to the portal\textsuperscript{7} with a web browser, from virtually anywhere, on an internet capable device.
2. The user uses their account credentials to log on to the portal. The credentials are verified against the entries in the MySQL database. If it is a match the login succeeds, otherwise access is denied. This operation is carried about by the MySQL Apache2 module.
3. Once they are logged into the portal allows the user to submit new jobs, manage previously submitted jobs, download the output of a job locally, and re-run completed jobs. Jobs consists of a program available on the portal that can be submitted to a compute resource.
4. The portal also supports collaboration through groups and specifically allowed users. Once a user is in a group they can manage the level of access for members in the same group. For more granularity a user can also specify specific portal user’s access level. The three levels of access are: none, read only, and read and write. The access level is defaulted to none for both groups and specific users. It must be changed explicitly by the owner of the job for other portal users to have access.
5. The portal also has an administrative side. Administrators have more privilege than regular users. For instance, an admin can cancel any job that has been submitted whereas regular users can only cancel jobs they have access to. Administrators also manage the groups that regular users are in as well as the users that are on the portal.

Current Layout

1. A user navigates to the portal\textsuperscript{7} with a web browser, from virtually anywhere, on an internet capable device.
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3. Once they are logged into the portal allows the user to submit new jobs, manage previously submitted jobs, download the output of a job locally, and re-run completed jobs. Jobs consists of a program available on the portal that can be submitted to a compute resource.
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References and Credits

1. PHP. http://php.net
7. Life Science Informatics “Compute Portal”. http://biotech.inbre.alaska.edu/ – This project was sponsored in part by UA INBRE.