# Lan Based Lab Management Application

College of Engineering, Pune - 5
Dept. of Computer Engineering and IT
B.Tech. Project: VII Semester - Progress Report

Bhushan Shitole
Computer Engineering
shitoleba07.comp@coep.ac.in
Roll no: 702057

Atharva Deshmukh
Computer Engineering
deshmukhaa07.comp@coep.ac.in
Roll No: 702014

Faculty Advisor: Prof. Abhijit
External Advisor: Mr. Gaurav Purohit(Calsoft Inc.)

# Contents

# 1 Abstract

The objective of this project is to develop a web application, "Lan Based Lab Management System",to manage software installation in a networked environment, typically a LAN, via the Internet.This application will allow software installation via a central, remote, location and therefore eliminate the need for physical presence of the administrator. Besides remote s/w installation, it allows admin to perform other control activities, such as remote and concurrent shutting down/reboot of clients and it also shows the status of clients.

# 2 Introduction

Typically, in a networked environment, a number of computers are connected by using one of the various local area network (LAN) technologies. The most popular, known as switched network, uses Ethernet as the LAN technology. Installing software to computers in such a network is always a tedious process that administrators face every day. The techniques adopted by administrators range from installing the software computer-by-computer, to using the cloning technique after installing the software to one of the computers. Both of these techniques have their limitations: while the first one will consume a considerable amount of man-hours, the second requires all the computers to have the same hardware configuration. In addition, both of these techniques require the administrator to be physically present at the location of the computers.

Given that these computers are connected to a LAN, it is natural to seek for a solution where the LAN is used for dispatching and installing the software packages. Therefore, the main objective of this project is to develop a web application to manage software installation in a networked environment, typically a LAN, via the Internet. This application will allow software installation via a central, potentially remote, location and therefore eliminate the need for physical presence of the administrator. The same protocols used in performing the remote and concurrent software installation could also be used to perform other control activities, such as remote and concurrent shutting down, reboot or loging off of computers, displaying administrative messages simultaneously on multiple computers, showing the status of all the clients connected to network, etc.

# 3 Requirement Analysis

The requirements of the proposed application are as follows :

+ allow the administrator to select the client machines for software installation;
+ check whether the selected machines are connected to the network and alive;
+ have an option to select the software packages to be installed in the clients;
+ handle the installation on the remote clients without the physical presence of the administrator on the site;
+ have an option of remote, concurrent shut down, reboot or log off
+ and provide security via password authentication in order to avoid inappropriate use of service.

# 4 Related Work

In this section, we describe the existing utilities related to remote software installation. An existing commercial tool that is closer to our solution is RSI by Install Solutions. There exists another commercial product, Desktop Central by Manage Engine. Both of them are expensive (thousands of dollars per deployment) and are not affordable by organizations, such as a state university like ours. In addition to these tools, a number of US patents were filed regarding remote computer management.
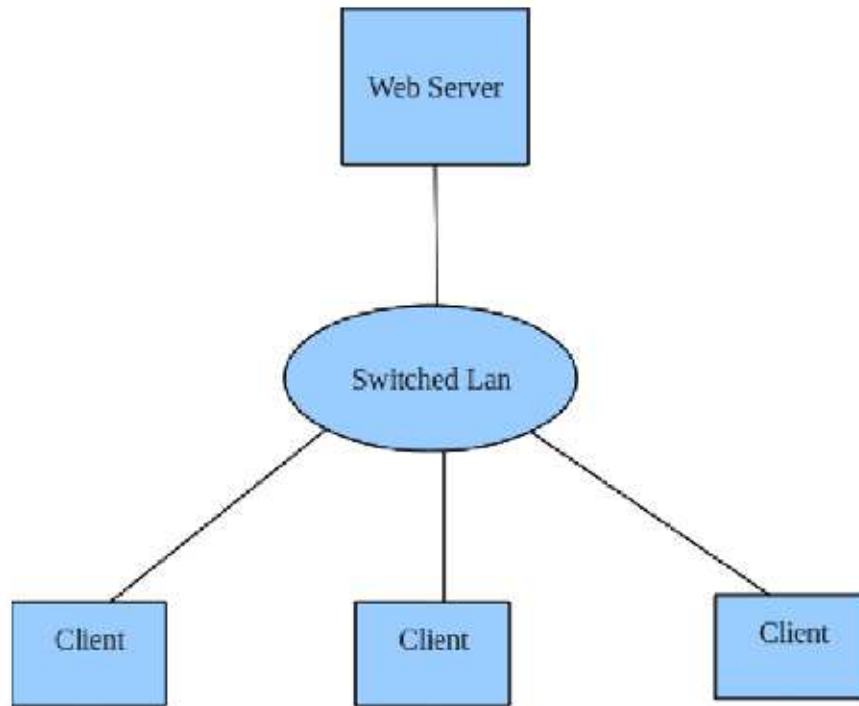
# 5 Proposed Solution / Approach



Figure 1: Query Expansion

1. The main web component will accept administrator's request and pass it after authentication, to the main software component via web services.
2. The software packages to be installed will be sent to the clients after confirming connectivity.
3. The software packages will be saved in the clients.
4. Administrator will send the automatic install scripts to the clients.
5. Installation will be performed by the automated scripts with no administrator's presence.

# 6 Work Progress

1. Learning Python.
2. SSH, SCP and other networking protocols.
3. Understanding the networking aspect of python.
4. Playing with different python scripts related to networking.
5. Learning the GUI designing capability of python.

# 7 References

## References

[1] Ethernet, Wikipedia, The Free Encyclopaedia, available at http://en.wikipedia.org/wiki/Ethernet.

[2] Install Solution, Remote Software Installation Utility  Clientless Software Distribution for Windows 2000 and XP, Available as of June 2008 at http://www.installsolutions.net/.

[3] Mange Engine, Desktop Central  Windows Desktop Management Software, Available as of June 2008 at http://manageengine.adventnet.com/products/desktop-central/.

[4] Python www.python.org/

[5] Tutorial on Networking Programming in Python heather.cs.ucdavis.edu/ matloff/Python/PyNet.pdf

[6] SSH and SCP http://www.linuxtutorialblog.com/post/ssh-and-scp-howto-tips-tricks