ESENSORS

Specializing in Network Sensors

Installation Guide

Nagios
Websensor
ES11

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Setup Paths

Nagios

Available at nagios website http://www.nagios.org/download

Websensor

Plugin: EM01CD\EM01B_Websensor\Plugin_Linux

Config File: EM01CD\EM01B_Websensor\Plugin_Linux\Nagios_Config

ES11

Plugin: EM01CD\ES11_FloodSensor\Plugin_Linux

Config File: EM01CD\ES11_FloodSensor\Plugin_Linux \Nagios_Config

Errata

File Name	Path	Update
README	EM01CD\EM01B_Websensor\ Plugin_Linux\MRTG_em01	Description: *This plugin reports the EM01 Webensor Data. This plugin is written mainly for Nagios, but can be easily used for other software too.*
es06.cfg	EM01CD\ES06_HighLevelIO\ Plugin_Linux\Nagios_Config	Under *define service{* Change *hostname* to *host_name*
es11.cfg	EM01CD\ES11_FloodSensor\ Plugin_Linux\Nagios_Config	Under *define service{* Change *hostname* to *host_name*

I. Nagios Installation on Linux

Make sure your linux repositories are updated you've installed the following packages on your Ubuntu installation before continuing.

- Apache 2
- PHP
- GCC compiler and development libraries
- GD development libraries

You can use *apt-get* to install these packages by running the following commands:

sudo apt-get install apache2
sudo apt-get install libapache2-mod-php5
sudo apt-get install build-essential

sudo prefix is to specify that it is an administrative task, in other linux you can simply login as root (Administrator) and carry on without sudo prefix. However its different for different distributions.

With Ubuntu 6.10, install the gd2 library with this command:
sudo apt-get install libgd2-dev

With Ubuntu 7.10, the gd2 library name has changed, so you'll need to use the following:
sudo apt-get install libgd2-xpm-dev

1) Create Account Information

Become the root user.

sudo -s

Create a new *nagios* user account and give it a password.
/usr/sbin/useradd -m -s /bin/bash nagios
passwd nagios

On older Ubuntu server editions (6.01 and earlier), you will need to also add a *nagios* group (it's not created by default). You should be able to skip this step on desktop, or newer server editions of Ubuntu.

/usr/sbin/groupadd nagios
/usr/sbin/usermod -G nagios nagios

Create a new *nagcmd* group for allowing external commands to be submitted through the web interface. Add both the nagios user and the apache user to the group.

/usr/sbin/groupadd nagcmd
/usr/sbin/usermod -a -G nagcmd nagios
/usr/sbin/usermod -a -G nagcmd www-data

2) Download Nagios and the Plugins

Create a directory for storing the downloaded files.

mkdir ~/downloads
cd ~/downloads

Download the source code tarballs of both Nagios and the Nagios plugins (visit
http://www.nagios.org/download/ for links to the latest versions). These directions were tested with
Nagios 3.2.0 and Nagios Plugins 1.4.13

3) Compile and Install Nagios

Extract the Nagios source code tarball.
cd ~/downloads
tar xzf nagios-3.2.0.tar.gz
cd nagios-3.2.0

Run the Nagios configure script, passing the name of the group you created earlier like so:
./configure --with-command-group=nagcmd

Compile the Nagios source code.

make all
Install binaries, init script, sample config files and set permissions on the external command directory.

make install
make install-init
make install-config
make install-commandmode
Don't start Nagios yet - there's still more that needs to be done...

4) Customize Configuration

Sample configuration files have now been installed in the */usr/local/nagios/etc* directory. These sample
files should work fine for getting started with Nagios. You'll need to make just one change before you
proceed...

Edit the */usr/local/nagios/etc/objects/contacts.cfg* config file with your favorite editor and change the
email address associated with the *nagiosadmin* contact definition to the address you'd like to use for
receiving alerts.

gksudo gedit /usr/local/nagios/etc/objects/contacts.cfg

5) Configure the Web Interface

Install the Nagios web config file in the Apache conf.d directory.
make install-webconf

Create a *nagiosadmin* account for logging into the Nagios web interface. Remember the password you
assign to this account - you'll need it later.

htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin

Restart Apache to make the new settings take effect.

/etc/init.d/apache2 reload

6) Compile and Install the Nagios Plugins

Extract the Nagios plugins source code tarball.

cd ~/downloads
tar xzf nagios-plugins-1.4.13.tar.gz
cd nagios-plugins-1.4.13

Compile and install the plugins.
./configure --with-nagios-user=nagios --with-nagios-group=nagios
make
make install

7) Start Nagios

Configure Nagios to automatically start when the system boots.
ln -s /etc/init.d/nagios /etc/rcS.d/S99nagios

Verify the sample Nagios configuration files.
/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

If there are no errors, start Nagios.
/etc/init.d/nagios start

8) Login to the Web Interface

You should now be able to access the Nagios web interface at the URL below. You'll be prompted for the username (*nagiosadmin*) and password you specified earlier.

http://localhost/nagios/
Click on the "Service Detail" navbar link to see details of what's being monitored on your local machine. It will take a few minutes for Nagios to check all the services associated with your machine, as the checks are spread out over time.

9) Other Modifications

If you want to receive email notifications for Nagios alerts, you need to install the mailx (Postfix) package.

sudo apt-get install mailx
sudo apt-get install postfix
You'll have to edit the Nagios email notification commands found in */usr/local/nagios/etc/objects/commands.cfg* and change any '/bin/mail' references to '/usr/bin/mail'. Once you do that you'll need to restart Nagios to make the configuration changes live.

sudo /etc/init.d/nagios restart

Configuring email notifications is outside the scope of this documentation. Refer to your system documentation, search the web, or look to the Nagios Support Portal or Nagios Community Wiki for specific instructions on configuring your Ubuntu system to send email messages to external addresses.

Reference: http://nagios.sourceforge.net/docs/3_0/toc.html

II. Configuring Nagios to work with the Websensor

Requirements:

- EM01B Websensor deployed on your network
- Websensor plugin script (check_em01.c)
- GNU C compiler (GCC) version 3 and above.
- Nagios version 3.0 (this guide can also be used for Nagios version 1.x and 2.x)

1. Compile the plugin script using gcc

gcc check_em01.c -o check_em01

If you get Segmentation Fault for a 64bit Linux, make sure you have the libc-dev-i386 installed which is necessary for the m32 flag to work. To install this library use the following command.

sudo apt-get install libc6-dev-i386

Now you can compile the plugin using the following command

gcc - m32 check_em01.c -o check_em01

2. Copy the script to Nagios plugins directory. The default is /usr/local/nagios/libexec but may vary according to your installation.

sudo cp check_em01 /usr/local/nagios/libexec/ -v

Note: Make sure the file copied in the destination has Read and Write permission for root as owner, group & read permission for others. You can check this by going to the destination directory and right clicking on the file, then go to permissions tab where you can set these options. As this is a program file check the box which says 'Allow executing file as program'

3. Copy the configuration files (esensors.cfg & websensors.cfg) to your Nagios configuration directory. The default is /usr/local/nagios/etc.

*sudo cp *.cfg /usr/local/nagios/etc -v*

Note: Make sure both the files copied in the destination has Read and Write permission for root as owner, group & read permission for others. You can check this by going to the destination directory and right clicking on the file, then go to permissions tab where you can set these options.

4. Edit your main Nagios configuration file. Usually, this is the file nagios.cfg

gksudo gedit /usr/local/nagios/etc/nagios.cfg

Add the following lines to your main configuration file and save the file

Esensors configuration files

cfg_file=/usr/local/nagios/etc/esensors.cfg

cfg_file=/usr/local/nagios/etc/websensors.cfg

5. Edit websensors.cfg file

gksudo gedit /usr/local/nagios/etc/websensors.cfg

Change the default 192.168.254.102 address in the host definition to the I.P. address of your Websensor. Change the contact email address to your own email address. You may edit the Sensor Polling Services command arguments to reflect your deployment environment (i.e. set lower/higher thresholds for alerts to be sent).

6. Restart Nagios.

sudo service nagios restart

 Alternatively, you may execute the following commands too:

kill `cat /usr/local/nagios/var/nagios.lock`

/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

If you are getting any configuration error you can run this configuration check command to troubleshoot

sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

If you get any permission denied error follow the note section in step 2 & 3 in section III

7. Verify that the Websensor appears as a host in your Nagios website.

http://localhost/nagios/

III. Configuring Nagios to work with the Websensor ES11

This plugin reports the ES11 Flood Sensor status. This plugin is written mainly for Nagios, but can be easily used for other software too. The ES11 is an add-on module for EM01b

Requirements:

- EM01B Websensor deployed on your network
- Websensor plugin script installed (check_em01.c) Refer Section II for installation
- GNU C compiler (GCC) version 3 and above.
- Nagios version 3.0 (this guide can also be used for Nagios version 1.x and 2.x)

1. Compile the plugin script using gcc

gcc check_es11.c -o check_es11

If you get Segmentation Fault for a 64bit Linux, make sure you have the libc-dev-i386 installed which is necessary for the m32 flag to work. To install this library use the following command.

sudo apt-get install libc6-dev-i386

Now you can compile the plugin using the following command

gcc - m32 check_es11.c -o check_es11

2. Copy the script to Nagios plugins directory. The default is /usr/local/nagios/libexec but may vary according to your installation.

sudo cp check_es11 /usr/local/nagios/libexec/ -v

Note: Make sure the file copied in the destination has Read and Write permission for root as owner, group & read permission for others. You can check this by going to the destination directory and right clicking on the file, then go to permissions tab where you can set these options. As this is a program file check the box which says 'Allow executing file as program'

3. Copy the configuration files (es11.cfg, esensors.cfg & websensors.cfg) to your Nagios configuration directory. The default is /usr/local/nagios/etc.

*sudo cp *.cfg /usr/local/nagios/etc -v*

Note: Make sure the three files copied in the destination has Read and Write permission for root as owner, group & read permission for others. You can check this by going to the destination directory and right clicking on the file, then go to permissions tab where you can set these options.

4. Edit your main Nagios configuration file. Usually, this is the file nagios.cfg

gksudo gedit /usr/local/nagios/etc/nagios.cfg

Make sure the following lines exist in your main configuration file if not add the missing line

Esensors configuration files

cfg_file=/usr/local/nagios/etc/esensors.cfg

cfg_file=/usr/local/nagios/etc/websensors.cfg

cfg_file=/usr/local/nagios/etc/es11.cfg

5. Edit websensors.cfg file

gksudo gedit /usr/local/nagios/etc/websensors.cfg

Change the default 192.168.254.102 address in the host definition to the I.P. address of your Websensor. Change the contact email address to your own email address You may edit the Sensor Polling Services command arguments to reflect your deployment environment (i.e. set lower/higher thresholds for alerts to be sent).

6. Edit es11.cfg file:

gksudo gedit /usr/local/nagios/etc/es11.cfg

Change the *host_name* to your Websensor host that the es11 is connected to and it should match the *host_name* specified under the '*define host*' section in the file *websensors.cfg* the default will be *websensor1*

Change the device ID to your Water Sensor Device ID printed on the device

For example in the es11.cfg file if your device id is 971234

Change *check_es11!300198 to check_es11!971234*

  You may edit the Sensor Polling Services command arguments to reflect your deployment environment (i.e. set low/high thresholds for alerts to be sent)

7. Restart Nagios.

sudo service nagios restart

  Alternatively, you may execute the following commands too:

kill `cat /usr/local/nagios/var/nagios.lock`

/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

If you are getting any configuration error you can run this configuration check command to troubleshoot

sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

If you get any permission denied error follow the note section in step 2 & 3 in section III

8. Verify that the Websensor appears as a host in your Nagios website.

http://localhost/nagios/

9. BASIC USAGE

To use the plugin:

check_es11 [hostname] [W/R] [6-digit Device ID]

W is for Flood Sensor Status. R is for resetting the latch after a "Wet" status is detected and latched. It is   ignored if the ES11 was not setup to latch on Wet status (see the manual on how to latch Wet status). If you enter only the hostname and nothing else, then the output will be data from the Websensor. However, it is not recommended to use this plugin to obtain HVAC data from the Websensor itself. Use the check_em01.c plugin instead.

Note: The ES11 needs to be calibrated before use, please refer the manual for instructions.

Examples: This will return ES11 data:

 ./check_es11 192.168.0.2 W 300100

Sample Output:

 OK ES11 Water Sensor Dry

This will reset the latch:

 ./check_es11 192.168.0.2 R 300100

Sample Output:

 Latch Reset. Water Sensor Now Dry

Note: ./ prefix is used to run the command in the in the compiled directory