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Concept of Trusted Transaction for Secure Cloud Transactions

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ABSTRACT

In this project, we are providing accuracy and improving performance of cloud transactions in distributed transactional database system deployed over cloud servers. Data transfer from one system to another means data will be transferred from system to database through third-party service, this third party provide the service of the transaction manager.

A distributed transactional data stored in database has access to one or more systems or suitable users (it is not system to system connection but it is database to user, client and cloud server connection). The transaction manager checks if the users, client have the privileges by checking their credentials and based on that he gives permissions This is called as host connection (Cloud server) for data accessing.

Storing the data in to cloud server means it is a global storage any one can access after checking the policy based authorization system which protect the sensitive data. It enables only suitable users to access the data.

Two-Phase Validation Commit (2PVC) protocol ensures that a transaction is safe and secure by checking if the user is authorized or not and then checks again if he has permissions or not. This improve the security and performance.
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1. Introduction

1.1 Abstract
In this project, we are providing accuracy and improving performance of cloud transactions in
distributed transactional database system deployed over cloud servers.
Data transfer from one system to another means data will be transferred from system to database
through third-party service, this third party provide the service of the transaction manager.

A distributed transactional data stored in database has access to one or more systems or suitable
users (it is not system to system connection but it is database to user, client and cloud server
connection). The transaction manager checks if the users, client have the privileges by checking
their credentials and based on that he gives permissions This is called as host connection (Cloud
server) for data accessing.

Storing the data in to cloud server means it is a global storage any one can access after checking
the policy based authorization system which protect the sensitive data. It enables only suitable
users to access the data.

Two-Phase Validation Commit (2PVC) protocol ensures that a transaction is safe and secure by
checking if the user is authorized or not and then checks again if he has permissions or not. This
improve the security and performance.

1.2 Existing System
To ensure elasticity and scalability, cloud services frequently make heavy utilization of
replication to ensure consistent performance and accessibility. As a result, many cloud
services depend on the possibility of inevitable consistency while propagating information
throughout the operational system. This regular model is a variation of weak consistency
which permits data to be inconsistent among a few copies through the update process,
however implies that changes will be spread to all or any reproductions in the long run.

1.3 Proposed System
In this Project, we have 3 modules ie, Admin, User and Transaction Manager.
The admin accepts or rejects users once they register. He also uploads files which can be
accessible by existing users. We use two phase validation which first checks for authorizations
then checks for permissions. The transaction manager is the one who allows permissions to the
user. Permission to read, update and download the file based on the credentials of the user. It
makes the process smoother and more efficient and also improves the security of the transaction
thereby protecting sensitive data to be leaked or viewable to unauthorized or unintended audience.
Two Phase Validation Commit Protocol

Algorithm 2. Two-Phase Validation Commit - 2PVC (TM).
1  Send “Prepare-to-Commit” to all participants
2  Wait for all replies (Yes/No, True/False, and a set of policy versions for each unique policy)
3  If any participant replied No for integrity check
4       ABORT
5  Identify the largest version for all unique policies
6  If all participants utilize the largest version for each unique policy
7       If any responded False
8       ABORT
9  Otherwise
10      COMMIT
11  Otherwise, for participants with old policies
12      Send “Update” with the largest version number of each policy
13      Wait for all replies
14      Goto 5

2. Requirements

2.1 Hardware Requirements
- Intel Pentium IV (3.5 GHz) and Upwards
- RAM 2 GB and Above
- HDD 40 GB Hard Disk Space and Above

2.2 Package Requirements
- SQL Server 2012 or 2014
- Windows 7 software package and higher.
- IE 7.0 browser
- IIS 7.0.
2.3 Useful Requirements

**Inputs:**
- Admin should accept new users.
- Admin should upload files.
- Admin can view all transaction manager accepted files.
- Admin doesn't give the permission to access the files.

**Outputs:**
- Admin will get his home page.
- Registration details will be stored in centralized database.
- Admin and Transaction Manager can view all files.
- Transaction Manager can view all requested files from user end.
- Transaction Manager give the permission for user.

2.4 Non- Functional Requirements

- User Interface.
- Performance Constraints.
- Error Handling and Extreme Conditions.
- Quality Issues.
3 System Analysis

3.1 Modules

- Administrator
- User
- Transaction Manager
- Authentication
- Registration

3.2 Description of Modules

Administrator: Admin is the main user of the system. He is able to upload files. Admin can view all registered users and admin can accept/reject the user.

User: User is an authorized admin. He can view all uploaded files from admin and transaction manager if allowed permissions.

Registration: User is asked to register with his complete details to use the system. Upon getting registered, he can login into the system with his ID and password. After completing this process, the user becomes authorized to use the system.

Authentication: Every user requires a login page to enter into the system. Login is feasible only if the user provides his credentials like user ID and password to log into the system. Any system features an information that checks whether or not the user may be a valid user or not through his user ID and password.

Transaction Manager: Transaction manager views user requested files and gives the policy for that file. He can view all accepted and rejected files.

4. Feasibility Report

Preparatory examination looks at venture attainability, the probability the framework will be helpful to the association. The primary goal of the practicality study is to test the Technical, Operational and Economical possibility for including new modules and troubleshooting old running framework. All frameworks are doable on the off chance that they are boundless assets and unbounded time. There are perspectives in the practicality study bit of the preparatory examination:

1. Technical Feasibility
2. Economical Feasibility
3. Operation Feasibility.

5. E-R Diagram

Entity Relationship Diagrams (ERDs) illustrate the logical structure of databases. There are three basic elements in ER Diagrams:
- Entities
- Attributes
- Relationships

Entities
An entity is a business object in a world that represents a group of data.

Attributes:
An attribute is a sub-group of information within an entity.

Relationships:
Represent associations between entities.
6. UML Diagrams
Describes the functionality provided by a system in terms of actors, their goals represented as use cases, and any dependencies among those use cases.

The main purpose of the use-case diagram is to help development teams visualize the functional requirements of a system.

6.1 Use Case Diagram
6.2 Sequence Diagram

Shows how objects communicate with each other in terms of a sequence of messages. Also indicates the lifespan of objects relative to those messages.

Sequence diagram shows interaction between objects over a specific period time.
6.3 Activity Diagram
Admin Activities
User Activities

- Request to files
- Accepted files
- Rejected files
- View all files
- View all files
- Logout
7. Class Diagram and Data flow Diagrams

7.1 Class Diagram

7.2 Data Flow Diagrams

A DFD represents the flow of the data between various processes. It can represent the address of the datasource for various processes. It can be divided into two categories:

1. Input Flow
2. Output Flow

Input Flow means the data is going to store in the database. Output flow means data is getting from database.
Context Level Diagram:

Data Input Stage

ADMIN

TRANSACTION MANAGER

USER

BPA

Data Output Stage

date storage

UI screens

Reports

Expert

Admin level

Login DFD:

Open Login Form

Enter Username and Password

Check Users

User Home Page

Verify Data

tblRegistration and Login
Admin Level DFD:

User level Diagram:
8. Data Dictionary
<table>
<thead>
<tr>
<th><strong>tbl_LoginHistory</strong></th>
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<tbody>
<tr>
<td>UserId</td>
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<tr>
<td>Name</td>
</tr>
<tr>
<td>LogInDate</td>
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<tr>
<td>LogOutDate</td>
</tr>
<tr>
<td>LogInTime</td>
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<tr>
<td>LogOutTime</td>
</tr>
<tr>
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<tr>
<th><strong>tbl_Permissions</strong></th>
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<tbody>
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<tr>
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<tr>
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</tr>
<tr>
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<tr>
<td>PermissionDownload</td>
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</thead>
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<tr>
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9. Screen shots

HomePage/Login Page
Registration page
Administrator Login Page
Concept of Trusted Transaction For Secure Cloud Transactions

All Files

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<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>cif</td>
<td>account</td>
<td>Accepted</td>
</tr>
<tr>
<td>ddfs</td>
<td></td>
<td>Requested</td>
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<td>skf</td>
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<tr>
<td>Graduate Program Team</td>
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</tr>
<tr>
<td></td>
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### User Requested File List

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<td>Additional Files</td>
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## Accepted Files

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<tr>
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<td>Accepted</td>
</tr>
<tr>
<td>Abstract</td>
<td>David</td>
<td>Accepted</td>
</tr>
</tbody>
</table>
10. Future Enhancement:

To develop MVC model compatible version for web site and mobile.
To give the offers in products also.
To develop code in cloud computing.
To provide the online wine tenders also.

11. Conclusion:

Despite the reputation of cloud facilities and their wide acceptance by originalities and governments, cloud suppliers still lack facilities that assurance both data and access control policy constancy across multiple data centers. Here, we recognized several consistency problems that can arise during cloud-hosted transaction processing using weak constancy models, particularly if policy-based authorization systems are used to apply access controls. To this end, we developed a diversity of lightweight evidence execution and consistency models—i.e., Deferred, Prompt, Incremental, and Continuous proofs, with view or global constancy—that can implement increasingly strong protections with minimal runtime expenses.
13. References

- **FOR .NET INSTALLATION**

- **FOR DEPLOYMENT AND PACKING ON SERVER**

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- **FOR ASP.NET** Asp.Net 4.5 Unleashed

- Software Engineering (Roger’s Pressman)