Supermon 2 V2.0+ Installation Notes

Supermon2 Version 2.0 is an extensive update from previous versions so please pay careful attention to the changes and installation instructions. While it looks similar there are many changes under the covers. Please see the Version 2.0 changes manual link. Because of this your old supermon2 directory, if it exists, will be renamed old-supermon2 and the new version 2.0 will assume the supermon2 directory name. If you have never loaded Supermon2 before a directory of that name will be created and your browser access should be directed to supermon2 instead of supermon.

Note that if you already have the manager user/pass setup for Allmon2 or a previous installation of Supermon, or Supermon2 you do not need to repeat that for this new version of Supermon2. Both can use the same manager and password although if desired you could add a different user/pass to the manager.conf file for each one. If you have already created a manager user and password and you intend to use it for Supermon2 you can skip step 1 below.

Note that starting in version 2.0 ALL user files are in the supermon2/user_files directory. NO user configurable files are in the supermon2 directory. Some parameters in global.inc as well as other files have changed! See the examples in the setup instructions below. ALL files in the user_files directory are protected from future updates.

The update preserves your old Supermon2 including your configured files and makes way for the new Supermon2 to be installed under the same supermon2 directory. If you want to run the old version you would simply use old-supermon2 instead of Supermon2 in your browser string. Eventually when the new Supermon2 is setup to your liking you should delete the entire old-supermon2 directory. To do this, but only when you are ready -

cd /*srv*/http

rm -rf old-supermon2

NEVER MIX FILES other than referring to your old settings (allmon.ini, global.inc, etc.) in old-supermon2 to update those files in the user_files directory in the new Supermon2 !!! Beware that some parameters have changed so do not wholesale copy old files like global.inc over to the new Supermon2, instead use the old files as a reference to populate the new ones.

Downloading Supermon2 V2.0

Supermon2 V2.0 can be downloaded using wget. Login to your Hamvoip Pi and select the bash shell, item 9 of the admin menu. then:

cd /root

wget https://crompton.com/hamradio/supermon2/supermon2-V2.0.tar

chmod 750 supermon2-V2.0.tar

Run this as a normal script… DO NOT ATTEMPT TO UNTAR IT!

./supermon2-V2.0.tar

You should now have Supermon2 installed and can continue with the setup. Remember if you previously has supermon2 you still have all your old files renamed to **old-supermon2** in the **/srv/http** directory and, I repeat again because it is important, if you already have a working Supermon2 then you will want to reference (not wholesale copy) the old files (global.inc, allmon.ini, etc.) to the new files in the user_files directory. Since many things have changed especially in the global.inc file it is not a good idea to just copy all from the old files.

What if I want to go back to the old version

If you previously had been running Supermon (not Supermon2) it is still there untouched. If you had a previous Supermon2 directory it has been renamed to old-supermon. in the unlikely case you wanted to return to the old version you could either delete the supermon2 directory and move the old-supermon2 directory back to supermon2 or if you wanted to keep both but use the old then rename the supermon2 directory to supermon2-2.0 and then move the old-supermon2 directory to supermon2.

Reinstalling

The install program will sense that version 2.0 is already installed and ask if you want to reinstall. Only do this if necessary as it will wipe out any changes you made in your config files in the user_config directory. It does however backup your old Supermon2 version 2.0 to the **supermon2.bak** directory and your previous config files will be there. It only saves the last copy so if you reinstalled multiple times in a row the supermon2.bak file would only have the previous copy.

Setup

1. Create a password for Supermon2 to login to the Asterisk Manager

Enter the /etc/asterisk directory

cd /etc/asterisk

Edit the manager.conf file

nano manager.conf

Add a secure password where it shows 'secret =' under the [admin] stanza, for example:

secret = xxxxx

Enter you desired password in place of the xxxxx above.

Restart asterisk.

astres.sh

If you intend to use Supermon2 to control nodes other than those on the same RaspberryPi that Supermon2 is running on also change the bindport setting from the default 127.0.0.1 to 0.0.0.0

In this case also see the security note at the end of this document.

2. Configure Supermon with your node number and Asterisk Manager password

cd /srv/http/supermon2/user_files

Edit the allmon.ini file

nano allmon.ini

Change the line's with 1998 to your node number. Also change the passwd= line and replace the xxxxx with the password your chose in step 1 or have already assigned in the manager.conf file. You will probably do other editing in this file later but for now this will get you going.

3. Create a password for you and possibly other users to login to Supermon

Auto method in Supermon2 Version 2.0+

This version has a new script to set passwords called **set_password.sh.** To run this script cd to the user_files directory.

cd /*srv/*http/supermon2/user_files

./set_password.sh

Make a selection to create or add a new password. You will then be prompted to set your password. You can also clear all passwords. In version 2.0+ where you can have many users this will automate the process and show you the current users.

Manual password setup method

Change to the Supermon2 directory

cd /srv/http/supermon2

Recommend removing any existing .htpasswd file -

rm .htpasswd

Add an htpasswd file

htpasswd -cB .htpasswd <userID>   (subsequent additional entries use just -B, do NOT enter < or >)

Supply a password of your choice when prompted. You will be asked twice.

<userID> is the login ID and can be any username you would like to assign; your callsign or admin for example. **DO NOT enter the < or >. Do NOT use a ! (exclamation) in the password**.

You can have more than one login and password. If assigning additional passwords the 'c' create file switch must be dropped. In this case use:

htpasswd -B .htpasswd <userID>

You have now configured Supermon2 enough to start it in your browser and login. To start Supermon2 enter your server's IP address/supermon2 in your browser address bar.

If your servers IP address is 192.168.1.100 then:

http://192.168.1.100/supermon2 - assumes port 80

If you are using a different port - http://192.168.1.100:PORT/supermon2 - where PORT = your port number.

Additional items to configure

There are several Supermon2 parameters that you can configure to your liking.

To edit the following files you have the choice of entering Supermon2 and using the configuration editor button if the files are writable or doing it manually in Linux. File permissions are set for security reasons if you make Supermon2 available to the outside world. Be aware that changing these permissions could make you system vulnerable to hackers. You also have the option in Version 2.0+ to limit which users can access the configuration editor.

When you run Supermon2 the first time these parameters will have generic settings. The Hamvoip software initializes with two nodes configured, 1998 and 1999. These are temporary private nodes. The Hamvoip setup program configures the first node, 1998 to your real node number. 1999 is left as a spare pseudo node that if desired could be configured as a second node. Supermon2 is initially configured for these two nodes 1998 and 1999. 1998 should be replaced with your first node number and 1999 with a second if it exists. More than two nodes can be configured if they exist. These nodes could be local, on the same Pi as Supermon2, On another computer on your LAN, or anywhere on the Internet.

allmon.ini

This was already configured in your initial setup above with your primary (first) node number but this shows more detail and how you can add additional nodes. If you had a second registered node on this server you would replace the 1999's below with its node number.

To edit manually use:

'nano /srv/http/supermon2/user_files/allmon.ini'

To view using the Supermon2 editor select '**Configuration Editor**' then 'Supermon2/**allmon.ini**' on the dropdown menu.

Here is an example allmon.ini file. The node numbers, passwords, and ip addresses are fictitious . This shows how local nodes running on the same Pi as Supermon2, nodes on other computers but on the same LAN, and remote nodes out on the Internetcan be controlled. The user and passwd must match the manager.-conf user/password for the defined host.

Note that node numbers, IP addresses, etc. in this example are fictitious. Use your own values!

; This is the main allmon.ini file
; Located in /srv/http/supermon2/user-files
; any line started with a semicolon or after a
; semicolon is a comment. It is often good to
; add comments to your files to remind you
; of things you have done.

; This is a node running on the same Pi as Supermon2
; In this case you always use 127.0.0.1 at the IP address
[70225]
host=127.0.0.1:5038
; Manager.conf user/pass
user=admin
passwd=xxxxx
menu=yes
system=Nodes
hideNodeURL=no
; Example if using broadcastify – will appear in node display header
listenlive="https://www.Broadcastify.com/listen/feed/xxxxx/web"
; Example archive directory – will appear in node display header
archive="http://70225.ip.hamvoip.org:27189/supermon2/custom/70225"

; This node in on the local LAN on a different Pi.
[70014]
host=192.168.1.10:5038
user=admin
passwd=xxxx
menu=yes
system=Nodes
hideNodeURL=no
; Example lsnodes – link in node display header
lsnodes="http://192.168.1.10:25673/cgi-bin/lsnodes_web?node=70014"

; Example – this node is local LAN on a different Pi.
[70015]
host=192.168.1.11:5038
user=admin
passwd=xxxx
menu=yes
system=Nodes
hideNodeURL=no

lsnodes="http://192.168.1.11/cgi-bin/lsnodes_web?node=70015"

; Example – this node is on the same Pi as Supermon2
[70561]
host=127.0.0.1:5038
user=admin
passwd=xxxx
menu=yes
system=Nodes
hideNodeURL=no

; Example – this node is on the same LAN but a different Pi.
[70291]
host=192.168.1.12:5038
user=admin
passwd=xxxx
menu=yes
system=Nodes
hideNodeURL=no
lsnodes="http://192.168.1.12/cgi-bin/lsnodes_web?node=70291"

; Example – This node is remote out on the Internet. Using Hamvoip
;   to lookup the IP addresses based on node number.
[70961]
; Note manager IP address changed from default
host=70961.ip.hamvoip.org:23495
user=admin
passwd=xxxx
menu=yes
system=Nodes
hideNodeURL=no
lsnodes="70961.ip.hamvoip.org/cgi-bin/lsnodes_web?node=70961"

; Example – local private node
[1600]
host=192.168.1.15:5038
user=admin
passwd=xxxx
menu=yes
system=Nodes
hideNodeURL=yes
lsnodes="http://192.168.1.15/cgi-bin/lsnodes_web?node=1600"

; Example – remote private node
[1601]
host=173.62.241.95:5038
user=admin
passwd=xxxx

```
menu=yes
system=Nodes
hideNodeURL=yes
lsnodes="http://142.24.81.176/cgi-bin/lsnodes_web?node=1601"
```

;Example – following display as drop down options under Display Groups
;   This is a way to segregate selected nodes and display only those
;   selected..

[All Nodes]
```
system=Display Groups
nodes=70225,70014,70015,70561,70291,70879,70961,1600,1601
menu=yes
```

[Hubs]
```
system=Display Groups
menu=yes
nodes=70225,70014,70015
```

[Public Nodes]
```
system=Display Groups
menu=yes
nodes=70291,70879,70961
```

[Private Nodes]
```
system=Display Groups
menu=yes
nodes=1600,1601
```

[Echolink Node]
```
system=Display Groups
menu=yes
nodes=70561
```

; Example – this displays as a link in the header bar
;   Others can be added as desired.

[HAMVOIP]
```
url="http://HamVOIP.org>"
menu=yes
```

; End allmon.ini

If no menu statement is entered in a stanza or entered as menu=no it will NOT be displayed. To display it MUST be menu=yes in that stanza.

See the **/srv/http/supermon2/user-files/allmon.ini** example files for more examples including for RTCM's. **The voter.ini file is no longer used in Allmon2 or Supermon2.** All node information is stored in allmon.in-i.php for Allmon2 or allmon.ini for Supermon2.

global.inc

global.inc contains the user specific information that is displayed on the Supermon screen. Your call, name, location, and what is displayed on various parts of the screen. It also has settings for display colors, background color, welcome messages, etc. Some of the settings show HTML code inserted. This is not necessary but can be used to add formatting of your liking.

To edit manually use '**nano /srv/http/supermon2/user_files/global.inc**'
To view using the Supermon editor select '**Configuration Editor**' then '**Supermon2/Configuration**' on the dropdown menu.

Change the "**bolded**" items below to your settings. Other items can be edited to change displayed text, select a different background image or color and set image display size. Note that URL's that end in a ">" character open in a new window. Those without ">" open in a replacement window.

```
<?php
// Supermon2 global.inc file
// Set the values below to your parameters
// ONLY change text between quotes
// Remove leading // before $ to
// make variable active.
// MAKE SURE there is a terminating semicolon!
// Change ONLY data between the quotes.
//
// THIS IS AN EXAMPLE FILE. Preserve it so you can go back
// and reference it if needed. Make your changes in the
// accompanying global.inc file.
//
// These messages if defined appear below the header and above the node grid
// Welcome Message when not logged in
//$WELCOME_MSG="<p style='margin-top:1em;'><center><b>Welcome to my Supermon2 page</b><br><br>You can use any valid html code here<br>
//including color changes, links, email contacts<br>or anything else you want to advertise</center></p>";
//
// Welcome message when logged in
//$WELCOME_MSG_LOGGED="<p style='margin-top:1em;'><center><b>and likewise you can put info here for login guests</b></p>";
//
// Your callsign
$CALL = "CALL";
//
// Your name
```

```
$NAME = "NAME";
//
// Your location
$LOCATION = "<span style=\"color: #ff0000\">LOCATION</span>";
//
// Second line header title
$TITLE2 = "RPi2-3-4 Node";
//
// Third line header title
$TITLE3 = "Allstar/IRLP/Echolink System Manager";
//
// Background image -  image located in user_files directory
// By default it is a symbolic link to "philadelphia.jpg"
// called background.jpg. To change remove the symbolic
// link and make a new one to your image file
//
// Leaving $BACKGROUND null "" results in BACKGROUND_COLOR (below)
$BACKGROUND = "user_files/background.jpg";
//
// Background color if no image
$BACKGROUND_COLOR = "blue";
//
// Height of background - matches image height
$BACKGROUND_HEIGHT = "145px";
//
// Maximum number of connections to show per node
// undefined or "0" = show all
//$Displayed_Nodes = "0";
//
// Show Connection totals (xx of yy)
// "0" or undefined = no display, "1" = display
//$Display_Count = "0";
//
// Show ALL or Omit Never Keyed
// "0" = Omit Never Keyed, "1" or undefined = Show All
//$Show_All = "1"
//
// Prefix to Name in Page title. Often Supermon
// "Node# -"
$SMSERVERNAME = "";
//
// NOTICE LOCALZIP for weather now defined in
// /usr/local/sbin/supermon/node_info.ini
// See manual
//
// Refresh delay as of Supermon2 V1.06 is no longer needed
// or supported.
//
```

```
// Enable [Database] button For quick review of entire AllStar
// internal database.
//
$DATABASE_TXT = "/tmp/database.txt";
//
// The following commands are obsolete starting at Supermon2 V1.08
// and no longer used. See streaming and arching howto
//
//  $STREAMING_NODE
//  $ARCHIVING_NODE
//  $ARCHIVE_DIR
//  $ARCHIVE_URL
//
// When your RPi2-3 system is running on a LAN network with a router/firewall,
// you do NOT need this variable set!
// If your RPi2-3 system is directly connected to the Internet without a firewall/router,
// Supermon can hang trying to get both the WAN and LAN addresses.
// Set this variable to "yes" to disable checking for a LAN address and report only the
// WAN address. This will eliminate the hanging of Supermon in this case.
//
$WANONLY = "";
//
// Display Background Color
// If not defined it is white
// Use name or code, Google html color
// Shades of gray look best
//
$DISPLAY_BACKGROUND = "#abb2b9";
//$DISPLAY_BACKGROUND = "black";
//
// Add logos to header - See manual
// for more info
//
// Image file name
//$LOGO_NAME="";
//
// Size adjustment
//$LOGO_SIZE="15%";
//
// Logo Positioning
//$LOGO_POSITION_RIGHT="12%";
//$LOGO_POSITION_TOP="20%";
//
// Logo URL
//$LOGO_URL="http://www.someplace.org/>";
//
// Add URL's for node info.
//
```

// Add header CALL URL
//$MY_URL = "**http://someplace.org/>**";
//
// Each displayed node can have a url
// Node URL replace with $URL_node
// where node is a valid node.
//**$URL_1998** = "**https://someplace.org**";
//**$URL_1999** = "**http://someplace.org>**";
//
// Log Supermon2 login/out sessions
// Set to true of false
$SMLOG = "**false**";

?>

TITLE_LOGGED and **TITLE_NOT_LOGGED** the FIRST line above in the Photo are are not user con-
figurable. **TITLE2** is the fourth line. **TITLE3** is the last line, displayed when logged in. The CALL and Lo-
cation lines are defined in global.inc and will show as above until configured. **BACKGROUND** defines the
image file and **BACKGROUND_COLOR** defines the solid color background if the image file is not
present. **BACKGROUND_HEIGHT** in px defines the displayed height of the image which should match
the actual image height.
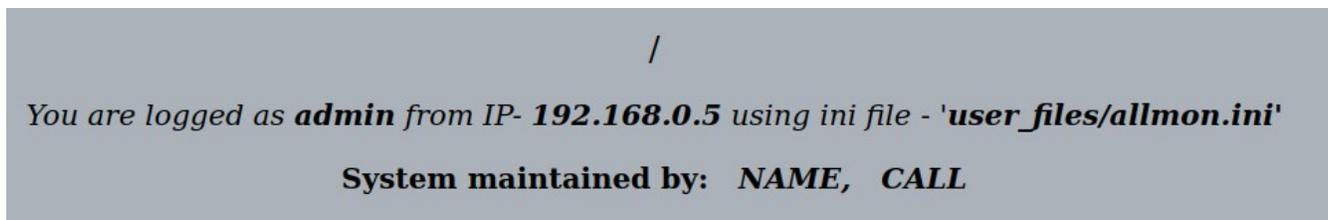
This is the footer line that displays at the bottom of the Supermon page and shows a rotating indicator of
time updates, the username you are logged as, the from IP address, and the ini file that is being used.
name and **call** are as entered in the user_files/global.inc file.

Logging Configuration

In order for logging to work you must add the following statements to your /etc/asterisk/rpt.conf file.
In later firmware installs of the Hamvoip code these lines may already be in your rpt.conf file but com-
mented out with a beginning semicolon. To activate remove the semicolon and restart Allstar.

connpgm=/usr/local/sbin/supermon/smlogger 1
discpgm=/usr/local/sbin/supermon/smlogger 0

These statements are added or activated in the node section for **EACH** defined node on your Allstar servers rpt.conf file that you desire to log.

Protected Files

All files in the supermon2/user_files directory are protected from future update over writing. Only the files in this directory need to be saved for backups.

Server Monitoring

Server monitoring is the ability to see key items about your local and remote Raspberry Pi's like CPU temperature and memory usage. This is displayed at the top of the node windows. To setup server monitoring of your local and remote Hamvoip servers see the Supermon2 Server Monitoring instructions. If you previously had this setup with a prior version of Supermon2 the ast_var_update.sh script located in /usr/local/sbin/supermon will be updated to version 3. The node_info.ini files in the same directory will also be created if it did not previously exist. Since you can monitor all of your nodes from one copy of Supermon2 other local or remote nodes that you want to monitor also need these two files. While you could copy them over to other systems manually the easiest way would be to download Supermon2 on all your nodes even it you do not intend to use it via the browser and then configure as per the Supermon2 Server Monitoring instructions.

Manager Security

The Asterisk manager is not secure and when managing remote systems over the internet you should use a firewall or VPN to add security. Future versions of Supermon2 will eliminate this problem by using encrypted memcache to transfer data but until then here is how to add a firewall entry on your Pi.

Securing your node when using the manager remotely

The Asterisk manager used by Allmon2 and Supermon2 is notoriously insecure when allowed to be accessed directly on the Internet from outside of your LAN. In strictly local applications of Supermon2 this is not an issue. In the manager.conf the bind address is usually set to bindaddr = 127.0.0.1 meaning only allow access on the same computer or server. But often a user wants to view and control multiple servers within their LAN. In this case you set the bindaddr=0.0.0.0 meaning access is allowed outside of the server. Then rather than have multiple Supermon2 browser sessions running you can integrate all of your servers on one Supermon2 browser window. To do this you would reference the node, Local_IP_address:5038, user, and password for each server in the allmon.ini file. This would not be considered insecure if you were nat'ed through a router and did not have port 5038 forwarded from anywhere outside of your LAN.

But what happens when you want to manage a server not on your LAN and somewhere out on the Internet. Now you would have to port forward the manager port 5038 so you could access it at that remote computer. Some would say just change the port but doing that (obscurity) while it is better than nothing is poor security

protection. A port is still there open to the world and available to hackers. A better way is to use iptables to firewall the port to from a specific IP address. That is only your IP address would be allowed in at the remote end. Here is a sample script that would accomplish this on a hamvoip system. It also shows how to block ssh except from selected IP addresses. Note this script must be customized to your application and it only works if you have either a static IP address, a dyn-dns name, or use the NODE.ip.hamvoip.org lookup from a registered node.

Begin script below

```
!/bin/bash
# Script to block a ports based on incoming IP address
# This script should be run by cron. It detects changes in the remote IP address
# and updates IP tables. Run at least once a day or as often as once every 10 minutes.
# This depends on how often your IP address is likely to change. Depending on
# your situation BOTH the end you are controlling and your end need to do this and
# you also need to change manager.conf to the 0.0.0.0 address.

# This also shows an example of blocking of your ssh port

IPT=/sbin/iptables

AMI=5038  # This port could be changed if desired. Must be changed in manager.conf and allmon.ini
SSH=42189  # some random unused port number you select other than the standard 222

### Flush any existing rules, preparing to reload...

$IPT -F

$IPT -t nat -F

$IPT -t mangle -F # ignore error here if mangle module isn't loaded

$IPT -X # deletes every non-built-in chain in the table

# Must have localhost:

$IPT -A INPUT -p tcp -s 127.0.0.1 --dport $AMI -j ACCEPT
$IPT -A INPUT -p tcp -s 127.0.0.1 --dport $SSH -j ACCEPT

# Local LAN - covers all clients in this case in 192.168.0.x
# Use your LAN IP here
$IPT -A INPUT -p tcp -s 192.168.0.0/16 --dport $AMI -j ACCEPT
$IPT -A INPUT -p tcp -s 192.168.0.0/16 --dport $SSH -j ACCEPT

# or just a specific machine on your LAN:
#$IPT -A INPUT -p tcp -s 192.168.0.6 --dport $AMI -j ACCEPT
#$IPT -A INPUT -p tcp -s 192.168.0.6 --dport $SSH -j ACCEPT
```

```
# Client from internet, fictitious node 78189 – Replace with your remote client
# node. This assumes you have a Hamvoip node running as a client or any
# computer on a nat'ed LAN with this Hamvoip node running on it.
IP=$(getent hosts 78189.ip.hamvoip.org | awk '{ print $1 }')
if [ "$IP" != "" ]; then
   $IPT -A INPUT -p tcp -s "$IP" --dport $AMI -j ACCEPT
   $IPT -A INPUT -p tcp -s "$IP" --dport $SSH -j ACCEPT
fi

# Domain name from Internet – works for clients not running Hamvoip
# Any computer behind this public domain name would be accessible.
IP=$(getent hosts some.domain.name | awk '{ print $1 }')
if [ "$IP" != "" ]; then
   $IPT -A INPUT -p tcp -s "$IP" --dport $AMI -j ACCEPT
   $IPT -A INPUT -p tcp -s "$IP" --dport $SSH -j ACCEPT
fi

$IPT -A INPUT -p tcp --dport $AMI -j DROP
$IPT -A INPUT -p tcp --dport $SSH -j DROP

# $IPT -L  # use this command to display FW settings after running script
# END Firewall Script
```

Create a file with the above script, comment sections that do not apply in your case and change the IP address, domain names, etc. to match yours. make it executable and run it periodically with a cron if you are defining IP addresses in the rules that could change. Lets call the file: FWrules.sh and put it in the /etc/asterisk/local directory. then make it executable:

chmod 750 Fwrules.sh

Before you run it make absolutely sure you have things right. Then run it manually:
/etc/asterisk/local/Fwrules.sh

Check if you can create an ssh session to your Pi. f not you have something wrong in your script. If you are able to ssh in also check that Supermon2 is able to reach the manager. If you get locked out of logging after running manually you can either reboot and log back in which will reset things since you did not make this permanent as yet or use a keyboard and mouse to login and then correct the problem and try again. If everything seems to be working you can create a cron to make this permanent:

crontab -e

(add in a line at the end of what is currently there)

*/30 * * * * /etc/asterisk/local/Fwrules.sh

(Save and exit)

This will check for any IP address changes every 30 minutes and refresh the firewall rules.

You can check the journal to see if it runs properly every half hour - journalctl -f
and - iptables -L to view the current settings.