# **Document Function:**

* Describe the testing process and outcome for each version of all of the setup scripts that were written to automate the installation and setup of the servers by request of Dr. Patel in sprint 2.

# **Testing Methodology Steps:**

* The below method of testing provided the most complete and accurate results for testing the scripts however, this process was very time consuming.

1. Script test run
2. If script failed to make proper changes to the system, the system must be reloaded from scratch.
   1. Steps include reformatting of the complete operating system
   2. Update the operating system to the latest version and its pre-installed applications / dependencies.

# **Node-Red Server Script Issues and changes:**

* V1:
  + Method:
    - 3 script files run in order from 1 to 3
      * Sup1
        + Update OS
        + Change pi users home folder permissions
        + Use cat command to update config file for Node red

cat <<EOT >> /home/pi/.node-red/settings.js

* + - * Sup2
        + Install / update Node-Red twice per manufacturers installation instructions
        + Use NPM commands to install packages
      * Sup3
        + Enable node red service to start with the startup of the system.
  + Issues:
    - The config file would not deploy properly
      * Not properly inserting data into the config file.
      * Config file not being created pre install
      * npm node red packages not installing
* V2:
  + Changes:
    - found that I do not need to separate the commands
    - npm command not running because ‘Npm’ vs ‘npm’
  + Method:
    - 1 script file
      * Sup1
        + Update OS
        + Change pi users home folder permissions
        + Use cat command to update config file for Node red

cat <<EOT >> /home/pi/.node-red/settings.js

* + - * + Install / update Node-Red twice per manufacturers installation instructions
        + Use npm commands to install packages
  + Issues:
    - The config file would not deploy properly
      * Not properly inserting data into the config file.
      * Config file not being created pre install
    - npm installing software as root rather than pi
      * packages will now show up in Node-Red because it is booted as pi user rather than root \* different installation directory apparently
* V3:
  + Changes:
    - Moved installation of node red before settings change script
    - Removed npm. Cant get it to work properly. Needs to be run inside node red gui to function as pi user
  + Method:
    - 1 script file
      * Sup1
        + Update OS
        + Change pi users home folder permissions
        + Install / update Node-Red twice per manufacturers installation instructions
        + sudo systemctl enable nodered.service
        + sudo systemctl start nodered.service
        + rm -f /home/pi/.node-red/settings.js
        + Use cat command to update config file for Node red

cat <<EOT >> /home/pi/.node-red/settings.js

* + - * + Use npm commands to install packages
  + Issues:
    - Config file is now applied but contents still not working properly.
* Final:
  + Changes:
    - Changed method of settings automatic deployment
  + Method:
    - 1 script file with supporting files
      * Sup1
        + Update OS
        + Change pi users home folder permissions
        + Install / update Node-Red twice per manufacturers installation instructions
        + Enable node red service
        + rm -f /home/pi/.node-red/settings.js
        + cp "/home/pi/Desktop/nrset/settings.js" /home/pi/.node-red/settings.js
        + sudo systemctl start nodered.service
        + reboot

# **LAMP Server Script Issues and changes:**

* V1:
  + Method:
    - Single script file with supporting files
      * SL1
        + Update OS
        + Install mysql server
        + Install apache2
        + A2enmod rewrite
        + Install libapache2
        + Install phpmyadin
        + \*prep for more setting config changes in next revision
  + Issues:
    - None
* V2:
  + Changes:
    - Added more steps + second config file
  + Method:
    - SL1
      * + Update OS
        + Install mysql server
        + Install apache2
        + A2enmod rewrite
        + rm -f /etc/apache2apache2.conf
        + cp "/home/pi/Desktop/SQLAMP/apache2.conf" /etc/apache2/apache2.conf

* + - * + systemctl restart apache2
        + Install libapache2
        + Install phpmyadin
        + rm -f /etc/mysql/mariadb.cnf
        + cp "/home/pi/Desktop/SQLAMP/mariadb.cnf" /etc/mysql/mariadb.cnf
  + Issues:
    - Removes the ability to add a user to the database through cli….
    - Working on separating script to two scripts.
* V3:
  + Changes:
    - Added manual intervention for end of first script. Must enter database information manually first before changing database settings.
  + Method:
    - SL1
      * sudo rm -f /etc/mysql/mariadb.cnf
      * sudo cp "/home/pi/Desktop/SQLAMP/mariadb.cnf" /etc/mysql/mariadb.cnf
      * sudo rm -f /etc/apache2apache2.conf
      * sudo cp "/home/pi/Desktop/SQLAMP/apache2.conf" /etc/apache2/apache2.conf
      * sudo apt-get update
      * sudo apt-get upgrade -y
      * sudo apt-get install mysql-server python-mysqldb -y
      * sudo apt-get install apache2 -y
      * a2enmod rewrite
      * apt-get install php libapache2-mod-php -y
      * apt-get install phpmyadmin –y
    - SL2
      * sudo su
      * #Enter below here manually
      * #mysql -u root -p
      * #GRANT ALL ON \*.\* TO 'nodered' @'192.168.1.%' IDENTIFIED BY 'nodered' with grant option;
      * rm -f /etc/mysql/mariadb.cnf
      * cp "/home/pi/Desktop/SQLAMP/mariadb.cnf" /etc/mysql/mariadb.cnf
      * Sudo /etc/init.d/mysql restart
  + Issues:
    - Accidently left in the below commands as first steps
      * sudo rm -f /etc/mysql/mariadb.cnf
      * sudo cp "/home/pi/Desktop/SQLAMP/mariadb.cnf" /etc/mysql/mariadb.cnf
* Final:
  + Method:
    - Two step scripts plus intervention
      * ST1.
        + sudo rm -f /etc/apache2apache2.conf
        + sudo mkdir -p /etc/apache2/
        + sudo cp "/home/pi/Desktop/SQLAMP/apache2.conf" /etc/apache2/apache2.conf
        + sudo apt-get update
        + sudo apt-get upgrade -y
        + sudo apt-get install mysql-server python-mysqldb -y
        + sudo apt-get install apache2 -y
        + a2enmod rewrite
        + apt-get install php libapache2-mod-php -y
        + apt-get install phpmyadmin –y
      * User intervention to run SQL commands in setup documentation
      * ST2
        + rm -f /etc/mysql/mariadb.cnf
        + cp "/home/pi/Desktop/SQLAMP/mariadb.cnf" /etc/mysql/mariadb.cnf

The below were used to help trouble shoot and change my scripts accordingly

Sources:

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https://ubuntuforums.org/showthread.php?t=48813

http://www.yourownlinux.com/2015/04/sed-command-in-linux-append-and-insert-lines-to-file.html