UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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COURSE NAME	:	**DISTRIBUTED SYSTEMS**
COURSE CODE	:	**BIE 33203**
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NEWS PORTAL

Abstract

New Portal allows the clock synchronization for the coordination and programming of actions among stations on distributed systems based on networks. Clock synchronization in today's systems can be considered a necessary feature of network technology to deliver. However common Ethernet and IP networks have not been designed to support the high-performance clock synchronization of audio and video applications, industrial systems, metering equipment and grid power systems. In this article, we present the clock synchronization protocols which can be used in networks requiring real time quality.File synchronization gives the impression that files are always available when needed, encouraging mobility and productivity for news portal. Task Scheduler provides a solution that synchronizes file shares with cloud storage, creating a unified directory structure for multiple branch offices.

1.0 Introduction

News Portal allows readers to read up to date news related to many fields like Entertainment, National, International, Business, Bollywood, Hollywood, Politics, Sports, Education etc. A news portal is any access point to the Internet. This channel is created up-to-date news information on the Internet. This can save time for users. The main purposes of this system is to distribute the news to two portal from different countries at a custom time. The news posted on the Kuala Lumpur Portal then the news will be distributed to the other two countries at a custom time for example at 7 am. Technically it will depends to the systems setting time.

2.0 Distributed System model

The model that is used in this project is 2-Tier model. A two-tier architecture is a software architecture in which a presentation layer or interface runs on a client, and a data layer or data structure gets stored on a server. Separating these two components into different locations represents a two-tier architecture, as opposed to a single-tier architecture. Figure 1 is the two-tier architecture.

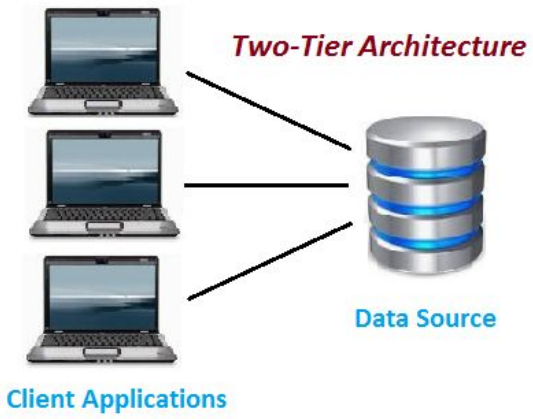

Figure 1

3.0 Implementation

One way to implement software in a distributed system is to use raw networking support. All of these models force the developer to use high-level programming with PHP language , in one way or another, which forces the developer to deal with network data representation. To update the database it uses a task schedule with each set time. This package can synchronize MySQL databases tables between servers. Synchronize MySQL database from one server to another server or from one database to another database on the same server using Simple PHP script. One class can retrieve the list tables and records from the origin server MySQL database and send the data to another server script via HTTP. On the destination server a script receives the request and recreates the original tables in a MySQL database and inserts the retrieved records.

```
try {
    $conn = new PDO("mysql:host=$servername;dbname=$dbname", $username, $password);
    // set the PDO error mode to exception
    $conn->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
    $sql = "INSERT INTO tblposts (id, PostTitle, CategoryId, SubCategoryId, PostDetails, PostingDate, UpdationDate, Is_Acti
    (7, 'Jasprit Bumrah ruled out of England T20I series due to injury', 3, 4, '<p style=\"margin-bottom: 15px; padding: 0p
ce with the ball. In his quota of four overs, he conceded 19 runs and picked 2 wickets at an economy rate of 4.75.</p><p st
    // use exec() because no results are returned
    $conn->exec($sql);
    echo "Successfully Distribute Data to Portal Kelantan";
    }
catch(PDOException $e)
    {
    echo $sql . "<br>" . $e->getMessage();
    }

$conn = null;
?>
```

Figure 2 : Code that distributed data from master server to slave

From Figure 2, the code implement from master server to distribute the news to other slave. Master server must have their IP address of slaves and it can config at each other.

4.0 Discussion

The user system interface is usually located in the user's desktop environment and the database management services are usually in a server that is a more powerful machine that services many clients. Processing management is split between the user system interface environment and the database management server environment. The database management server provides stored procedures and triggers.

Purpose and Origin

Two tier software architectures were developed in the 1980s from the file server software architecture design. The two tier architecture is intended to improve usability by supporting a forms-based, user-friendly interface. The two tier architecture improves scalability by accommodating up to 100 users (file server architectures only accommodate a dozen users), and improves flexibility by allowing data to be shared, usually within a homogeneous environment. The two tier architecture requires minimal operator intervention, and is frequently used in non-complex, non-time critical information processing systems. Detailed readings on two tier architectures can be found in Schussel and Edelstein.

Technical Details

Two tier architectures consist of three components distributed in two layers: client (requester of services) and server (provider of services). The three components are

1. User System Interface (display management services)

2. Processing Management (such as process development, process enactment, process monitoring, and process resource services)

3. Database Management (such as data and file services) The two tier design allocates the user system interface exclusively to the client. It places database management on the server and splits the processing management between client and server, creating two layers.

Usage Considerations

Two tier software architectures are used extensively in non-time critical information processing where management and operations of the system are not complex. This design is used frequently in decision support systems where the transaction load is light. Two tier software architectures require minimal operator intervention. The two tier architecture works well in relatively homogeneous environments with processing rules (business rules) that do not change very often and when workgroup size is expected to be fewer than 100 users, such as in small businesses.

Advantages:

Since processing was shared between the client and server, more users could interact with such a system.

Disadvantages:

When the number of users exceeds 100, performance begins to deteriorate. This limitation is a result of the server maintaining a connection via "keep-alive" messages with each client, even when no work is being done. A second limitation of the two tier architecture is that implementation of processing management services using vendor proprietary database procedures restricts flexibility and choice of DBMS for applications. Finally, current implementations of the two tier architecture provide

limited flexibility in moving (repartitioning) program functionality from one server to another without manually regenerating procedural code.

5.0 Conclusion

In this age of optimization everybody is trying to get optimized output from their limited resources. The concept of distributed computing is the most efficient way to achieve the optimization. In case of distributed computing the actual task is modularized and is distributed among various computer systems. It not only increases the efficiency of the task but also reduce the total time required to complete the task.

6.0 References

- https://www.slideshare.net/armanreza161/online-news-portal-system
- https://phpgurukul.com/news-portal-project-in-php-and-mysql/
- https://www.phpclasses.org/package/10077-PHP-Synchronize-MySQL-databases-tables-between-servers.html

Appendix

1. Admin

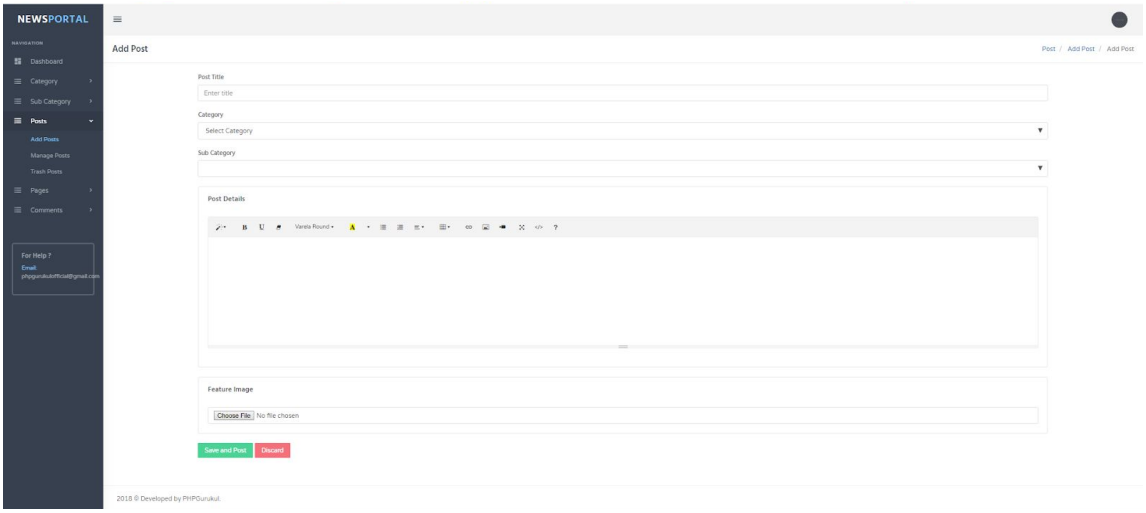

Figure 3

Figure 3 is the post interface that admin will manage. Admin will insert post title, category, subcategory, post details, and image of the news. The post will distribute to the other two portal at a set time using Task Scheduler. The reader can read the news on a users interface.

2. Readers

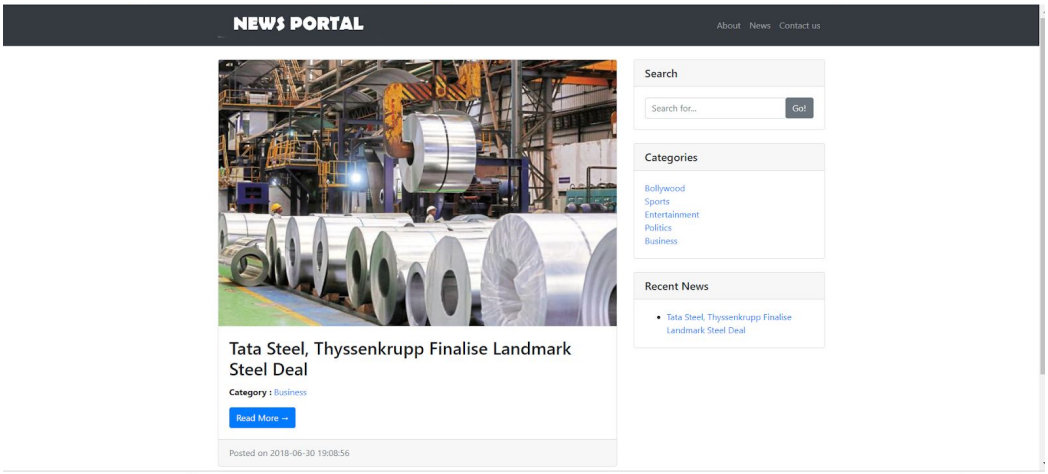

Figure 4

Figure 4 is the reades interface they can read the news. Reader do not need to input anything. This view will receive post at specific time.

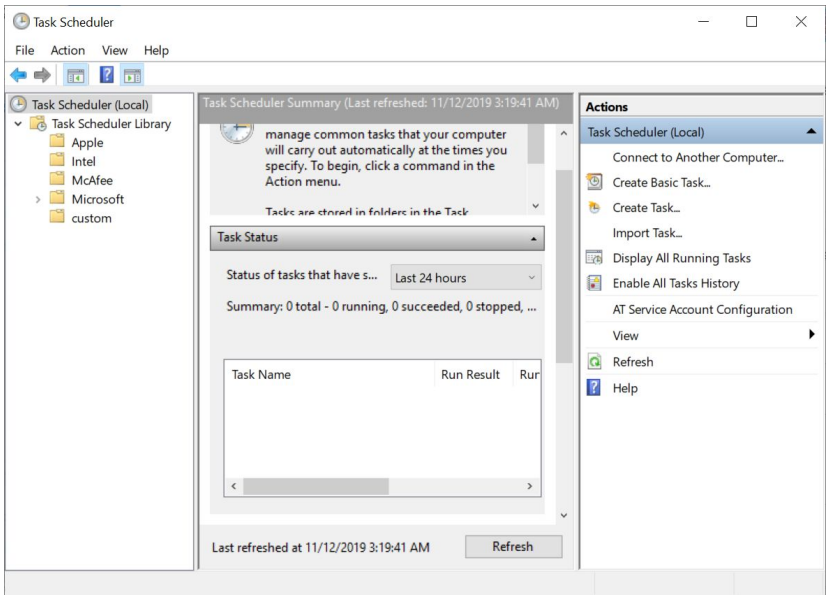

Figure 5

Figure 5 is Task Scheduler that will schedule the post to the other two portal that input by admin from specific time.

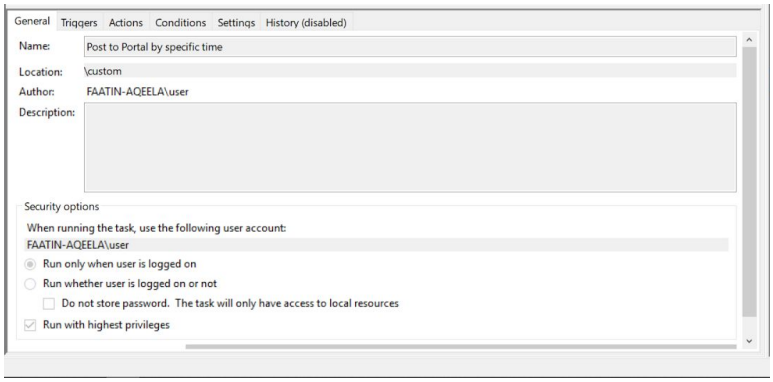

Figure 6

Figure 6 is the General setting in Task Scheduler to create a task by inserting a task name and click the “Run with highest privileges”.

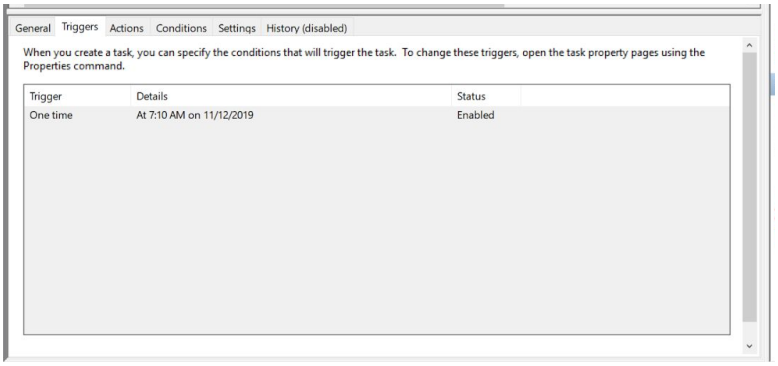

Figure 7

Figure 7 Triggers will parallel with task that invoke specific time and date to run the php script that will implement distributed synchronize file server.

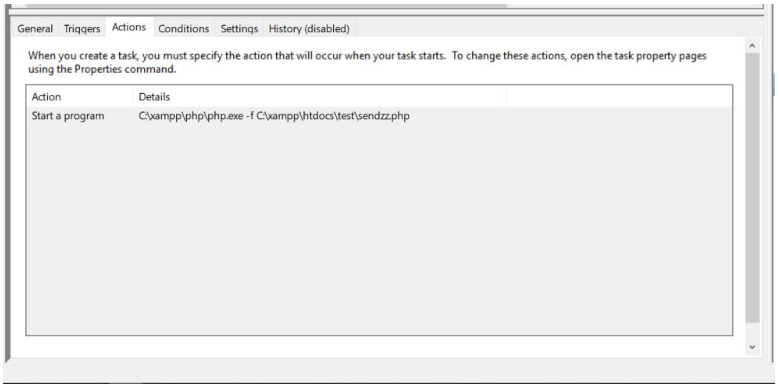

Figure 8

Figure 8 is the action from the allocation php script file that will execute the command based on set the path of phpmyadmin and run the mysql query to another server.