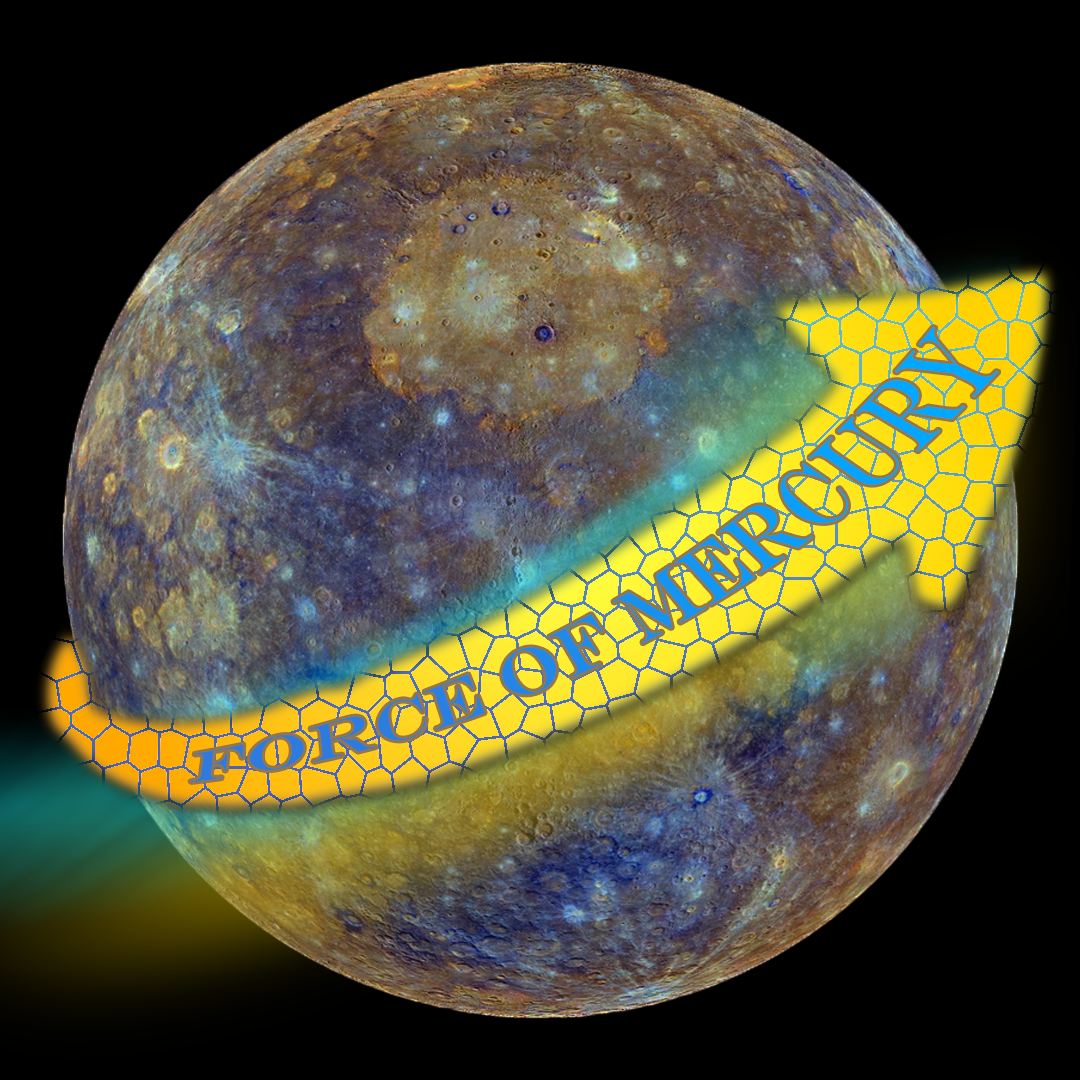
SolarProx User’s Manual

Draft 1.0

Force of Mercury



Revisions

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Primary Author(s) | Description | Date Completed |
| 1.0 | Trevor Ryan  Austin Carper  Jacob Sanford  Kurt Neimayer | This is the initial rough draft for SolarProx’s User’s Manual | 04/13/2021 |

Table of Contents

[**1 Introduction**](#_heading=h.1prgy7w1f2y0) **4**

[1.1 General Information](#_heading=h.75pylwo3laxv) 4

[1.2 Product Overview](#_heading=h.9kodu4l32yg8) 4

[1.3 Terms](#_heading=h.bl9e4ogfgkyd) 4

[**2 Initial Setup**](#_heading=h.l06unrwart6z) **5**

[2.1 Required Software](#_heading=h.rb3xdpm18d9x) 5

[2.2 Setting Up Proxmox Server](#_heading=h.nnrvs4oiiknm) 5

[2.3 Setting Up Active Directory](#_heading=h.jm33ma2nrb84) 6

[2.4 Setting Up Bash Scripts](#_heading=h.y11nhgactfdy) 6

[**3 User’s Manual**](#_heading=h.1nrlufl2ruhl) **7**

[3.1 User Authentication Webapp View](#_heading=h.4mf2rpdvt3g1) 7

[3.2 User Webapp View](#_heading=h.gxw0w0g3h2j2) 7

[3.3 Admin Webapp View](#_heading=h.cutc4hqg72z3) 8

[**4 Troubleshooting**](#_heading=h.o6wnycu2net4) **9**

[4.1 Bash Script Troubleshooting](#_heading=h.igor0l2ezqif) 9

[4.2 Proxmox Server Troubleshooting](#_heading=h.qilbgxr16cds) 9

[4.3 Web Application Troubleshooting](#_heading=h.490k17b1sqt) 9

# 1 Introduction

## 1.1 General Information

This document has been organized into four major sections: Introduction, Initial Setup, User’s Manual, and Troubleshooting. The Introduction provides a brief overview of the application and defines key terms that are used throughout the rest of the document. The Initial Setup will walk through how an administrator can get the server up and running. The User’s Manual section will be broken down into admin and average user sections. Each section within the User’s Manual will describe the actions available to that type of user.

## 1.2 Product Overview

SolarProx is a web interface that will allow users to log in and be able to revert virtual machines back to a certain snapshot created by the administrator and be able to reboot these virtual machines if they go down. SolarProx will also allow for the administrator to add notes to machines so that users can view these notes. Users will only be able to read these notes and won’t be able to edit or remove the notes. Another capability of SolarProx is that the administrator will be able to make virtual machines available and unavailable for the users so that users won’t have access to all the virtual machines in the lab at once. The benefit of this software is that the administrator doesn’t have to be contacted every time a virtual machine goes down. This will save a lot of time for the administrator and the user. The user won’t have to wait for the administrator to see a message that a virtual machine is down. Instead, the user can just log into the web interface and reboot the machine themself.

## 1.3 Terms

* **Active Directory** - a type of software that allows controlling permissions of groups of users, credentials, and other important information on a network.
* **API -** Application Programming Interface. A set of software design to allow connections to existing code to allow integrating another program or making writing the software easier.
* **Proxmox -** A software used to manage virtual machines and allowing a connection to them over the internet.
* **ISO Image -** Files downloaded to create a virtual machine. Can be found online to use in the Proxmox server.
* **OS -** Operating System.
* **VM -** Virtual Machine. These are hosted in Proxmox and allow a virtual image of different machines.
* **Web Server** - A software that runs and loads HTML and other web files to be accessible over a network connection.

# 2 Initial Setup

To start, download the files from the SolarProx Github page. You will be downloading the bash scripts along with the PHP code for the actual web application. You will also need to download and start up an instance of Proxmox which will give you your actual Proxmox server. Lastly, you need to make sure you have Active Directory downloaded and a domain setup using Windows server 2016.

## 2.1 Required Software

To run Proxmox the following software is required:

* A php interpreter
* Apache Web Server V2.8 or greater
* Proxmox 3.0 or greater
* Ability to execute .sh files
* A secondary device or virtual machine to run Windows Server 2016

## 2.2 Setting Up Proxmox Server

Once you have downloaded your Proxmox server and booted it up, you will have to set a username and password for your Proxmox server. Once this is complete, you will see an IP address that the server gives you so you can access the web interface of the server. Proxmox runs on port 8006 so to get to the web interface you will type [*https://ipaddress:8006*](https://ipaddress:8006) into the internet browser of your choice. Once in the web interface it will ask you to login using the credentials that you have previously setup for the server. Once in Proxmox, you will want to go to the “local” tab, and select the “ISO Images options”. Here you will upload any ISO images that you want to be virtual machines on your Proxmox server. Once added, you are able to move onto the next step to finish setting up your Proxmox server. The next step of setting up your Proxmox server is to select the node that you want to work on and select the “Create VM” option in the top right. You will select the node you want the machine to be in and give it a machine ID. You will also give the VM a name, while ignoring the resource pool options as this doesn’t matter for the setup. After hitting next you are greeted with an OS page. On this page you will pick what storage to use and then what ISO image to use as well. Here you can also specify what OS it is running. After this stage you can edit the rest of the options to how you want it by giving it more or less memory and other settings that can make your machine run better. Once you finish this the VM will be added to your node on the left side and you have finished setting up your Proxmox server.

## 

## 2.3 Setting Up Active Directory

In order to setup Active Directory, you will need to start up a domain using Windows Server 2016 or later. This version of Windows Server matters as any version less than this one is more prone to security risks. Once you have a domain setup, you are going to have to download Active Directory and attach it to the domain that you have setup. Within Active Directory, you can create users and groups along with their credentials to create authentication and permissions for certain users. You should have an admin group that can login to the web application and view the admin page of the web application and a user group which can view the user page of the web application. These permissions are set within the code depending on what groups you have and what permissions these groups contain.

## 2.4 Setting Up Bash Scripts

* Start by populating the Proxmox.config with the correct:
  + Username(username@pam)
  + Password
  + Host(Proxmox server IP address)
  + Node name that virtual machines sit in(default is pve)
* Once you populate the configuration file, you will be all set up for calls to your own Proxmox server.

# 3 User’s Manual

## 3.1 User Authentication Webapp View

Upon entering the site by browsing to the appropriate address of the site, Proxmox will be visibly there to allow authentication. The user is limited to the function of logging into the site only. If the user is marked as an admin, then the user will load into the Admin Webapp View, otherwise they will load into the User Webapp View.

## 

## 3.2 User Webapp View

The user screen can see the available machines, as well as their account name. They can choose to revert any box available to them as well as view the machine’s info as provided through the Proxmox machine settings. They can also view their profile by clicking the profile page. They can also click logout to logout of the session.

## 

## 

## 3.3 Admin Webapp View

The admin screen has access to change the power state of the machine as well as revert boxes back. They can also click logout to logout of the session.

# 

# 4 Troubleshooting

## 4.1 Bash Script Troubleshooting

* How to troubleshoot if scripts are not executing
  + Verify the installation is on a bash enabled machine such as a Linux distribution or mac.
  + Verify that the Proxmox.config file has correct login information.

## 4.2 Proxmox Server Troubleshooting

* How to troubleshoot server connection issues
  + Verify Proxmox server is up and running
  + Verify credentials and host ip is configured in Proxmox.config
  + Verify the firewall is not preventing the connection

## 4.3 Web Application Troubleshooting

* What to do if virtual machines in Proxmox aren’t showing up in the web application?
  + Make sure the IP address in the Proxmox.config configuration file matches Proxmox server’s IP address.
  + Make sure the username and password are correct for the specified Proxmox server inside of the Proxmox.config configuration file.
  + Make sure the username is set up as username@pam inside of the Proxmox.config configuration file.