Installation Document

Power Usage Monitoring from UPS, PDU and hosts for a Data Centre Company

Visuallux: web based remote power consumption monitoring tool

Customer: Patrik Arlos

Software Development CEO: Dragos Ilie

Software Development Team: NetFix

TEAM MEMBERS

Student	Name	E-mail
1	ABIY BIRU CHEBUDIE	abch14@students.bth.se
2	ADDISHIWOT TADESSE	adtb14@students.bth.se
3	ELNAZ EKRAMIAN	elee10@students.bth.se
4	MEHRDAD MEHRABAN	memb10@students.bth.se
5	MOUNIKA REDDY CHANDIRI	moch15@students.bth.se
6	SUNEEL SEELAM	suse15@students.bth.se
7	TINASHE KUREHWASEKA	tiku14@students.bth.se
8	UDAYA BHASKAR GOLLAPALLI	udgo15@students.bth.se
9	VENKESH KANDARI	vekb15@students.bth.se
10	VIRINCHI BILLA	vibi15@students.bth

Preface

This document describes about the installation instruction of the software. The document is structured in such a way that the first part discuses about glossary and abbreviations which elaborates technical terms in the document and the subsequent section describes about the installation of the required package to run the software. The final section describes about the installation instruction of the software.

Glossary and Abbreviations

PERL – *Practical Extraction and Reporting Language*

High level programming Language.

PHP - *Hypertext Pre-processor*

server-side scripting language for web development.

MySQL - *My Sequel*

relational database management system and is used for storing data.

SNMP – *Simple Network Management Protocol*

A protocol for Managing devices on IP networks

CPAN - *Client for URLs*

Collection of PERL programming language modules.

RRDTOOL - *Round-robin database tool*

Stores Data to Round Robin Database and generates graphs.

CURL - *Client for URLs*

Used for retrieving data using URL.

Introduction

The software is a power monitoring software that monitors UPS, PDU and devices connected to the UPS. It also gives the capability of managing the power devices like Adding/Deleting PDU/UPS and displaying the interconnection of the PDU, UPS and Devices. All the installation instruction of the software is provided in this document.

Software Installation

The software must installed on a stable dedicated server which is always up and reachable over the internet as to allow the users to access the software operations at any time and from a web browser of any device connected to the server which runs the software. The server must be up all the time as the software runs after every 1 minute.

Pre-requisites

The pre-requisites for this software are as follows:

Operating System – The software Runs on UBUNTU operating system. So, before using the software an UBUNTU operating system must be installed. The UBUNTU operating system is an open source operating system which is licensed under the GNU GPL ("Reciprocal" type license) licensing. The installation instruction of the UBUNTU operating system is found at the following URL:

https://help.ubuntu.com/community/GraphicalInstall

Open source software Installation

Before doing any installation of software, run the following two commands:

sudo apt-get update - downloads the package lists from the repositories and "updates" them to get information on the newest versions of packages and their dependencies. Used to re-synchronize the package index files from their sources.

sudo apt-get upgrade - Used to install the newest versions of all packages currently installed on the system from the sources enumerated in /etc/apt/sources.list. Packages currently installed with new versions available are retrieved and upgraded.

1. **Apache web server**
   a. Open terminal in in UBUNTU (Alt+Ctrl+T)
   b. Run the command "**sudo apt-get install apache2**"
   c. Grant permissions to users of this folder using the following command: "**sudo chmod 777 /var/www**"

2. **PHP**
   a. Open terminal in in UBUNTU (Alt+Ctrl+T)
   b. Run the command "**sudo apt-get install php5 libapache2-mod-php5**"
   c. Run the command "**sudo a2enmod php5**" to enable PHP.
   d. To execute PHP5 scripts without installing PHP5 Apache module run the command "**sudo apt-get install php5-cgi**"
   e. Run the command "**sudo service apache2 restart**" to restart the Apache server.

3. **MYSQL**

a. Open terminal in in UBUNTU (Alt+Ctrl+T)
b. Run the command "**sudo apt-get install mysql-server**"
c. The user is requested for a password in the middle of the installation.
d. After the installation, run the command "**sudo service mysql restart**" to restart MYSQL.
e. To use MySQL with PHP5 run the command "**sudo apt-get install php5-mysql**"

4. PhpMyAdmin

a. Open terminal in in UBUNTU (Alt+Ctrl+T)
b. Run the command "**sudo apt-get install phpmyadmin apache2-utils**"
c. During the installation, phpMyAdmin will walk you through a basic configuration. Once the process starts up, follow these steps:
   - Select Apache2 for the server
   - Choose YES when asked about whether to Configure the database for phpmyadmin with dbconfig-common
   - Enter your MySQL password when prompted
   - Enter the password that you want to use to log into phpmyadmin
d. After the installation has completed, add phpmyadmin to the apache configuration. To do so, open *apache2.conf* using the following command:
   "sudo nano /etc/apache2/apache2.conf"
e. Add the following line to the bottom of *apache2.conf:*
   *"***Include /etc/phpmyadmin/apache.conf***"*

f. Save the file and close it by pressing Ctrl+X and then pressing Y when prompted to save changes to file.
g. Run the command "**sudo service apache2 restart"** to restart Apache

5. RRDTool

a. Open terminal in in UBUNTU (Alt+Ctrl+T)
b. Run the command "**sudo apt-get install rrdtool**"
c. Run the command "**sudo apt-get install php5-rrd**" to install the rrd tool module for php.
d. Run the command "**sudo service apache2 restart"** to restart Apache

6. SNMP

a. Open terminal in in UBUNTU (Alt+Ctrl+T)
b. Run the command "**sudo apt-get install snmp snmpd**"

7. PERL

Perl is installed in the UBUNTU operating system by default. Only some required modules need to be installed. Follow the following steps to install required modules:
   - Open terminal in in UBUNTU (Alt+Ctrl+T)
   - Run the command "**sudo cpan**"
   - In the cpan shell, run "**upgrade**" to update the current version.

- Type "exit" to exit the cpan module.
- Run "**sudo perl -MCPAN -e "install DBI"**" to install the Perl DBI module.
- Run "**sudo apt-get install librrds-perl**" to install the Perl RRDs module.
- Run "**sudo perl -MCPAN -e "install RRDTool::OO"**" to install the Perl RRDTool::OO.
- Run "**sudo apt-get install libnet-snmp-perl libperl-dev libsnmp-dev**" to install packages required for SNMP and Perl.

8. **CURL**
a. Open terminal in in UBUNTU (Alt+Ctrl+T)
b. Run "**sudo apt-get install curl libcurl3 libcurl3-dev**" to install CURL in the UBUNTU operating system.
c. Run "**sudo apt-get install php5-curl**" to install the Php-curl library.

9. **MAIL SERVER**
a. Open terminal in in UBUNTU (Alt+Ctrl+T)
b. Assign hostname in **/etc/hostname name** e.g mail.nabster.com
c. Add a hostentry in **/etc/hosts** e.g 192.168.1.10 mail.nabster.com
d. Run "**sudo apt-get install bind9 dnsutils postfix dovecot-common dovecot-imapd dovecot-pop3d squirrelmail**"
e. Run "**sudo dpkg-reconfigure postfix**"

   Now you will be prompted for set of details. Choose the following values and replace **nabster.com** with your domain name.
   1. Internet Site
   2. **nabster.com**
   3. **nabster**
   4. **nabster.com**, localhost.localdomain, localhost
   5. No
   6. 127.0.0.0/8 [::ffff:127.0.0.0]/104 [::1]/128 192.168.0.0/24
   7. 0
   8. +
   9. all

Installation Instruction of the Software

Installation Instructions

- The software is given in the tar.gz format by email or bth.itslearning.com
- Download the software **NetFix.tar.gz** to the Ubuntu server
- Move the folder containing the software to the **/var/www** folder using the following command: "**sudo mv /<PATH TO CURRENT LOCATION FOLDER>/NetFix.tar.gz /var/www/**"
- Go to the /var/www directory using the command "**cd /var/www**"

- Extract the tar.gz using "**sudo tar -xvzf NetFix.tar.gz**"
- Go to the extracted folder using "**cd /var/www/Visuallux**"
- Grant the software a full permission to read, write and execute files using the following command: "**sudo chmod 777 /var/www/Visuallux**"

Starting the Software

a. Open terminal in in UBUNTU (Alt+Ctrl+T)
b. Go to the **/var/www/Visuallux** directory using the following command: "**cd /var/www/Visuallux**"
c. Run the backend.pl file to start the software using the following command: **"Perl backend.pl"**
d. From the web browser access the frontend using the url : **<Server-IP>/Visuallux**
e. Login using **admin** as both the username and password to access the operations