

# NetHAM version 2 - User Manual

## Using NetHAM2

To use NetHAM2, you need to access via a web browser, for example, Internet Explorer or Firefox. In the address bar, type in the IP Address of the server which has the software followed by netham2. For example, <http://192.168.119.129/netham2>

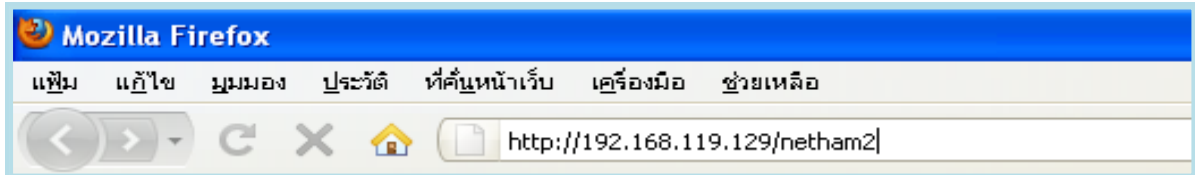


Figure 1 Accessing NetHAM2

The startup screen will appear. User needs to type in the Username and Password to login.

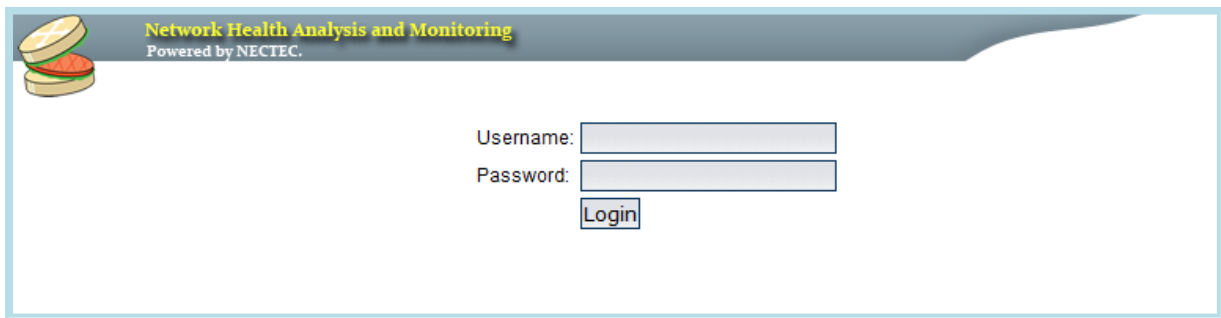


Figure 2 NetHAM2 Startup Screen



Figure 3 Login

When a user typed in the Username and Password, click on  to navigate to the home screen.

**Tips:** Default Username and Password is set to the following

Username: admin

Password: admin

Once the user logged in, Username and Password should be changed for security.

## Introducing NetHAM menu

NetHAM home screen consists of 3 main components which are the network device connections map, the status of the device, and the configuration menu

### 1. Main menu

Main menu consists of Monitor, Configure, Logged in status, and Logout



Figure 4 Main menu

Monitor	go back to the home screen of the software
Configure	go to the configuration screen
Logged in status	display the type of the account logged in
Logout	exit NetHAM

### 2. Monitor menu

The monitor screen shows the overview of the network as well as various services. For example, connection map, current status and previous statuses.

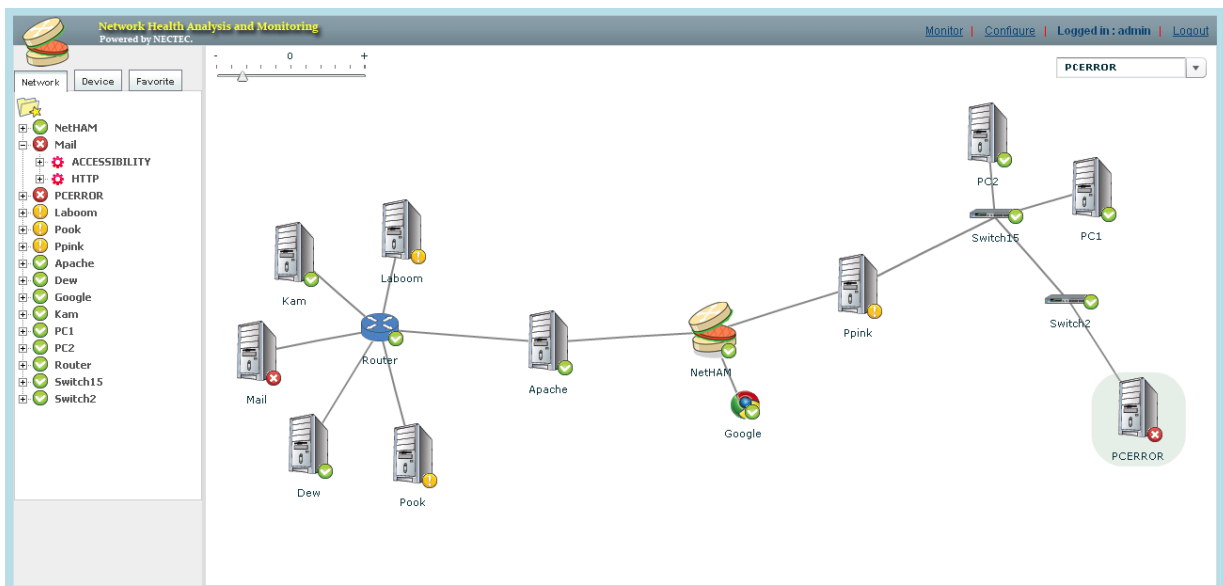


Figure 5 NetHAM Monitor menu

#### 2.1 Network devices connection map

This screen shows the map of all connections among network devices which user added to the software to check status and services.

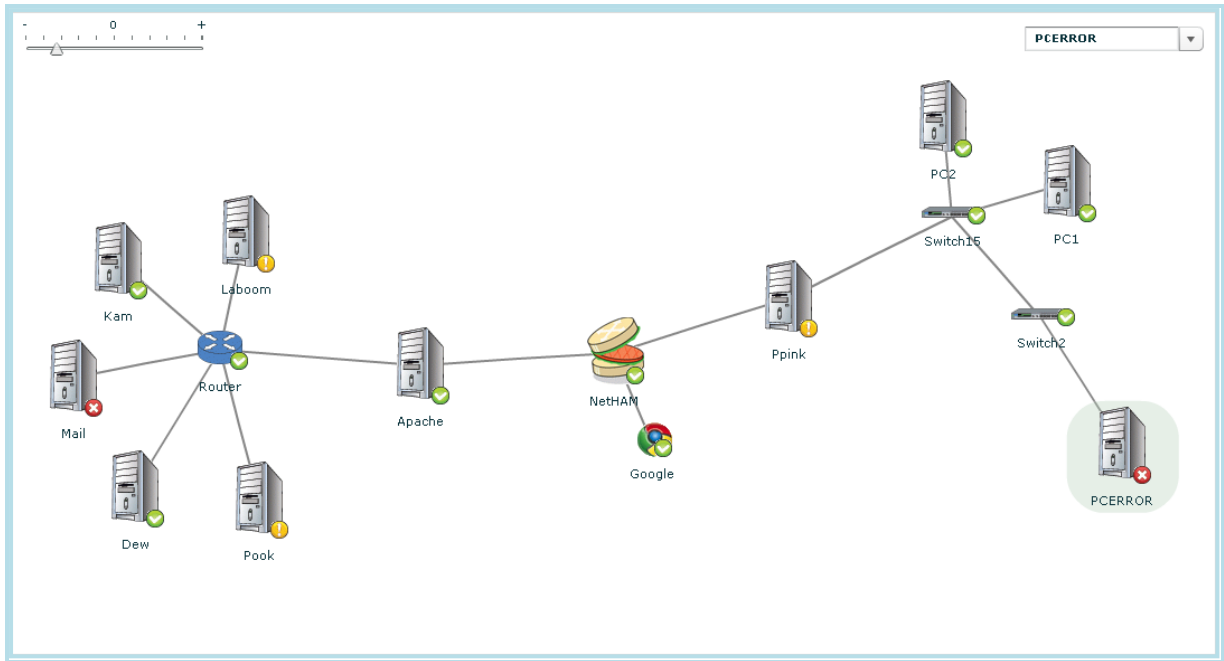
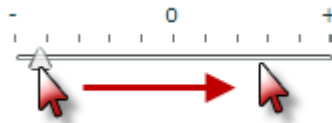







Figure 6 Network connection map

**Tips:** On this screen, user can zoom in and out the map by sliding the Zoom button to zoom in or out



### Device status icon

The map can also display the status of each device. We can separate into the followings:

- |   |              |  |
|---|--------------|--|
|  | Green icon   | The device is in a normal state                          |
|  | Yellow icon  | The device is in a warning state (medium malfunctioning) |
|  | Red icon     | The device is in a critical state (high malfunctioning)  |
|  | Blue icon    | Cannot check the device state                            |
|  | White I icon | Errors in checking the device                            |

## Link status line

There are colored lines in the connection map to show the status of each link. It also states the port number used for the link.

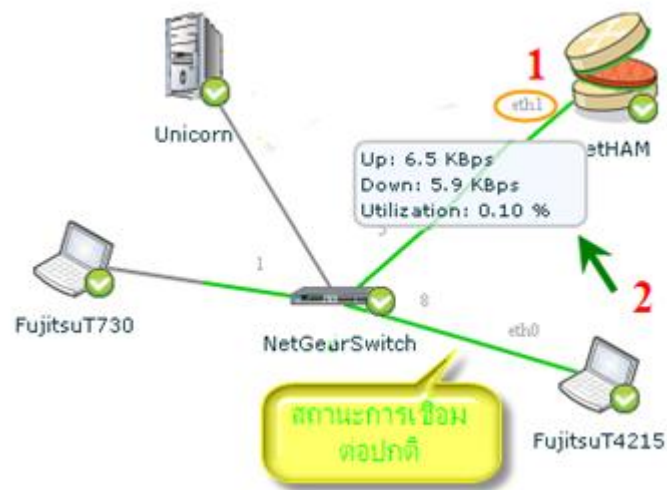


Figure 7 Link status lines

Part 1 will show the interface used to connect the devices

Part 2 will show the details of the line which are:

- Up is the bandwidth sent from child device to parent device
- Down is the bandwidth sent from parent device to child device
- Utilization is the bandwidth used compares to available bandwidth

## Configuring the interface to connect between devices

Double clicking on the line connecting between devices to configure the interface

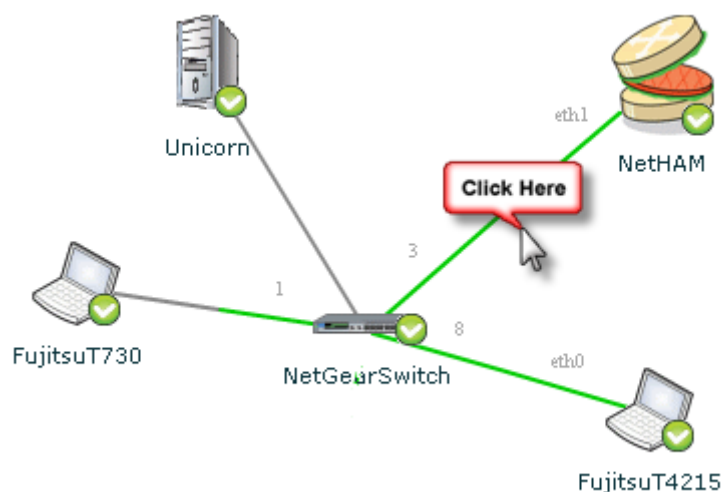


Figure 8 Configuring interface

A screen will show up

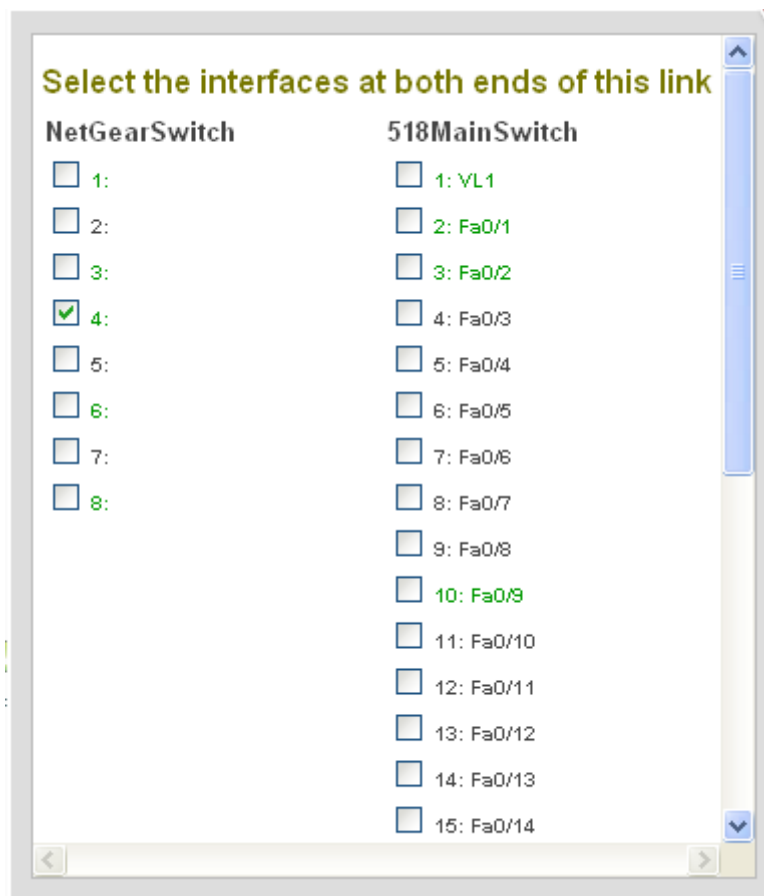


Figure 9 Interface selection screen

Select the interface you want and click OK

**Tips:** To choose the interface, choose the interface written in green because that means the interface is available.

## 2.2 Network device status screen

This screen shows the status of services and devices in the network. The screen is divided into 3 parts:

- 2.2.1 Network tab
- 2.2.2 Device tab
- 2.2.3 Favourite tab

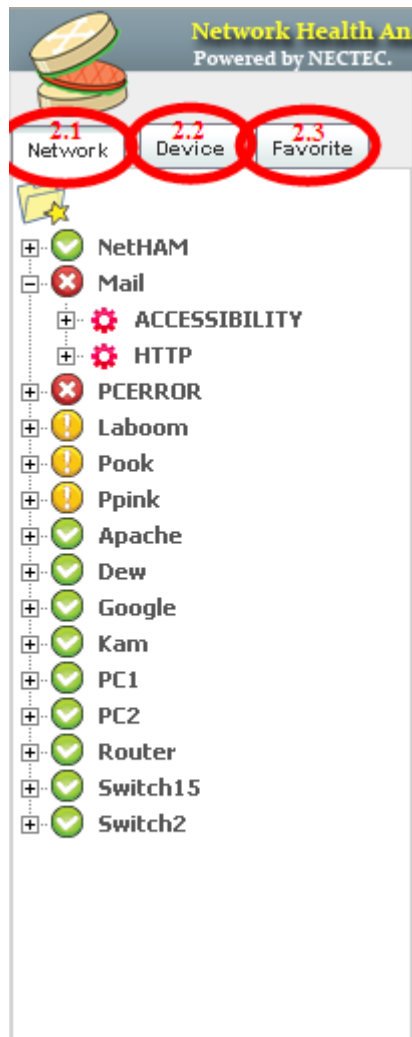


Figure 10 Tabs of each service in the status screen

### 2.2.1 Network tab

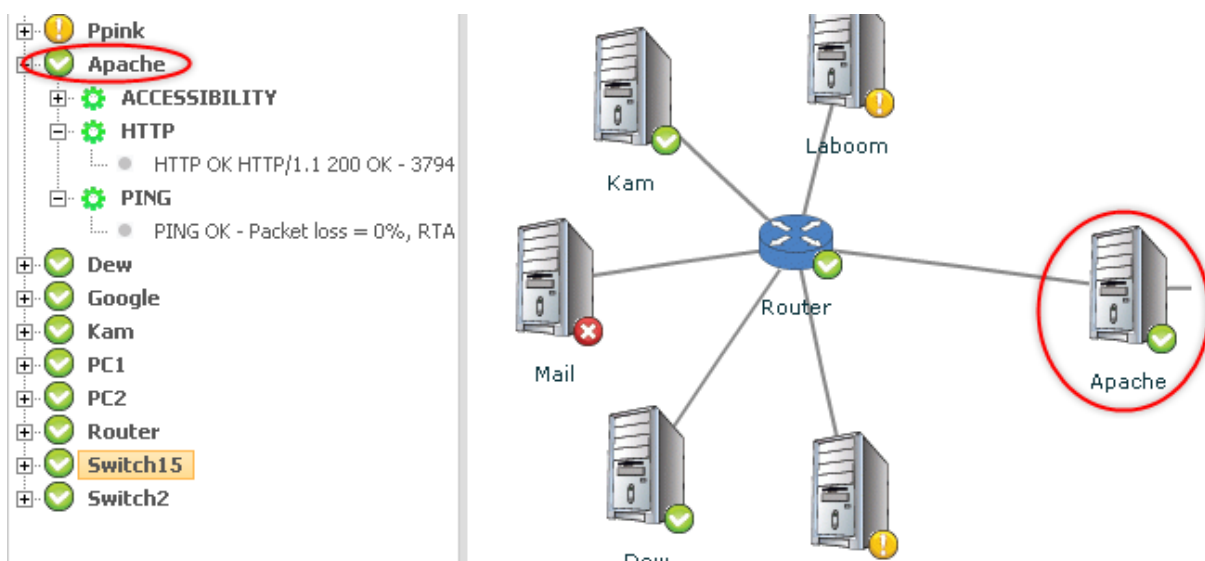


Figure 11 Network device statuses

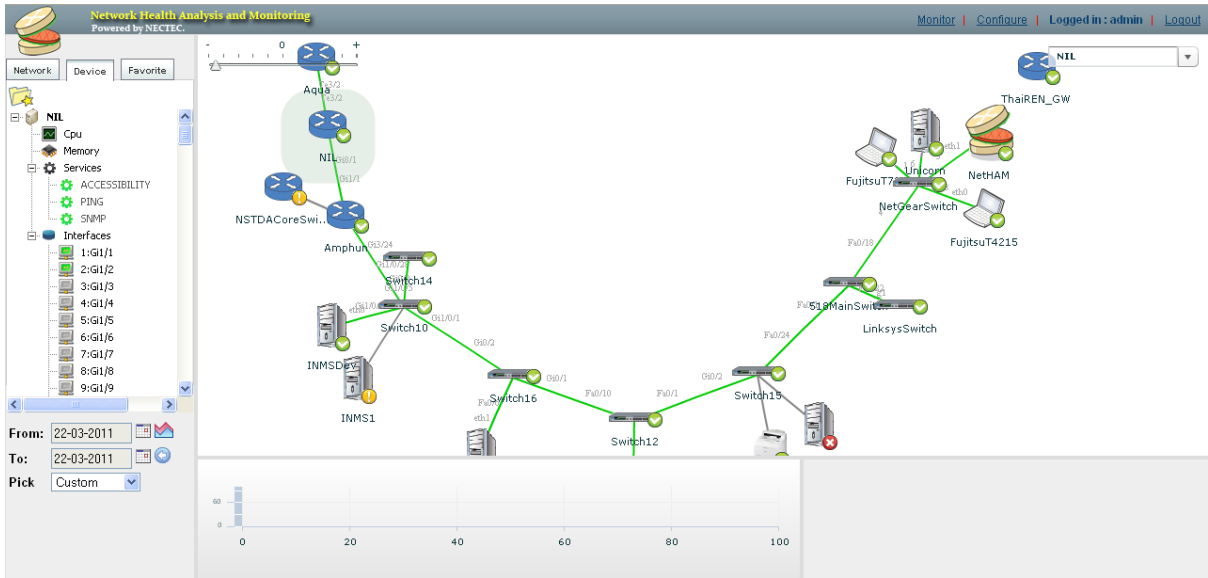





Figure 12 Service statuses

### 2.2.2 Device tab

This screen shows the status of each service and interface, by displaying service information in a form of graphs and interface status in a form of symbols. Interface status use 3 symbols which are:

-  means this interface Admin Status = up and is used
-  means this interface Admin Status = up but is not used
-  means this interface Admin Status = down and is not used

### Graph representation

This program can display a graph of information of each service and interface.

### How to display a graph

1. Choose an interface or service

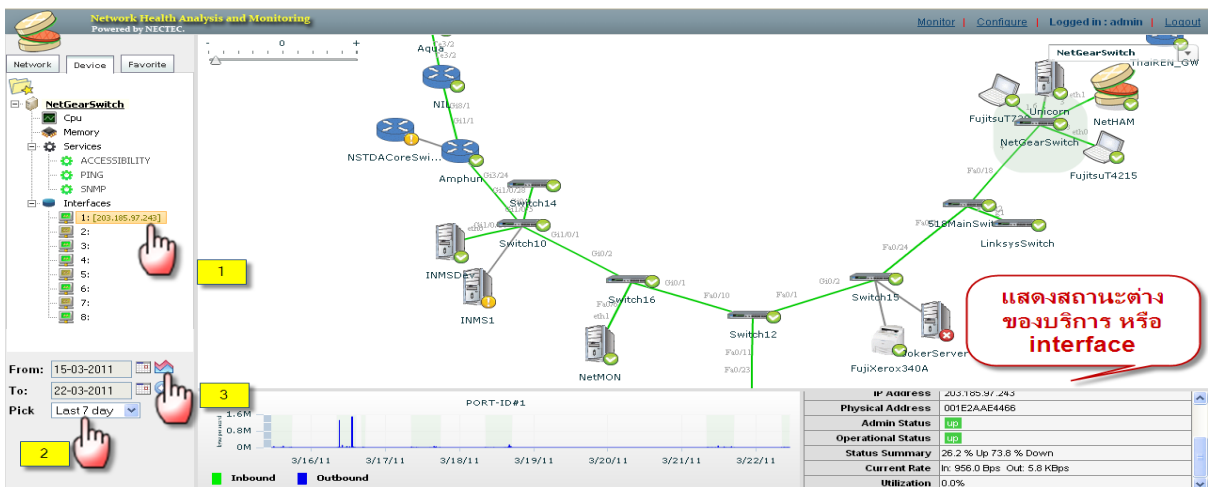


Figure 13 Plotted graph

2. Choose timing
3. Click to display graph

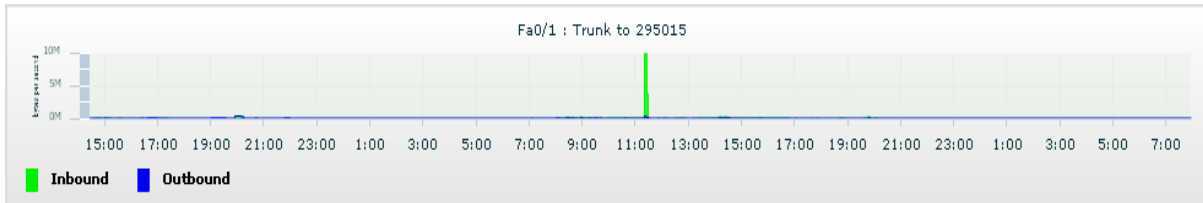


Figure 14 Graph

You can zoom in on the time by clicking and holding the mouse over a period of time

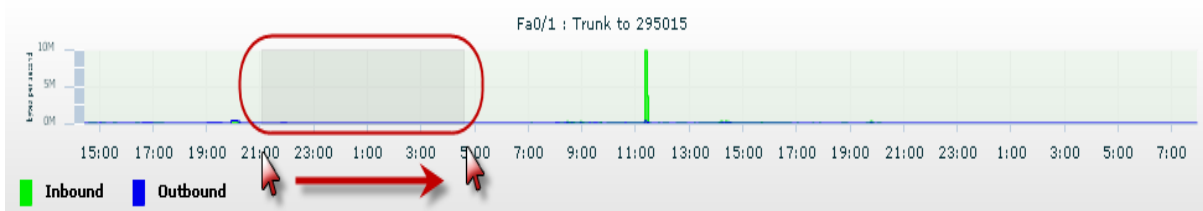


Figure 15 Graph zooming

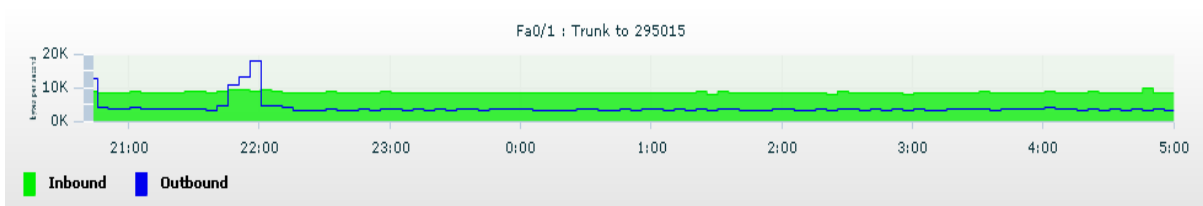


Figure 16 Result from zooming in the graph

The graph can also display only the set of information you want by clicking the button as shown in figure 17

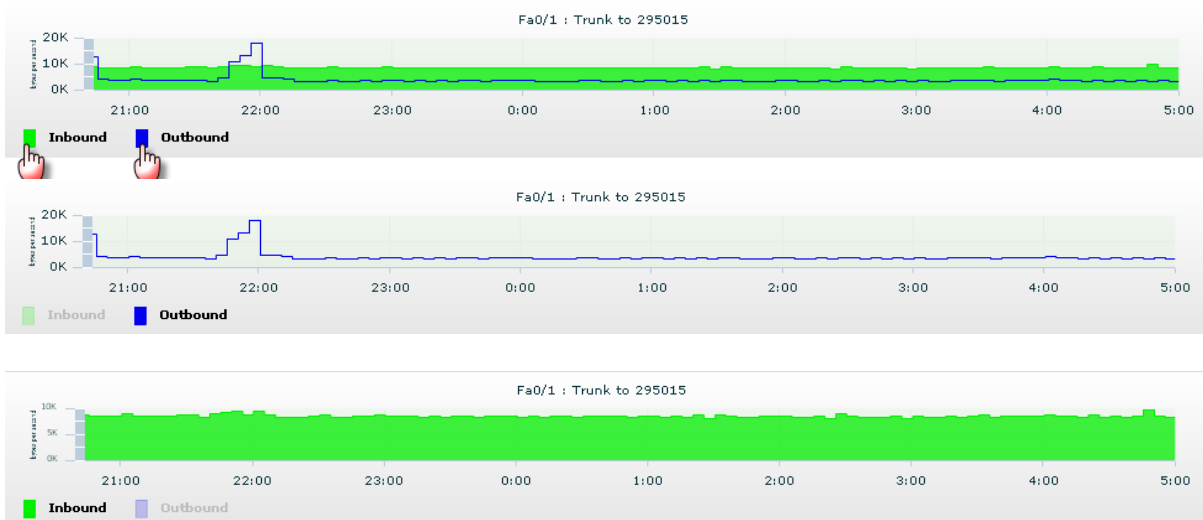


Figure 17 Result from choose a set of information



### 2.2.3 Favourite tab

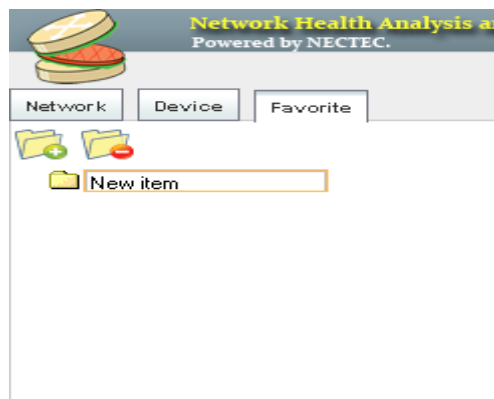


Figure 18 Favourite tab

This tab is used to store services or parts which need extra attention. The process to make favourite is as follows:

1. Click on a service
2. Click on favourite icon

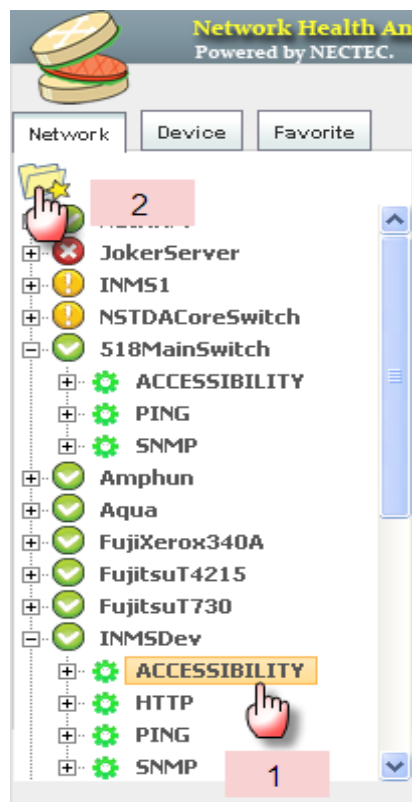


Figure 19 Make service a favourite

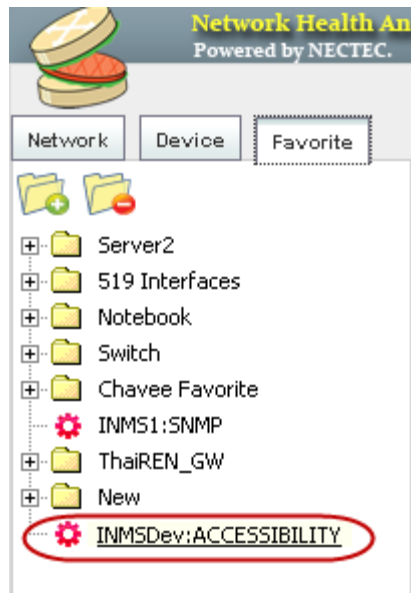


Figure 20 Favourite service

3. You can categorize services into folders

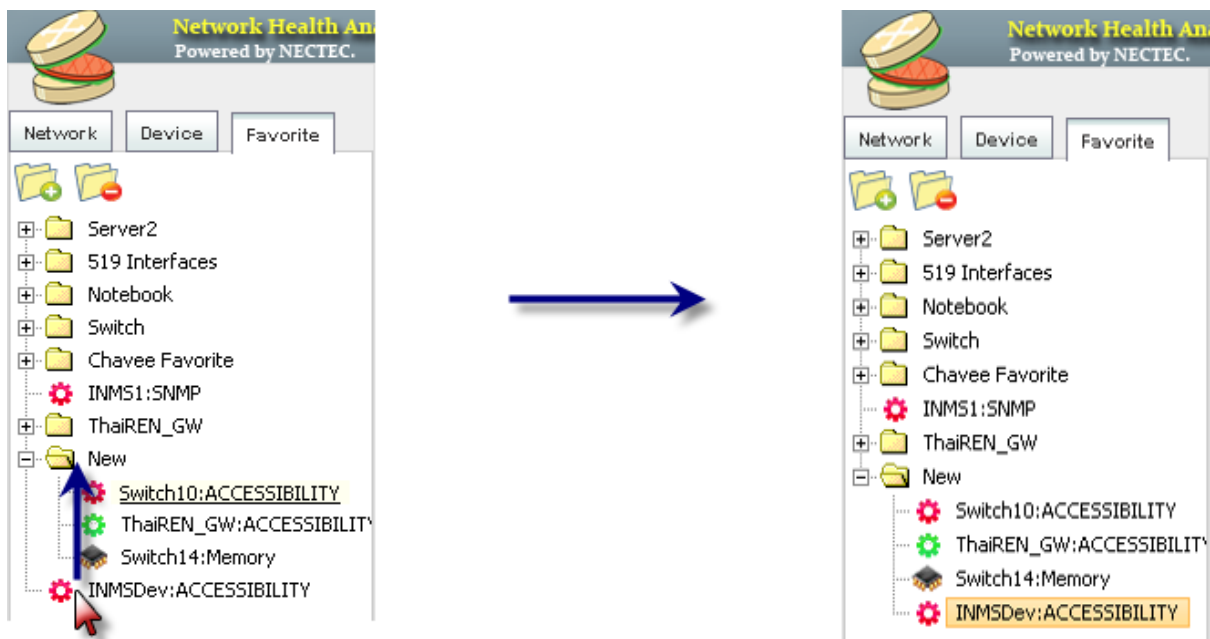


Figure 21 Moving favourites into folders

**Tips:** Not only services can move to favourite, but also the interface on the device tab.

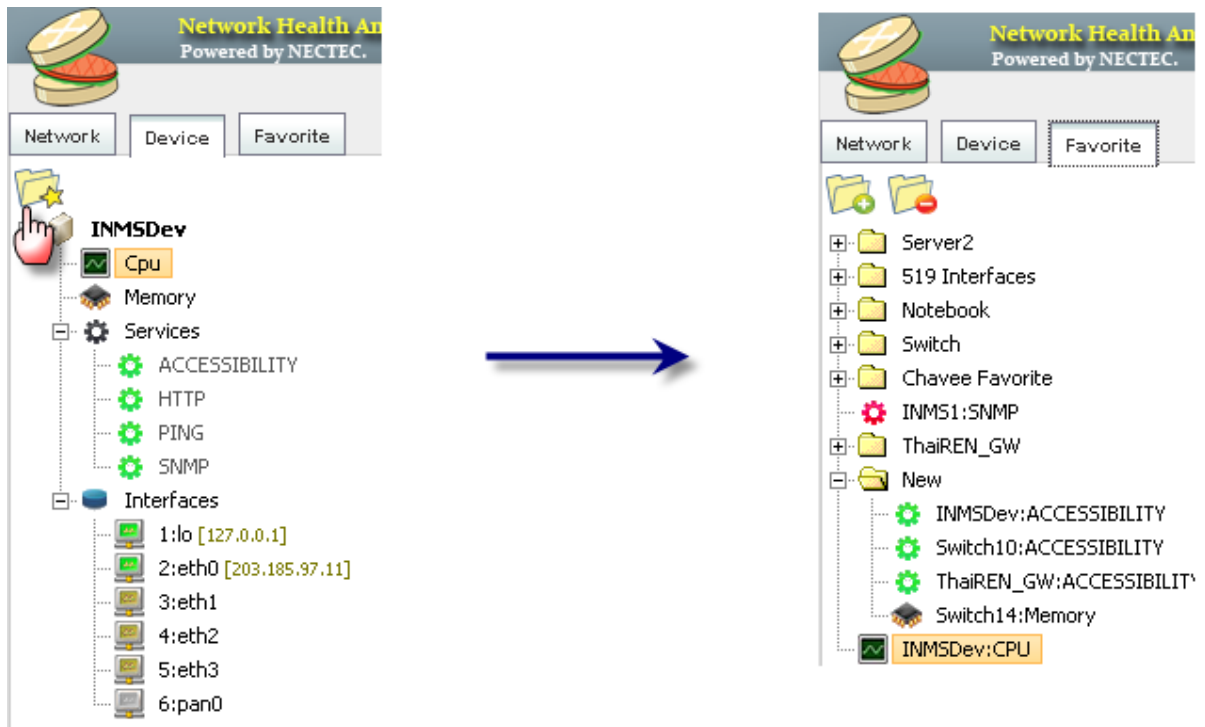


Figure 22 Make interface a favourite

### 3. Configure menu



#### Configuring devices in NetHAM

- Adding routers and switches
- Adding servers

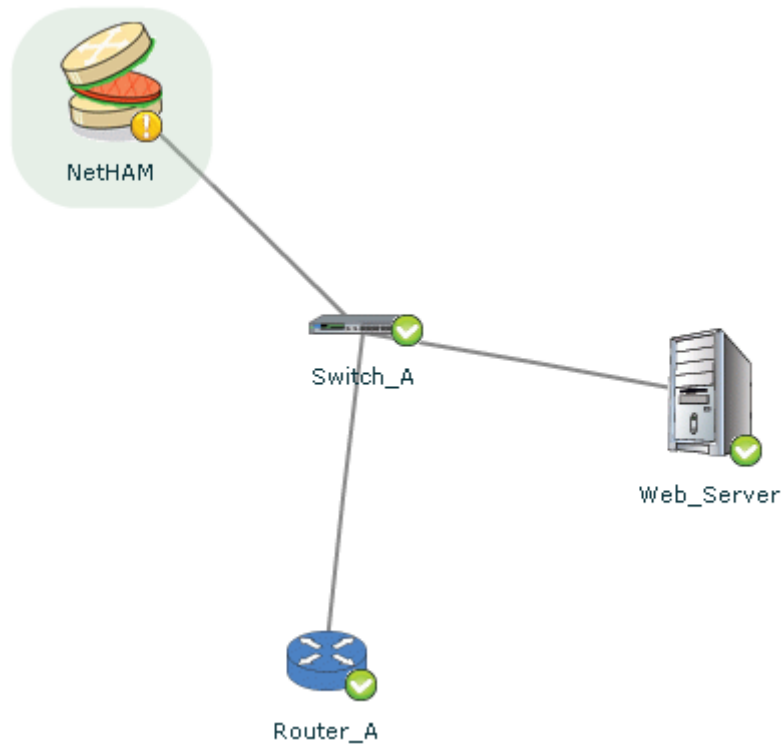


Figure 23 An example of a connection map

- **Adding routers and switches**

- **To add a switch**

1. Open a web browser, Login to NetHAM and go to the Configure menu on the top right of the screen



Figure 24 Menu

2. Click on the Configure device **menu**


คอนฟิกหลัก  
กำหนดอุปกรณ์

คอนฟิกหลัก  
กำหนดโฮสต์ เซอร์วิส ที่ใช้ในการมอนิเตอร์ กลุ่มของโฮสต์ และ กลุ่มของเซอร์วิส



ข้อมูลสถิติ

Group	Active	Inactive
โฮสต์	11	4

Figure 25 Main Configure screen

3. Click on  to add a device to be monitored

## กำหนดอุปกรณ์ เราเตอร์ สวิตช์ (hosts.cfg)

Search string:    เลือกทั้งหมด:

	Host name	Description
<input type="checkbox"/>	NetHAM	NetHAM





Figure 26 Configured device screen

4. Type in the device information on the General configuration screen



Figure 27 Configurations

**Tips:** If you have any questions on configuration, please look up on  (Help) or post on our webboard at <http://inms.in.th/portal/index.php/inms-forums>

### Connection host

- Choose NetHAM from the list.

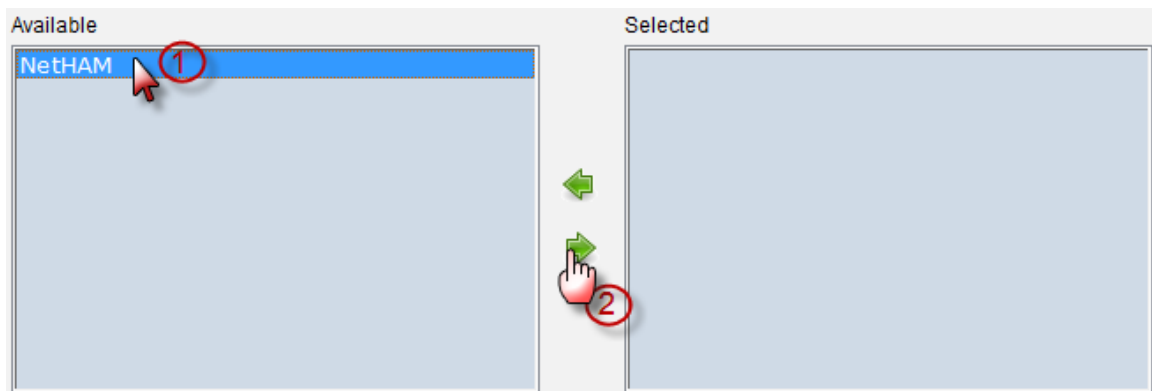


Figure 28 Connection host configuration screen

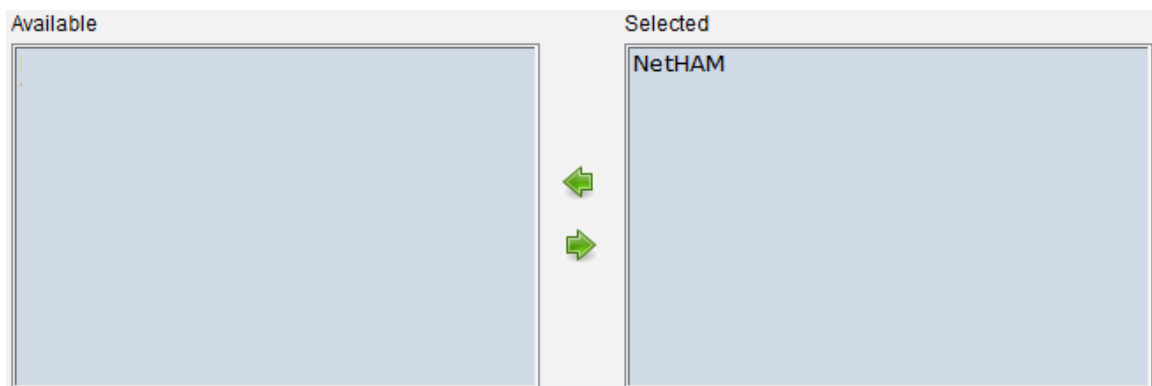


Figure 29 Result from choosing a connection host

- Click **บันทึก** to save.

### Service

- Choose services to be monitored.

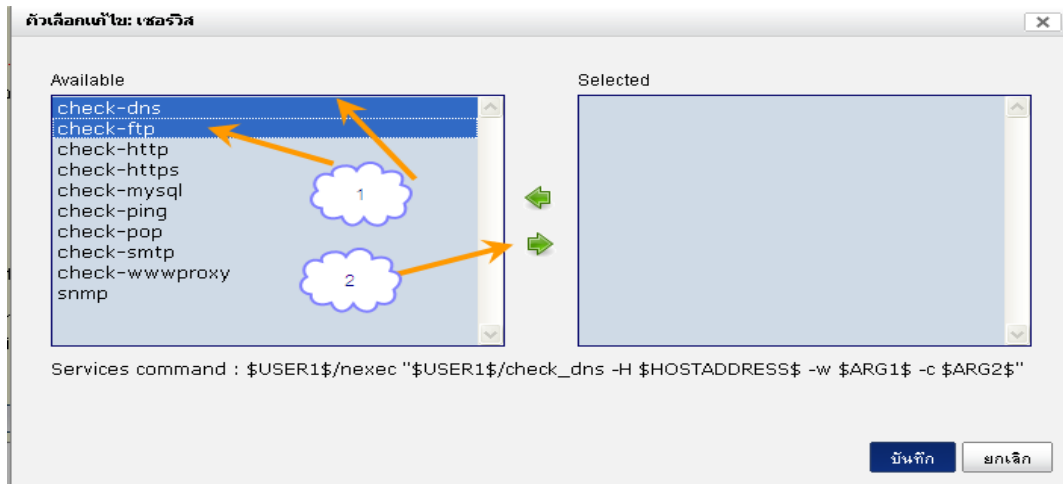


Figure 30 Service configuration screen

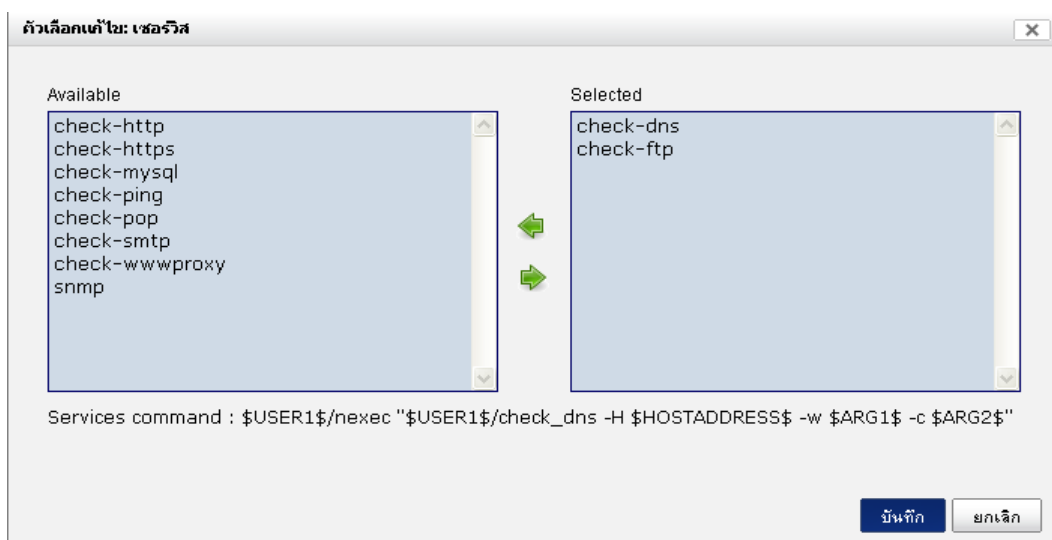


Figure 31 Result from choosing services

- Click **บันทึก** to save.





















**Tips:** If you would like to monitor SMTP, you need to add community string.

**Tips:** User can add an icon for the device. The icon must be GIF with the size 30x40 pixels

รูปอุปกรณ์ (\*.gif)

Click  to save to save the configuration

**Tips:** Icon meaning on the host configuration screen

Active	ไฟล์	Function
Yes	up-to-date	  
Yes	up-to-date	  
Yes	up-to-date	  
Yes	up-to-date	  
Yes	up-to-date	  
Yes	up-to-date	  
Yes	up-to-date	 

out-of-date

Red characters mean the configuration have not yet saved



Edit

Copy

Delete

5. Click on the Load new configuration menu from the Tools menu

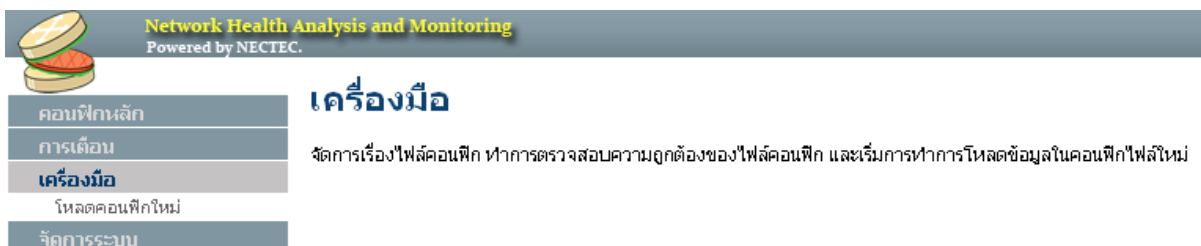


Figure 32 Tools menu

Save the configuration to a config file as well as check the correctness and start NetHAM by clicking on  from top to bottom, respectively.



## ตรวจสอบและโหลดคอนฟิกใหม่

เขียนข้อมูล คอนฟิก ไปยังไฟล์คอนฟิก

เริ่มการทำงานใหม่:

คำสั่งเริ่มการทำงานของ Nagios ใหม่ได้ถูกส่งให้ Nagios เรียบร้อยแล้ว

**Warning: Host 'Switch15' has no services associated with it!**

**Warning: Host 'Switch2' has no services associated with it!**

**Total Warnings: 2**

Total Errors: 0

Nagios 3.0.6

Copyright (c) 1999-2008 Ethan Galstad (<http://www.nagios.org>)

Last Modified: 12-01-2008

License: GPL

Reading configuration data...

Running pre-flight check on configuration data...

Checking services...

Checked 15 services.

Checking hosts...

Warning: Host 'Switch15' has no services associated with it!

Warning: Host 'Switch2' has no services associated with it!

Checked 11 hosts.

Checking host groups...

Checked 0 host groups.

Checking service groups...

Checked 0 service groups.

Checking contacts...

Checked 2 contacts.

Figure 33 Result from loading a new configuration

6. Back to the monitor screen, added device will be shown on the screen

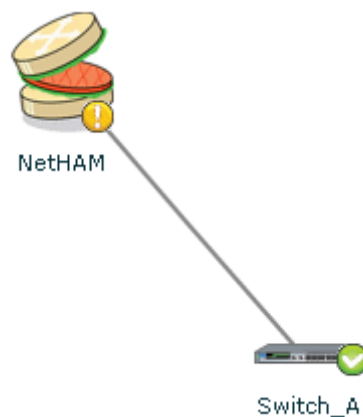


Figure 34 Monitor screen after configuring a switch

- To add a router

1. Go to the Configure menu on the top right of the screen




Figure 35 Menu

2. Click on the Configure device menu



The main configure screen has a header with a logo of a burger and the text 'Network Health Analysis and Monitoring Powered by NECTEC'. On the left is a sidebar with menu items: 'คอนฟิกหลัก' (highlighted), 'กำหนดอุปกรณ์', 'การเตือน', 'เครื่องมือ', and 'จัดการระบบ'. The main content area is titled 'คอนฟิกหลัก' and contains a description: 'กำหนดโฮสต์ เซอร์วิส ที่ใช้ในการมอนิเตอร์ กลุ่มของโฮสต์ และ กลุ่มของเซอร์วิส'. Below this is a section 'ข้อมูลสถิติ' with a table showing the number of active and inactive hosts.

Group	Active	Inactive
โฮสต์	11	4

Figure 36 Main Configure screen

3. Click on  to add a device to be monitored

### กำหนดอุปกรณ์ เราเตอร์ สวิตช์ (hosts.cfg)

Search string:    เลือกทั้งหมด:

	Host name	Description
<input type="checkbox"/>	NetHAM	NetHAM
<input type="checkbox"/>	Switch_A	Add_Switch



Figure 37 Configured device screen

4. Type in the device information on the General configuration screen

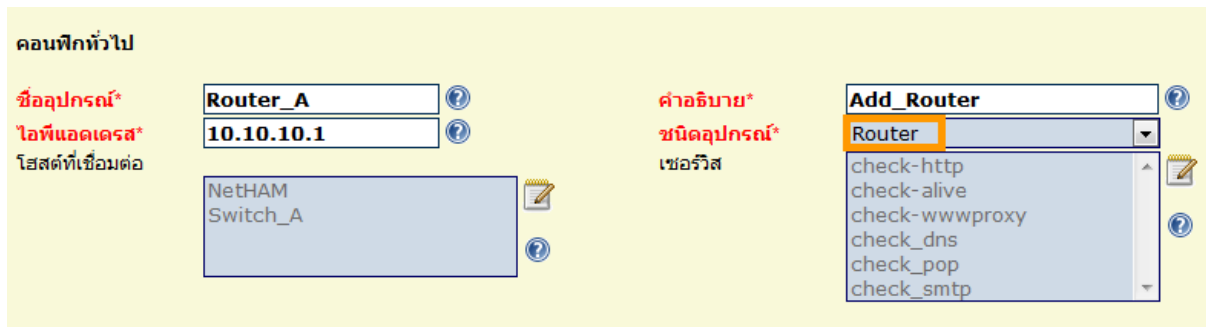


Figure 38 Configurations

### Connection host

- Choose Switch\_A from the list. Do the process as stated above.

- Click **บันทึก** to save.

- Click **บันทึก** to save the configuration

5. Click on the Load new configuration menu from the Tools menu. Save the configuration to a config file as well as check the correctness and start NetHAM.

6. Go back to the monitor screen

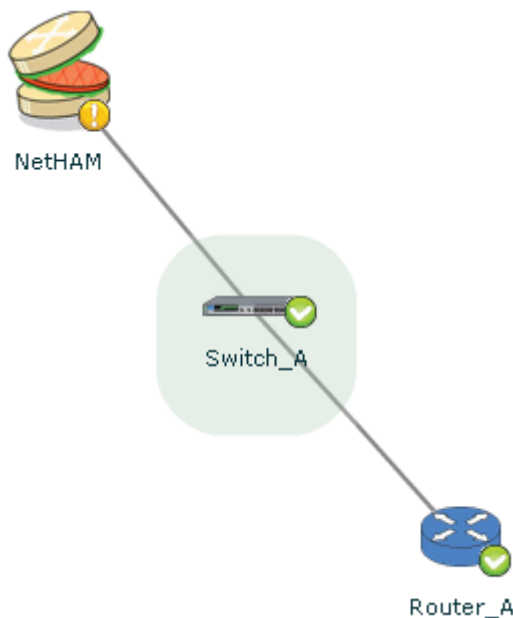


Figure 39 Monitor screen after configuring a router

- Adding servers

- To add a host

1. Go to the Configure menu on the top right of the screen



Figure 40 Menu

2. Click on the Configure device menu

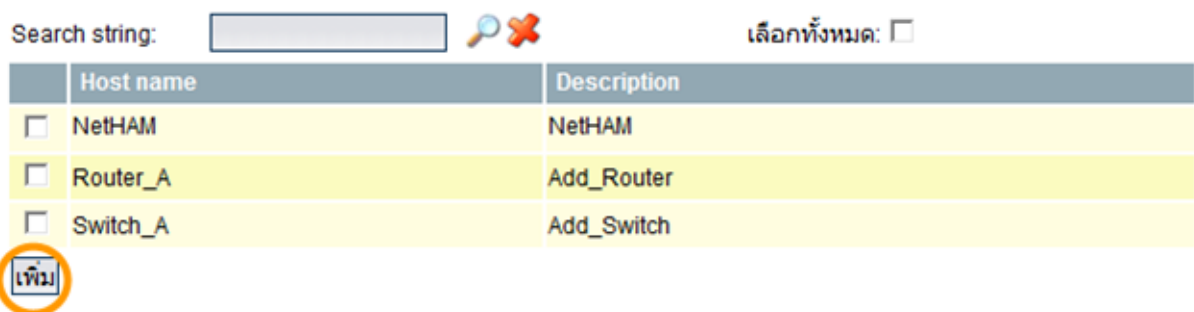
The screenshot shows the main configuration interface. At the top is a header with a logo of a burger and the text 'Network Health Analysis and Monitoring Powered by NECTEC'. Below the header is a sidebar with a menu: 'คอนฟิกหลัก' (Main Configuration), 'กำหนดอุปกรณ์' (Configure Device), 'การเตือน' (Alerts), 'เครื่องมือ' (Tools), and 'จัดการระบบ' (System Management). The main content area is titled 'คอนฟิกหลัก' and contains a description: 'กำหนดโฮสต์ เซอร์วิส ที่ใช้ในการมอนิเตอร์ กลุ่มของโฮสต์ และ กลุ่มของเซอร์วิส'. Below this is a section titled 'ข้อมูลสถิติ' (Statistics) with a table showing the number of active and inactive hosts.


Group	Active	Inactive
โฮสต์	11	4

Figure 41 Main Configure screen

3. Click on Add button to add a device to be monitored

### กำหนดอุปกรณ์ เราเตอร์ สวิตช์ (hosts.cfg)

The screenshot shows the 'กำหนดอุปกรณ์ เราเตอร์ สวิตช์ (hosts.cfg)' screen. It features a search bar with the text 'Search string:' and a search icon. Below the search bar is a table with columns 'Host name' and 'Description'. The table contains three rows: 'NetHAM' with description 'NetHAM', 'Router\_A' with description 'Add\_Router', and 'Switch\_A' with description 'Add\_Switch'. Each row has a checkbox on the left. Below the table is a button labeled 'เพิ่ม' (Add) circled in orange.

Search string:    เลือกทั้งหมด:

	Host name	Description
<input type="checkbox"/>	NetHAM	NetHAM
<input type="checkbox"/>	Router_A	Add_Router
<input type="checkbox"/>	Switch_A	Add_Switch

Figure 42 Configured device screen

4. Type in the device information on the General configuration screen

คอนฟิกทั่วไป

ชื่ออุปกรณ์\*

ไอพีแอดเดรส\*

โหนดที่เชื่อมต่อ

- NetHAM
- Switch\_A
- Router\_A

คำอธิบาย\*

ชนิดอุปกรณ์\*

เซอวิส

- check-http
- check-alive
- check-wwwproxy
- check\_dns
- check\_pop
- check\_smtp

Figure 43 Configurations

**Tips:** The network devices or servers added to NetHAM for monitoring should have its own IP Address so that the software can monitor the device.

**Tips:** Monitoring can be URL instead of IP Address. For example, to monitor google.com, just type in [www.google.com](http://www.google.com) in the IP Address box.

### Connection host

- Choose Switch\_A from the list. Do the process as stated above.
- Click  to save.
- Click  to save the configuration

5. Click on the Load new configuration menu from the Tools menu. Save the configuration to a config file as well as check the correctness and start NetHAM.

6. Go back to the monitor screen

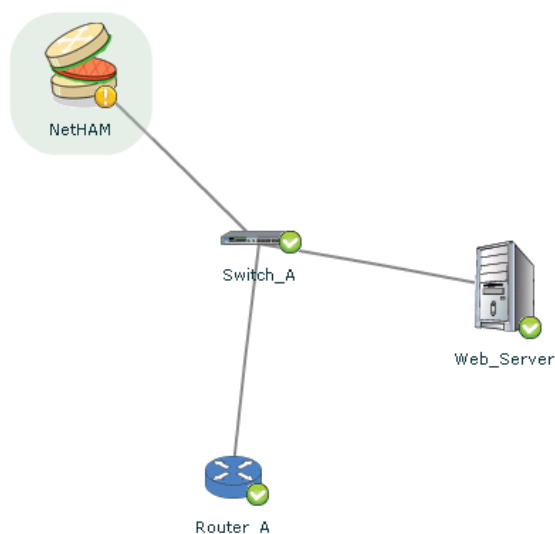


Figure 44 Monitor screen after configuring a router  
**Activation and Deactivation**

If the program has not yet activated, NetHAM cannot be used.

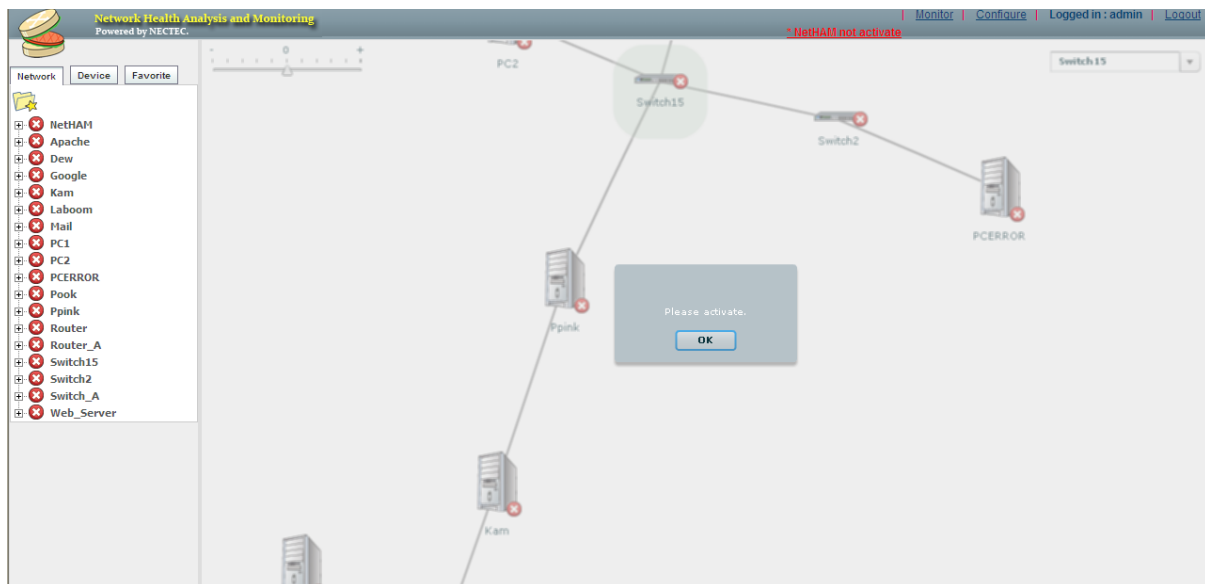


Figure 45 Inactivated program

**- Activation**

The program will redirect to an activation page

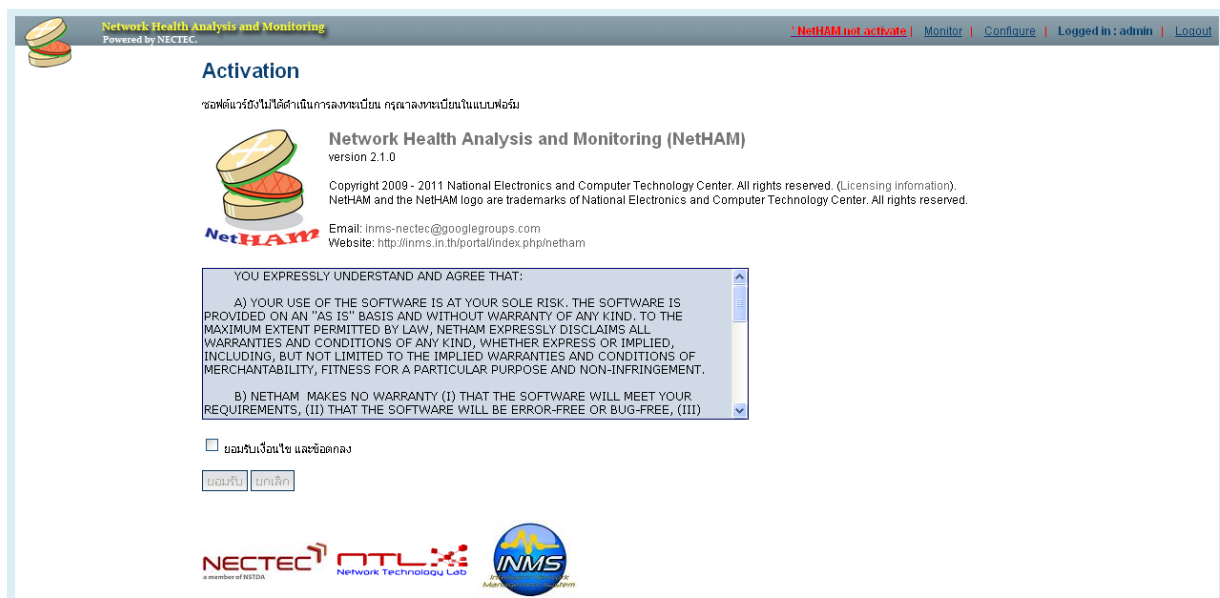


Figure 46 Terms and Conditions of the program

1. Tick the I'm Accept to terms and conditions box and click OK
2. Type in the information

## Activation

ซอฟต์แวร์ยังไม่ได้ดำเนินการลงทะเบียน กรุณาลงทะเบียนในรูปแบบฟอร์ม

<b>ชื่อ-สกุล*</b>	<input type="text" value="Yonchanok Khaokaew"/>
<b>องค์กร*</b>	<input type="text" value="NECTEC"/>
<b>อีเมล*</b>	<input type="text" value="pro55_yonchanok@hotmail"/>
<b>Serial no.*</b>	<input type="text"/>

\* ต้องกำหนดค่า

Figure 47 Input information

**Tips:** The information must be in English otherwise the activation will not success

3. If the activation success, the screen will appear as below

**Network Health Analysis and Monitoring**

Powered by NECTEC.

<div style="background-color: #4f7942; color: white; padding: 5px; text-align: center;">คอนโซลหลัก</div> <div style="background-color: #4f7942; color: white; padding: 5px; text-align: center;">การเตือน</div> <div style="background-color: #4f7942; color: white; padding: 5px; text-align: center;">เครื่องมือ</div> <div style="background-color: #4f7942; color: white; padding: 5px; text-align: center;">จัดการระบบ</div>	<h2 style="margin: 0;">Activation</h2> <p style="margin: 5px 0;">ข้อมูลการลงทะเบียน</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>ประเภทใบอนุญาต</b></td> <td>NetHAM Standard Version</td> </tr> <tr> <td><b>จำนวนโฮสต์</b></td> <td>30</td> </tr> <tr> <td><b>Serial no.</b></td> <td>INTERN-2011-NH-04</td> </tr> <tr> <td><b>ชื่อ-สกุล</b></td> <td>Yonchanok khaokaew</td> </tr> <tr> <td><b>องค์กร</b></td> <td>NECTEC</td> </tr> <tr> <td><b>อีเมล</b></td> <td>pro55_yonchanok@hotmail.com</td> </tr> </table> <p style="text-align: center; margin-top: 10px;"> <input type="button" value="ยกเลิกใบอนุญาต"/> </p>	<b>ประเภทใบอนุญาต</b>	NetHAM Standard Version	<b>จำนวนโฮสต์</b>	30	<b>Serial no.</b>	INTERN-2011-NH-04	<b>ชื่อ-สกุล</b>	Yonchanok khaokaew	<b>องค์กร</b>	NECTEC	<b>อีเมล</b>	pro55_yonchanok@hotmail.com
<b>ประเภทใบอนุญาต</b>	NetHAM Standard Version												
<b>จำนวนโฮสต์</b>	30												
<b>Serial no.</b>	INTERN-2011-NH-04												
<b>ชื่อ-สกุล</b>	Yonchanok khaokaew												
<b>องค์กร</b>	NECTEC												
<b>อีเมล</b>	pro55_yonchanok@hotmail.com												

Figure 48 Result after success activation

- Number of host is the number of device can be monitored

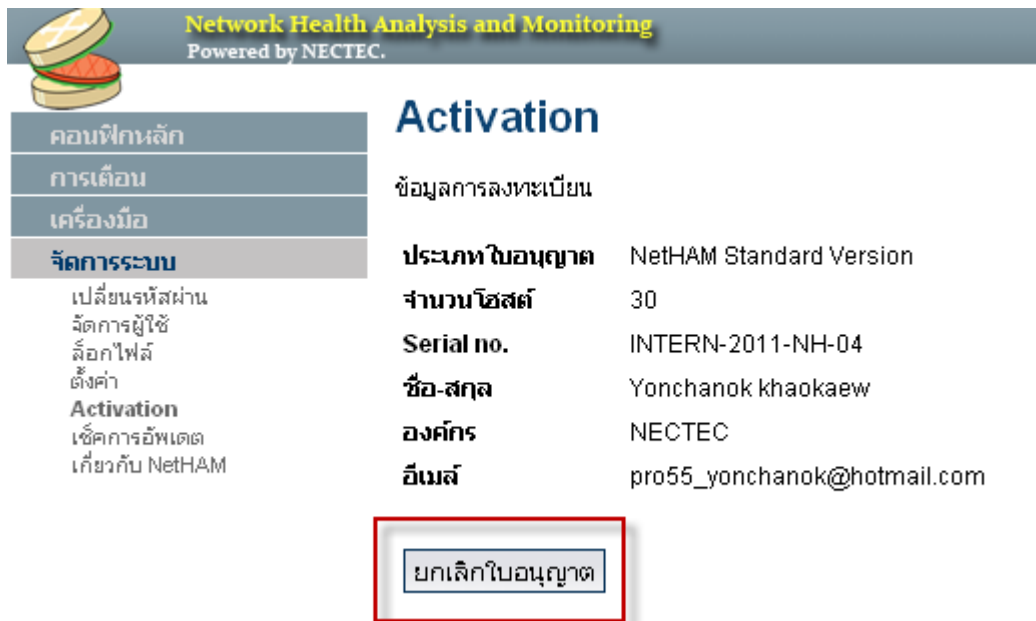
## - Deactivation

1. Go to the Configure menu on the top right of the screen



Figure 49 Menu

2. Choose Activation

The screenshot shows the 'Activation' page of the NetHAM interface. At the top, there is a header with a logo of a sandwich and the text 'Network Health Analysis and Monitoring Powered by NECTEC'. On the left, there is a sidebar menu with items: 'คอนโซลหลัก', 'การเตือน', 'เครื่องมือ', and 'จัดการระบบ'. Under 'จัดการระบบ', there are sub-items: 'เปลี่ยนรหัสผ่าน', 'จัดการผู้ใช้', 'ล็อกไฟล์', 'ตั้งค่า', 'Activation', 'เช็คการอัปเดต', and 'เกี่ยวกับ NetHAM'. The main content area is titled 'Activation' and contains a table of system information. A red box highlights a button labeled 'ยกเลิกใบอนุญาต' (Deactivate License) at the bottom of the page.

ข้อมูลการลงทะเบียน	
ประเภทใบอนุญาต	NetHAM Standard Version
จำนวนโฮสต์	30
Serial no.	INTERN-2011-NH-04
ชื่อ-สกุล	Yonchanok khaokaew
องค์กร	NECTEC
อีเมล	pro55_yonchanok@hotmail.com

Figure 50 Deactivation process

3. Click on the Deactivate button

**Tips:** The reason why we need to Deactivate is that this is a licensed program and one serial number can be used with one machine. Therefore, when we need to change the working machine, we need to deactivate the old machine before activating with the new one.



## Updates

### 1. Click on Check for Update

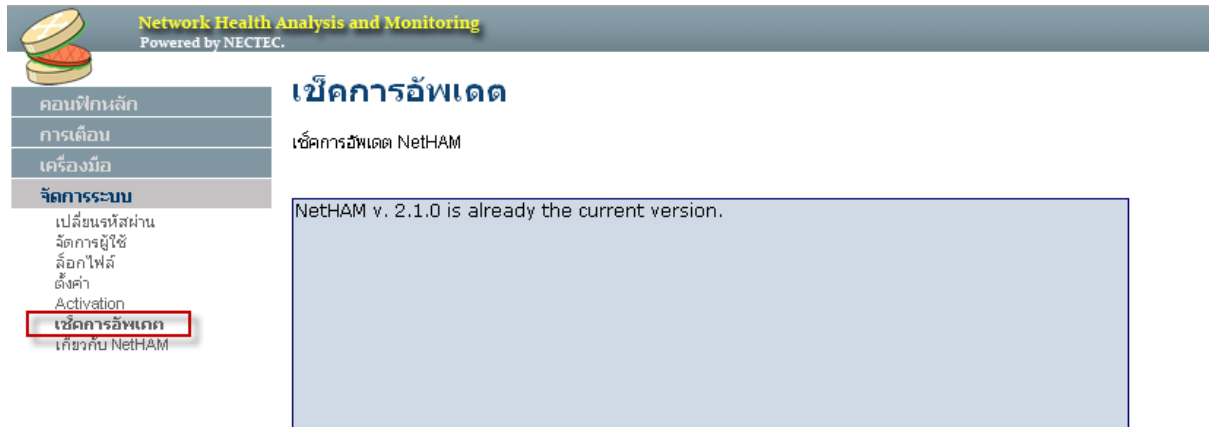


Figure 51 Check for Update screen

The system will show the current version of NetHAM. If the version you have is not the latest, the Update button will be available to update the program.

## Notifications

### - Adding a contact

Contact name	Description	Active	Function
<input type="checkbox"/> nethamadmin	ADMIN	Yes	
<input type="checkbox"/> user1		Yes	

Figure 52 Contact screen

We can add a contact by clicking .

คอนโซลหลัก  
การเตือน  
สถานะผู้ติดต่อ  
เครื่องมือ  
จัดการระบบ

กำหนดผู้ติดต่อ (contacts.cfg)

คอนฟิกทั่วไป

ชื่อผู้ติดต่อ\*  
คำอธิบาย

อีเมล  
ที่อยู่เพิ่มเติม 1  
ที่อยู่เพิ่มเติม 3  
ที่อยู่เพิ่มเติม 5

เบอร์เพจ  
ที่อยู่เพิ่มเติม 2  
ที่อยู่เพิ่มเติม 4  
ที่อยู่เพิ่มเติม 6

เปิดการเตือนโฮสต์\*  
เวลาเตือนโฮสต์\*  
 on down  
 on unreachable  
 on host recoveries  
 when start/stop flapping  
 downtime start and ends.  
 none

เปิดการเตือนเซอร์วิส\*  
เวลาเตือนเซอร์วิส\*  
 on warning  
 on unknown  
 on critical  
 on service recoveries  
 start/stop flapping  
 downtime start and ends.  
 none

ส่งแจ้งเตือนโฮสต์\*  
notify-host-by-email

ส่งแจ้งเตือนเซอร์วิส\*  
notify-service-by-email

Figure 53 Add a contact screen

- Contact name - specify contact name
- Host notification - notify when a malfunction occurs in the host
- Service notification - notify when a malfunction occurs in the service
- Time to notify - 24\*7 check 24 hours a day, 7 days a week  
- 8\*5 check between office hours (8.00 – 17.00) Mon - Fri
- Select host or service to notify if a malfunction occurs
- How to notify - choose which way to notify

## - Setting up an Email notification

The screenshot shows the 'ตั้งค่าการแจ้งเตือนด้วยเมล' (Set up email notifications) screen. It is divided into three main sections, each with a red border and a yellow callout box:

- Section 1:** 'ตั้งค่าอีเมล' (Set up email). Fields include: 'ชื่ออีเมลผู้ส่ง\*' (Sender email) set to 'yonchanok@gmail.com', 'หัวเรื่องอีเมล\*' (Subject) set to '\*\* \$NOTIFICATIONTYPE\$ Host Alert: \$HO...', and 'ข้อความ\*' (Message) containing '\*\*\*\*\* NetHAM \*\*\*\*\*' and variables for Notification Type, Host, State, and Address.
- Section 2:** 'ตั้งค่าอีเมล' (Set up email). Fields include: 'ชื่ออีเมลผู้ส่ง\*' (Sender email) set to 'yonchanok@gmail.com', 'หัวเรื่องอีเมล\*' (Subject) set to '\*\* \$NOTIFICATIONTYPE\$ Service Alert: \$I...', and 'ข้อความ\*' (Message) containing '\*\*\*\*\* NetHAM \*\*\*\*\*' and variables for Notification Type, Service, Host, and Address.
- Section 3:** 'ตั้งค่า SMTP server' (Set up SMTP server). Fields include: 'SMTP server(name or IP)\*' set to 'smtp.gmail.com', 'SMTP port\*' set to '587', 'ต้องการ Authentication' (Require authentication) set to 'Yes', 'SMTP username' set to 'yonchanok@gmail.com', 'Password' (masked with dots), and 'Security mode' set to 'TLS'.

Figure 54 Email notification screen

Part 1, 2 is the notification set up when an error occurs in a Host or a Service

- Email
- Subject
- Message

Part 3 is the SMTP server set up

- SMTP server and Port
- SMTP username and password

If you do not have SMTP server, you can use the one as shown above which using a Gmail account

**Tips:** After adding or editing a contact and setting up an Email notification, you need to reload the configuration and restart the program