

PROJECT INTRODUCTION

Objectives

To develop a prototype that demonstrates the necessary infrastructural middleware (e.g. Grid services container, change notification & Grid services interactions) that operates over Grid services & Grid infrastructure to support bioinformatics personnel in performing high-throughput genomic analysis using Globus Toolkit v3.0.2 (OGSI Reference Implementation).

Project Investigator / Manager

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Period of Project

Oct 2003 – Mar 2004

Website

http://www.nyp.edu.sg

Abstract

Blast and Primer Grid Services (based on OGSA) are developed. A resource broker is incorporated to perform a more effective job execution. SMS Notification and OGSA-based Notification Service are coupled to provide prompt notification on any Protein sequence update. Overall, the portal provides an intuitive avenue for scientists/researchers in performing Blast and Primer job submission.

PROJECT DETAILS

Description

The Bioinformatics portal provides the following services:

1. Distributed BLAST Service

This module determines the optimum Grid resource(s) to perform a BLAST job via a resource broker. Basic Local Alignment Search Tool is leveraged for searching of DNA and gene sequences similarities.

2. PRIMER Unique Pattern Search Service

This service allows users to key in DNA sequences to find out its uniqueness among different fasta/chromosome files. The results will be stored in MySQL database to facilitate quick retrieval for future searches.

3. Protein Modification Notification Service

The Notification Service simulates a scenario where a (Swiss-Prot) protein database modification done by a scientist could be made known to other scientists as soon as possible. The service leverages on the OGSA-based notification service to interface with a SMS Gateway developed in the project to send out notifications via SMS Messages.

