

## CHAPTER 4

### ANALYSIS AND DESIGN

#### 4.1 Design

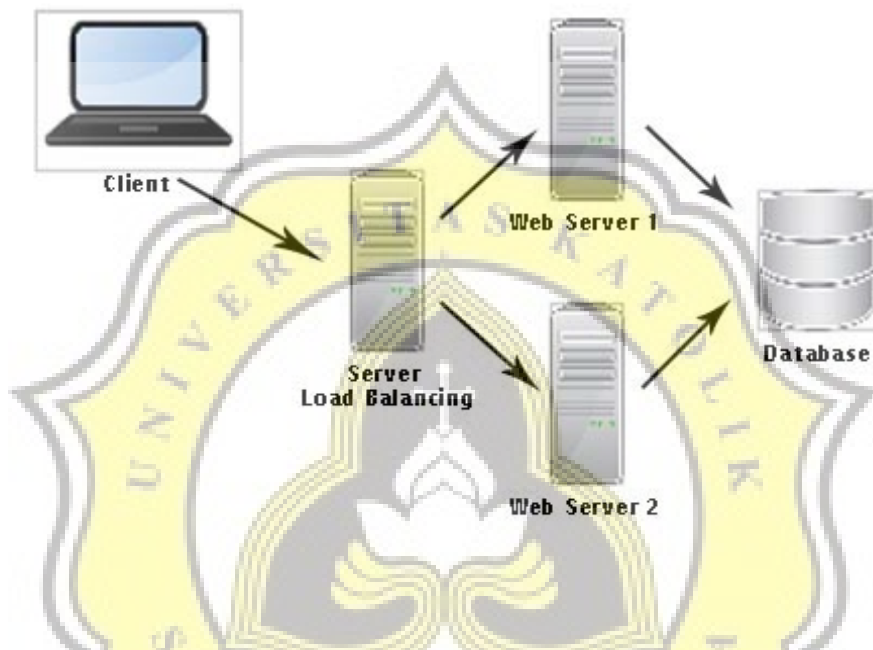


Illustration 4.1: load balancing

In this project we need several programs to be used as a supporter or as a major part of this project. Some of the programs that will be used in this project are:

1. Ubuntu Desktop 16.04

Ubuntu is one of the mainstay linux distributions debian project. The reason for using this operating system is because this operating system is a freeware. This operating system is also easy to operate and can be updated easily because it can be updated without re-install from the beginning, the update will usually be given every few months. And also Ubuntu has the

advantage to be a server because it has a good security of viruses and many packages for server services that can be installed easily.

## 2. Nginx

This program is a well-known as http and proxy server that is stable with high performance but also little resource uses, so the server does not need to have very high specification to run this program.

## 3. Apache2

A new version of the old apache is Apache2, this program is a server package for web servers that serve http requests from clients. Apache has some advantages that is freeware which is also easy to configure, apache 2 can also be used in various operating systems.

## 4. MySql

As a program for storing data MySql has many advantages that are needed for this project that has a tremendous speed to finish the query and also can be used more than 1 user without fear of data conflicts. MySql can also store various data types and can run on various operating systems as well.

## 5. PhpMyAdmin

The task of phpMyAdmin is to make it easy to configure and manage data in MySql, where we can configure MySql on a GUI basis. This program is created in PHP base and we can access it through web browser.

## 6. Apache Jmeter

Jmeter is a java based open source application that is still one company with Apache, this application used to test the load level on a server including web server. Jmeter can also be run on multiple operating

systems, one of them Ubuntu Linux. The reason for this application is because the accuracy of the test results in the application is accurate.

## 4.2 Analysis

The picture above is a load balancing illustration which on the client side is that will access the web server, server load balancing part is a proxy server that performs load balancing, the web server part is the server that contains the web page, in the database part is the data storage from the website.

When the client accesses the web page the client will send the request, but before heading to the web server must pass the load balancing server first to choose which web server will serve the request of the client based on which server will serve the request based on what algorithm used for the load balancing configuration in which this project uses the least connection algorithm which will select the web server based on which server is serving the least demand, after the new specified will be forwarded to the selected web server and then the server will access the database to retrieve the data in need as requested from the client.