Constructing a Fully-fledged Fishery Information Sharing Hotline: Experience of Designing
File Transfer Service and Access Control

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Abstract

The aim of this thesis is to solve two major problems in designing a system entitled Fishery Information Sharing Hotline (FISH) for integrating three heterogeneous databases into a web-based data warehouse in fisheries. One is how to design a software package named File Transfer Service (FTS) for transferring the data from the heterogeneous databases to the data warehouse. Its design goal requests the capability of automatically transferring data with a user-friendly interface between various platforms on Internet. Naturally the FTS modules distributed on different platforms are implemented using Java programming language according to the principle of File Transfer Protocol (FTP). The other is to solve the access control problem consisting of authentication, authorization, and auditing topics. Then the authentication module is implemented using Kerberos technology for avoiding the delivery of password on the Internet. Role-Based Access Control (RBAC) technology is used to classify the users for authorization purpose. Also a SQL server based database is designed to account and audit the access of the data warehouse.
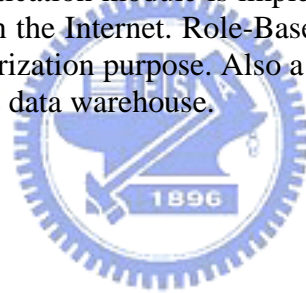
Keywords: File Transfer Service、Access Control、Data Warehouse、On Line Analytical Processing、Role-based Access Control.

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摘要

　　本論文是針對整合三個異質性資料庫，設計漁業資料倉儲，針對設計過程中，前端與後端的兩大課題進行研究。前端是設計一個能夠將資料從異質性資料庫轉移到資料倉儲的檔案轉移服務，主要的設計目標是在網際網路不同的作業平台上，能夠藉由簡單的操作介面，建立自動化的轉移服務。檔案轉移服務的設計是根據檔案傳輸協定的標準，為了突破作業平台的使用限制，檔案轉移服務則利用爪哇程式語言進行實作。後端是存取控制，其中包含認證、授權以及審計。認證是透過 Kerberos 技術，避免密碼在網路上傳遞。在授權的部分，則是利用植基於角色式存取控制的技術，對使用者的身份進行權限分級。最後，透過 SQL server 資料庫軟體記錄資料倉儲的存取動作。

檔案轉移服務(File Transfer Service)
存取控制(Access Control)
資料倉儲(Data Warehouse)
線上分析處理(On Line Analytical Processing)
植基於角色式存取控制(Role-based Access Control）