

Script started on Mon 16 Jul 2018 09:35:20 AM EDT

```
root@raspi3:/opt# date
Mon Jul 16 09:35:26 EDT 2018
```

```
root@raspi3:/opt# lsb_release -a
No LSB modules are available.
Distributor ID: Raspbian
Description:    Raspbian GNU/Linux 9.4 (stretch)
Release:        9.4
Codename:       stretch
```

```
root@raspi3:/opt# uname -a
Linux raspi3 4.14.52-v7+ #1123 SMP Wed Jun 27 17:35:49 BST 2018 armv7l GNU/Linux
```

```
root@raspi3:/opt# pwd
/opt
```

```
root@raspi3:/opt# ls -l
total 20688
drwxr-xr-x 5 root root      4096 Jun 26 20:52 minecraft-pi
drwxr-xr-x 3 root root      4096 Jun 26 20:50 pigpio
-rw-r--r-- 1 pi  pi    21160146 Jul 16 09:34 sadmin_0.87_20180716.tgz
drwxr-xr-x 5 root root      4096 Jun 26 20:52 sonic-pi
drwxr-xr-x 7 root root      4096 Jun 26 20:22 vc
drwxr-xr-x 4 root root      4096 Jun 26 21:05 Wolfram
```

```
root@raspi3:/opt# mkdir sadmin
```

```
root@raspi3:/opt# cd sadmin
```

```
root@raspi3:/opt/sadmin# ls
```

```
root@raspi3:/opt/sadmin# tar -xzf ../sadmin_0.87_20180716.tgz
root@raspi3:/opt/sadmin#
root@raspi3:/opt/sadmin# ls
bin  cfg  dat  doc  lib  LICENSE  log  pkg  README.md  setup  sys  tmp  usr  www
root@raspi3:/opt/sadmin#
root@raspi3:/opt/sadmin# setup/setup.sh
```

SADOMEN

SADMIN Pre-installation verification v1.6

```
Checking if 'lsb_release' is installed ... Done
Checking if 'python3' is installed ... Done
All Verifications Pass ...
```

SADMIN Setup V3.3

```
Enter directory path where you install SADMIN : /opt/sadmin
SADMIN Environment variable now set to /opt/sadmin
- Line below is now in /etc/profile.d/sadmin.sh & /etc/environment
  SADMIN=/opt/sadmin
- This will make 'SADMIN' environment variable set upon reboot
- Initial SADMIN configuration file (/opt/sadmin/cfg/sadmin.cfg) in place.
```

```
-----
[SADM_HOST_TYPE]
Specify if this host is to become a SADMIN [C]lient or [S]erver.
Host will be a SADMIN [S]erver or a [C]lient [C] : s
[SADM_HOST_TYPE] set to 'S' in /opt/sadmin/cfg/sadmin.cfg

-----
[SADM_CIE_NAME]
This name will appear in the heading of the web interface and on some
report and email that SADMIN produce.
Enter your Company Name : The BatRasp
[SADM_CIE_NAME] set to 'The BatRasp' in /opt/sadmin/cfg/sadmin.cfg

-----
[SADM_MAIL_ADDR]
This field specify the email address of the system administrator.
It's use by SADMIN Tools to send various email and alert.
Enter System Administrator Email : webadmin@sadmin.ca
[SADM_MAIL_ADDR] set to 'webadmin@sadmin.ca' in /opt/sadmin/cfg/sadmin.cfg

-----
[SADM_MAIL_TYPE]
Default option for sending email after a script is finish.
Can be overridden by changing SADM_MAIL_TYPE in SADMIN section of your script.
[0] = Never send email.
[1] = Only send the log when script finish with error (Default)
[2] = Only send the log when script finish with success.
[3] = Always send the script log when script finish.
Enter default email type [1] :
[SADM_MAIL_TYPE] set to '1' in /opt/sadmin/cfg/sadmin.cfg

-----
[SADM_DOMAIN]
Default Domain Name to use when you will be adding a new server.
Default domain name : maison.ca
[SADM_DOMAIN] set to 'maison.ca' in /opt/sadmin/cfg/sadmin.cfg

-----
[SADM_SERVER]
Enter the name of the SADMIN Server - (MUST be a fully qualified).
- Can't be an alias in the DNS, it must be the real name of the server.
- SADMIN server in /etc/hosts must not use a loopback address, but a real IP.
- If you use /etc/hosts, put the FQDN name first like below:
    192.168.1.17    batserver.batcave.com batserver

Enter SADMIN (FQDN) server name : raspi3.maison.ca
Validating server name ...
[SADM_SERVER] set to 'raspi3.maison.ca' in /opt/sadmin/cfg/sadmin.cfg

-----
[SADM_MAX_LOGLINE]
Every time a script (python or shell script) that use SADMIN Tools is run,
it produce a log, in the dedicated directory ${SADMIN}/log.
- The name of the Log file is "[HOSTNAME]_[NAME_OF_SCRIPT].log".
- Log file are cumulative by default, but it can be overridden if you want.
- This number indicate the maximum of lines you want to keep in your log.
- Log file are trim automatically at the end of script execution.
- This help keeping our log to a reasonable size.

Maximum number of lines in LOG file [1000] :
[SADM_MAX_LOGLINE] set to '1000' in /opt/sadmin/cfg/sadmin.cfg
```

[SADM_MAX_RCHLINE]
When a (python or shell) script using the SADMIN tools start and ends, it record the date/time and the ending status of your script in what we call a RCH file ([R]eturn [C]ode [H]istory) file.

- The RCH file name are "[HOSTNAME]_[NAME_OF_SCRIPT].rch"
- They are located in the directory \${SADMIN}/dat/rch.
- RCH file are trim automatically at the end of script execution.
- It indicate the maximum of lines you want to keep in each RCH file.
- This help keeping our log to a reasonable size.
- The default value is 100 lines, this keep an history of ~50 days.

Maximum number of lines in RCH file [100] :

[SADM_MAX_RCHLINE] set to '100' in /opt/sadmin/cfg/sadmin.cfg

[SADM_GROUP]
This is the primary user group that have access to all SADMIN directories.

- All files in the \$SADMIN directories are own by this group.
- If others users need to access or used scripts located in \$SADMIN, they must be part of this group.
- The SADMIN default user group is 'sadmin'.

Enter SADMIN User Group [sadmin] :

Creating group sadmin

[SADM_GROUP] set to 'sadmin' in /opt/sadmin/cfg/sadmin.cfg

[SADM_USER]
This is SADMIN main username.

- This user will have access to all SADMIN directories & files.
- This user will become member of the SADMIN user group you just specified.
- The SADMIN default user name is 'sadmin'.

Enter the default user name [sadmin] :

Creating user sadmin

[SADM_USER] set to 'sadmin' in /opt/sadmin/cfg/sadmin.cfg

[SADM_SSH_PORT]
TCP/IP Port used for SSH.
SSH port number to connect to client [22] : 32
[SADM_SSH_PORT] set to '32' in /opt/sadmin/cfg/sadmin.cfg

[SADM_NETWORK1]
Every day SADMIN will check the IP utilisation on your network.

- The result will be visible on SADMIN network web page.
- You will be able to tell what IP are in use or not (respond to ping), and what DNS name each IP has (if any).
- It will facilitate, the clean up of your DNS and IP usage.
- Network should be specify in this form, '192.168.1.0"

Enter the network IP [192.168.1.0] :

[SADM_NETMASK1]
Specify the Netmask of the network you just specified.

- Netmask should specify the number bits use (1-30) (Default 24)

Enter the Network Netmask [1-30] [24] :

[SADM_NETWORK1] set to '192.168.1.0/24' in /opt/sadmin/cfg/sadmin.cfg

Checking SADMIN Client Package requirement

Running apt-get update... Done
Checking for perl-base ... Ok
Checking for gawk ... Installing gawk ... Done
Checking for libdatettime-perl libwww-perl ... Installing libdatettime-perl libwww-perl ... Done
Checking for bc ... Installing bc ... Done
Checking for parted ... Ok
Checking for ethtool ... Installing ethtool ... Done
Checking for openssh-client ... Ok
Checking for factor ... Installing factor ... Done
Checking for mailutils ... Installing mailutils ... Done
Checking for util-linux ... Ok
Checking for net-tools ... Ok
Checking for lshw ... Installing lshw ... Done
Checking for nmon ... Installing nmon ... Done
Checking for dmidecode ... Ok
Checking for lsb-release ... Ok
Checking for sudo ... Ok
Checking for python pip3 command ... Done
Installing python3 PyMySQL module (pip3 install PyMySQL) ... Done

Creating 'sadmin' user sudo file

- Creating SADMIN sudo file (/etc/sudoers.d/033_sadmin-nopasswd)
- Permission on sudo file changed successfully
- Ownership of sudo file changed successfully

Creating SADMIN client crontab file (/etc/cron.d/sadm_client)

- Client Crontab Permission changed successfully
- Ownership of client crontab changed successfully

Adding 'sadmin' to /etc/hosts file

Checking SADMIN Server Package requirement

Running apt-get update... Done
Checking for rrdtool ... Installing rrdtool ... Done
Checking for apache2 apache2-utils libapache2-mod-php ... Installing apache2 apache2-utils libapache2-mod-php ... Done
Checking for arp-scan ... Installing arp-scan ... Done
Checking for fping monitoring-plugins-standard ... Installing fping monitoring-plugins-standard ... Done
Checking for php php-mysql php-common php-cli ... Installing php php-mysql php-common php-cli ... Done
Checking for mariadb-server mariadb-client ... Installing mariadb-server mariadb-client ... Done

Checking Firewall Information

- Checking Firewall ... Not installed

Setup SADMIN MariaDB Database

```
ReStarting MariaDB Service - systemctl restart mariadb.service
Done
Enabling MariaDB Service - systemctl enable mariadb.service
Done
```

```
-----
[SADM_DBROOT]
You need to specify the MariaDB Database 'root' user password.
If the password isn't currently set, it will be set to the one you will enter.
If the password is currently set, we will test Database connection using it.
```

```
Enter MariaDB Database 'root' user password :
Access to Database is working ...
```

```
-----
Loading Initial Data in SADMIN Database ...
Done
```

```
-----
Checking if 'sadmin' user exist in MariaDB ...
```

```
-----
[SADM_RW_DBPWD]
This is the read/write user ("sadmin") password in the SADMIN database.
Give this password to people who you want to update server information.
```

```
Enter Read/Write 'sadmin' database user password :
Creating 'sadmin' user ... Done
```

```
-----
Checking if 'squery' user exist in MariaDB ...
```

```
-----
[SADM_RO_DBPWD]
This is the read only user ("squery") password in the SADMIN database.
Give this password to people who you want to consult server information.
```

```
Enter 'squery' database user password :
Creating 'squery' user ... Done
```

```
-----
Inserting server 'raspi3' in Database ...
Done
Creating Database Password File (/opt/sadmin/cfg/.dbpass)
```

```
ReStarting MariaDB Service - systemctl restart mariadb.service
Done
```

```
-----
Setup SADMIN Web Site
```

```
- Making sure Web Server is started - systemctl restart apache2
- Apache process user name : www-data
- Apache process group name : www-data
- Disable default apache configuration
- SADMIN Web Site enable
- SADMIN Web site configuration now in place (/etc/apache2/sites-enabled/
sadmin.conf)
- Record Apache Process Owner in SADMIN configuration (/opt/sadmin/cfg/sadmin.cfg)
- Setting Owner/Group on SADMIN WebSite(/opt/sadmin/www) ... Done
- Setting Permission on SADMIN WebSite (/opt/sadmin/www) ... Done
- Setting Permission on SADMIN WebSite images (/opt/sadmin/www/images) ... Done
- Web Server Restarting - systemctl restart apache2 ... Done
```

- Enabling Web Server Service - systemctl enable apache2 ... Done

Creating SADMIN server crontab file (/etc/cron.d/sadm_server)

- Server crontab permission changed successfully
- Ownership of server crontab changed successfully

Run Initial SADMIN Daily scripts to feed Database and Web Interface

Running Client Scripts

Running '/opt/sadmin/bin/sadm_create_sysinfo.sh' script ... Done
Running '/opt/sadmin/bin/sadm_client_housekeeping.sh' script ... Done
Running '/opt/sadmin/bin/sadm_dr_savefs.sh' script ... Done
Running '/opt/sadmin/bin/sadm_cfg2html.sh' script ... Done
Running '/opt/sadmin/bin/sadm_sysmon.pl' script ... Done

Running Server Scripts

Running '/opt/sadmin/bin/sadm_fetch_clients.sh' script ... Done
Running '/opt/sadmin/bin/sadm_daily_farm_fetch.sh' script ... Done
Running '/opt/sadmin/bin/sadm_server_housekeeping.sh' script ... Done
Running '/opt/sadmin/bin/sadm_subnet_lookup.py' script ... Done
Running '/opt/sadmin/bin/sadm_database_update.py' script ... Done

SADMIN TOOLS - VERSION sadmin_0.87_20180716 - Successfully Installed

=====

You need to logout and log back in before using SADMIN Tools,
or type the following command (The dot and the space are important)
. /etc/profile.d/sadmin.sh
This will define SADMIN environment variable.

=====

USE THE WEB INTERFACE TO ADMINISTRATE YOUR LINUX SERVER FARM

The Web interface is available at : <http://raspi3.maison.ca>
Also available at <http://sadmin.maison.ca> (if sadmin.maison.ca is in your DNS).

- Use it to add, update and delete server in your server farm.
- View performance graph of your servers up to two years in the past.
- If you want, you can schedule automatic O/S update of your servers.
- Have server configuration on hand, usefull in case of a Disaster Recovery.
- View your servers farm subnet utilization and see what IP are free to use.
- There's still a lot more to come.

=====

CREATE YOUR OWN SCRIPT USING SADMIN LIBRARIES

Create your own script using SADMIN tools templates, take a look & run them

- bash shell script : /opt/sadmin/bin/sadm_template.sh
- python script : /opt/sadmin/bin/sadm_template.py

Create your own shell script :

copy /opt/sadmin/bin/sadm_template.sh /opt/sadmin/usr/bin/newscript.sh

Modify it to your need, run it and see the result.

=====

SEE SADMIN FUNCTIONS IN ACTION AND LEARN HOW TO USE THEM BY RUNNING :

- /opt/sadmin/bin/sadmlib_std_demo.sh
- /opt/sadmin/bin/sadmlib_std_demo.py.

=====

USE THE SADMIN WRAPPER TO RUN YOUR EXISTING SCRIPT

- # \$SADMIN/bin/sadm_wrapper.sh \$SADMIN/usr/bin/yourscript.sh

=====

ENJOY !!

root@raspi3:/opt/sadmin# date

Mon Jul 16 10:14:25 EDT 2018

root@raspi3:/opt/sadmin# exit

exit

Script done on Mon 16 Jul 2018 10:14:30 AM EDT