Networking Energisers to Perimeter Patrol through the Internet

The installation of Energisers at different locations can be monitored using Perimeter Patrol at a central location. However, to achieve this result, significant work at each site is required. This document provides enough information to begin the work, however it does not provide specifics as each site is different.

Local Site requirements

Each local site will require a PAE212 TCP/IP Interface board connected to the Site Local Area Network (LAN). The LAN will need to have a Modem connecting to the Internet. Access to the Modem settings is required to configure the Network Address Translation (NAT) table.

The PAE212 will be wired to the Energisers via the Keypad Bus. A PAE212 is pre-configured as the Group Master whilst the Energisers will need to be configured as Slaves using a Keypad. The Keypad is required for configuration, however it can be removed from the site after commissioning.
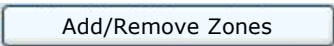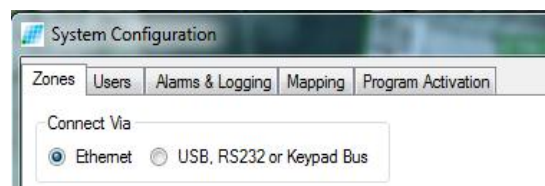
Before heading to Site

Some information is required about the site so that the equipment can be pre-configured.
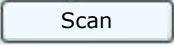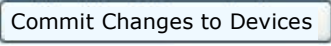
1. A Static IP Address is required for each PAE212 on each site. This IP address should be determined and reserved by the IT professional at each site.
2. The Subnet Mask, Gateway and DNS Server information for the site will also be required.
3. The type of Modem at each site needs to be determined. This is required if there isn't an IT Professional to perform the Network Address Translation. Become familiar with the Modems configuration by visiting the manufactures website.
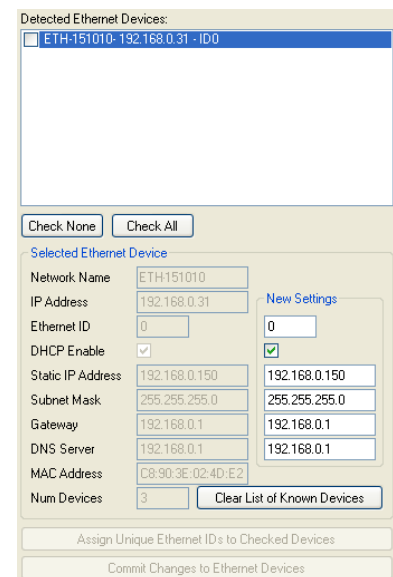
Pre-configuring each PAE212 (from the PAE212 User Manual)

1. Connect the PAE212 to a computer that currently contains Perimeter Patrol
2. In Perimeter Patrol open the SYSTEM CONFIGURATION window (SETUP→SYSTEM CONFIGURATION…)
3. In the ZONES Tab, Select the ETHERNET option
4. Press the [Add/Remove Zones] button

Automatically Detecting Connected Devices

1. In the ADD/REMOVE ZONES window press the [Scan] button. This will detect all of the PAE212 devices connected. These will be displayed in the DETECTED ETHERNET DEVICES box
2. Click on each Detected Ethernet Device in turn and assign New Settings:
   - Set the Ethernet ID to a value between 1 and 128.
     Each PAE212 **on the same site** must have a unique number as this is used to synchronise the Energisers. If only one PAE212 is used at a site, set this to 1.
   - Disable DHCP (un-checked)
   - Change the Static IP Address to the one **reserved** at the site
   - Change the Subnet mask, Gateway and DNS Server values to match the information determined for the site
   - Press the [Commit Changes to Devices] button
3. Record the Serial Number of the PAE212 just configured and record the Site this will be installed. The Serial number of the PAE212 is displayed in the Network Name box.

   For example: ETH-151010 is serial number 151010.

WAN Configuration of the Modem (on-site)

To access the PAE212 via the Internet, the Modem connecting the LAN to the Internet must be updated. This may need to be performed by an IT professional on-site.

The Modem/Router must have a Port Forwarded/Redirected to the static IP address of the PAE212.

This is achieved by accessing the settings of the Modem and configuring a Port Forward/Redirect in the Network Address Translation (NAT) section. The following example re-directs port 8087 of a Modem to the PAE212's IP address at Port 17289.
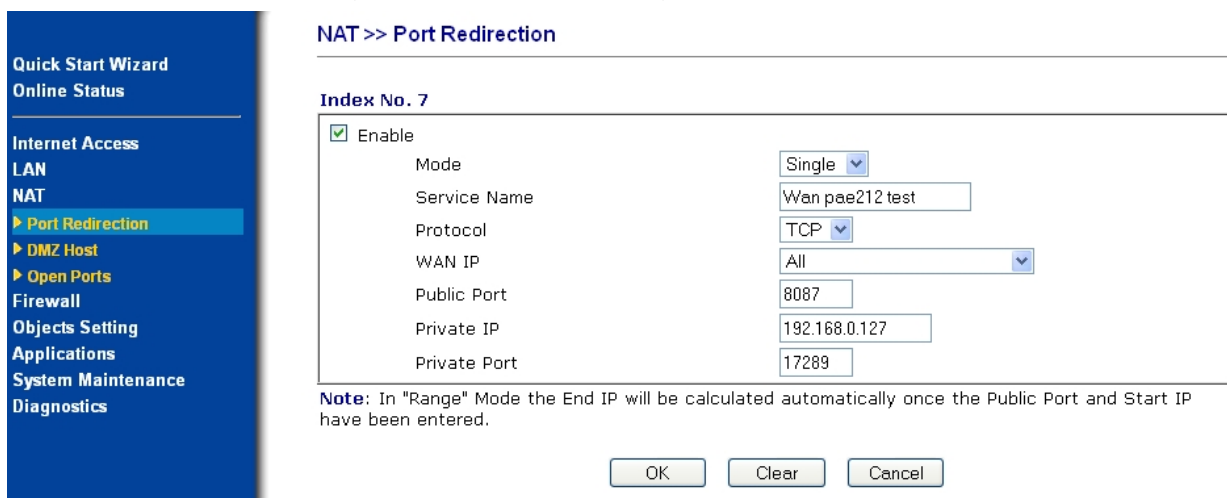
Required settings:

Protocol – TCP

Public Port – Any un-used port

Private IP – The static IP address of the PAE212

Private Port – 17289 (This value must be 17289)

To Determine the IP Address of the Customer's Modem:

- Open Google and type "**what ip address am I**" into the search bar
- Enter http://whatismyipaddress.com/ into the Web Browser address bar

Both options will return something similar to:

IP Information: 123.456.687.9
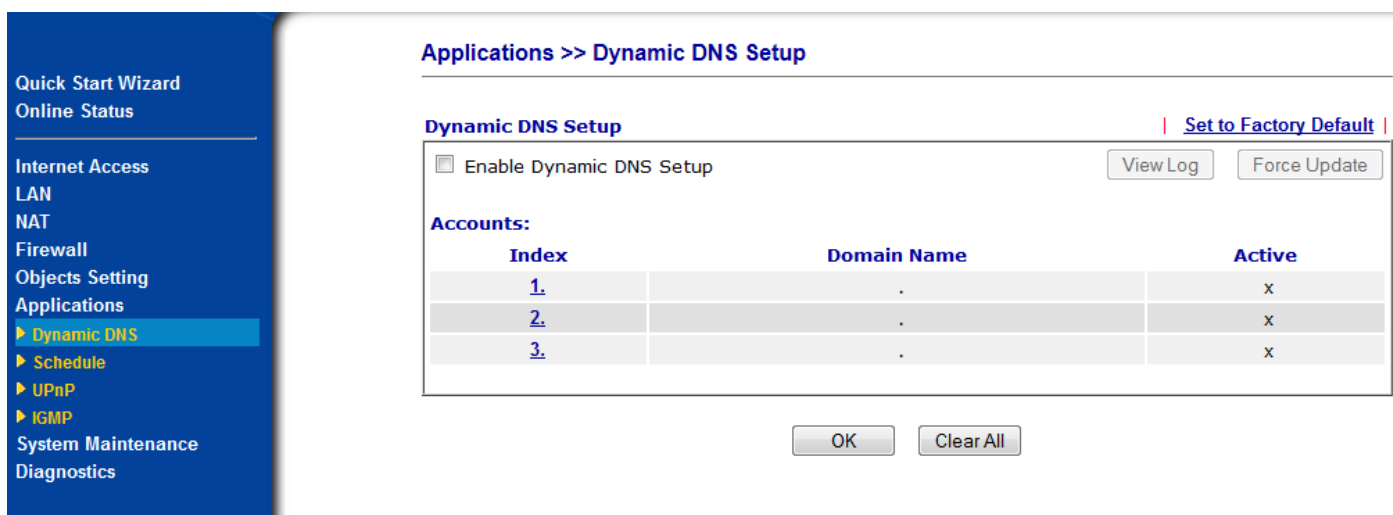
WAN IP addresses that change frequently

The IP address of the site Modem needs to be 'static'. If this is not the case, then a Dynamic DNS service will need to be configured for each site. There are many companies providing this service.

The result will be a Dynamic Name for the site Modem that is automatically translated in Perimeter Patrol to the correct IP address. The Dynamic DNS Name for the JVA website is **jva-fence.com**. This allows the IP address of the jva-fence server to move if required without stopping the service.

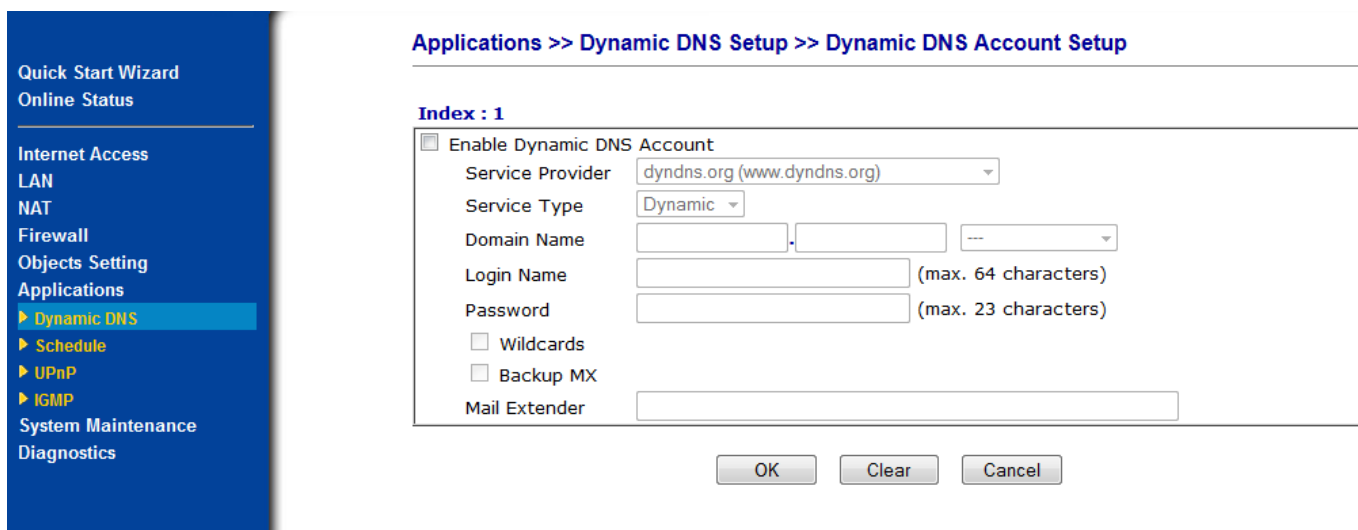## Configuring the site Modem to update the DNS server

Most new Modems provide the option to enable a Dynamic DNS update. This configuration allows the Modem to periodically update the Dynamic DNS provider with the WAN IP address of the site. If this is not available on the site Modem, please refer to the Support section of the Dynamic DNS provider being used.

Example configuration pages in a Modem

Add a new Dynamic DNS Setup and then configure the settings for your site.

Adding the Energisers to Perimeter Patrol

Perimeter Patrol at the Central Site needs to be configured to access the IP address and Port number of each PAE212.

In the ADD/REMOVE ZONES section manually add zones and update the IP and Port for each Energiser connected to the PAE212.

NOTE: The Scan function will not work with a WAN connected PAE212. All Zones will have to be Manually Added

For the above example enter 123.456.687.9 in the IP box and the Public Port number 8087.

Manually Adding Active Zones

An Active Zone can be added to Perimeter Patrol before the PAE212 is connected to the LAN, or before the Energiser is connected to the PAE212. This requires knowledge of the Energiser configuration and the PAE212 Serial number.

1. Pressing the [Add New] button in the ACTIVE ZONES section will create a new Active Zone entry

2. Select the newly created Zone and then update all of the Zone information
   - Enter a suitable NAME for the Zone
   - Select the ENERGISER TYPE from the list of available Z-series Energisers and Monitors
   - Select either **IP Address** or **DNS Lookup** in the CONTACT USING box
   - Enter the address of the PAE212. This is either the Modem IP address and Port being re-directed, or the DNS Name and Port.
   - Enter the Group ID of the Energiser into the KEYPAD BUS ID box
   - Enter the ZONE (CHANNEL) number. This will always be 1 except for a Z-28

Both Zones of a Z-28 need to be Added to the Active Zones box. The only difference between the settings for these is the Zone (Channel), one will be Zone 1, the other Zone 2.

3. When the Energiser and PAE212 are connected to the LAN, the Zone will become active on the Map page. Until this occurs, the Zone will display Coms Fail
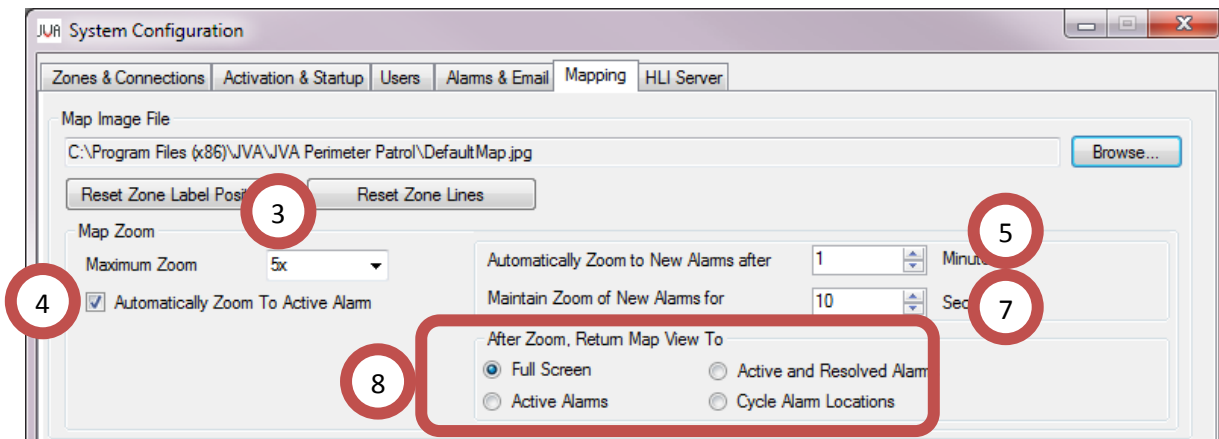
Creating a site Map

1. Find high resolution pictures/maps of each site
2. Crop each image so that it only contains the relevant protected areas
3. Join the images together (use photo editing software or online website to perform the join)
4. Review the joined image in Perimeter Patrol to see if it works. The main goal is to reduce the grey borders surrounding the finished map. This may take some re-arrangement of the images.
5. Adjust the image sizes to get the best layout and resolution within Perimeter Patrol

Enable Map Zooming (from the Perimeter Patrol Configuration Manual)

As this Map will be a high resolution image it is beneficial to turn on Map Zooming

1. In Perimeter Patrol open the SYSTEM CONFIGURATION window (SETUP→SYSTEM CONFIGURATION…)
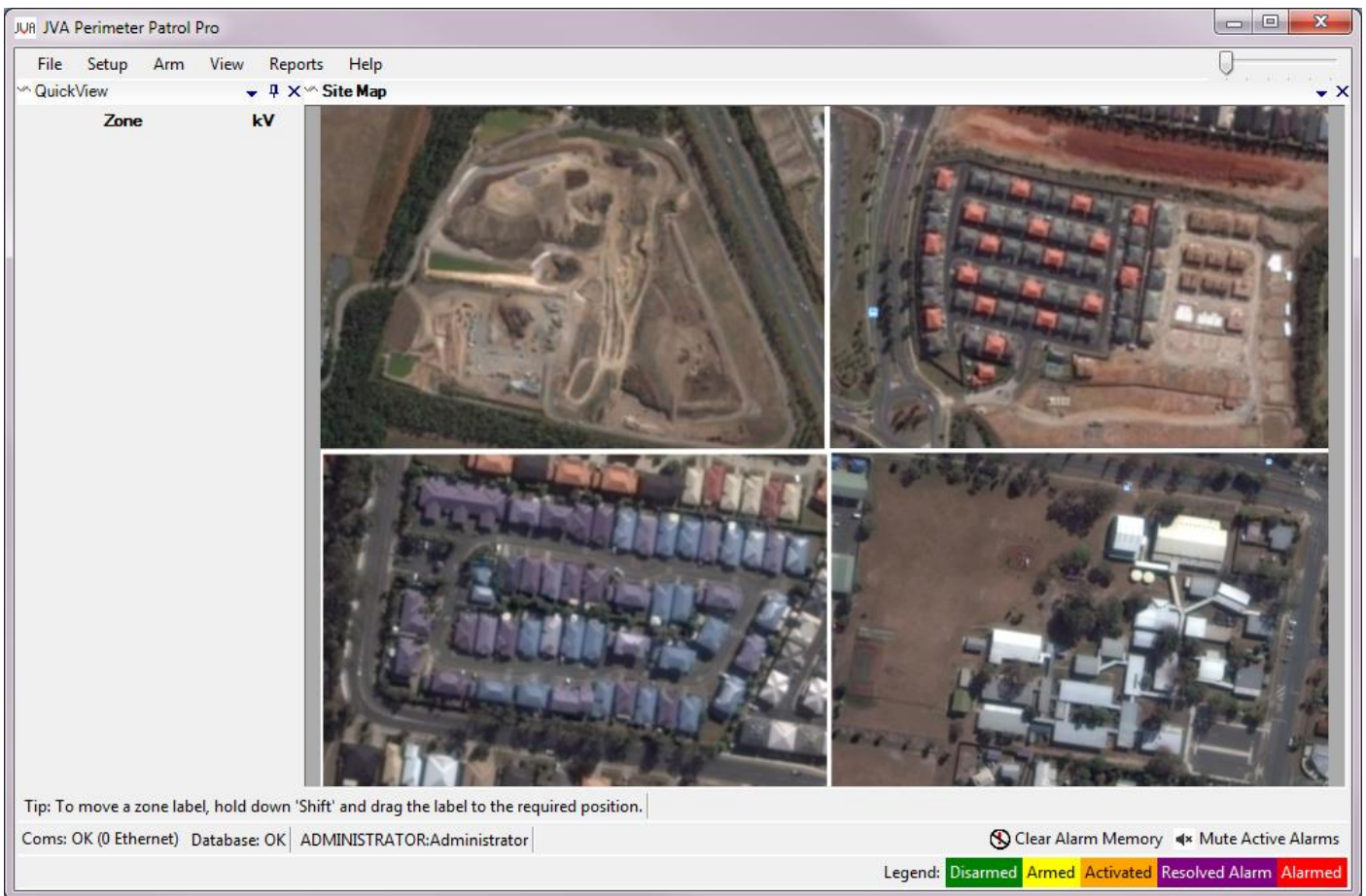2. Select the MAPPING tab

3. Select the Maximum Zoom level you need. You may want to start at the highest (9x) level, draw your zone lines while zoomed in and then decide later what is acceptable

The zoom feature provides 5 steps between 1x zoom and the Maximum Zoom configured. To zoom into a section of the map, you can use the slider at the top right side of the Map, or use the Mouse Scroll Wheel. When using the Scroll Wheel, the map will centre the zoom at the current cursor position in the map.

4. Check the Automatically Zoom To Active Alarm box will allow Perimeter Patrol to take control of the Zoom functionality when a new Alarm occurs
5. The zoom will only occur when the Mouse has been left idle for the specified time
6. Any new alarm that occurs will be centred on the Map at the Maximum zoom level required to fit the entire Zone into the screen
7. This zoom level will be maintained for this specified time
8. After which, the map will return to either:
   Full Screen: The entire Map will be displayed
   Active Alarms: All of the Active Alarms will fill the Map View
   Active and Resolved Alarms: All open alarms will fill the Map View

Moving around a Zoomed map is easy, there is a horizontal and vertical slide bar at the bottom and right side of the map. An easier way is to use the mouse by left clicking then dragging the map. This is similar to other Map systems you have probably already used.

An example of a 4 sites joined and then added to Perimeter Patrol

Site Name   _____

Site Modem (Manufacturer and Model) _____

Modem WAN IP Address   _____:_____:_____:_____

OR Dynamic DNS Address   _____

Site LAN Subnet Mask   _____:_____:_____:_____

Site LAN Gateway   _____:_____:_____:_____

Site LAN DNS Server   _____:_____:_____:_____

    PAE212 Serial Number   ETH - _____

    PAE212 LAN (static) IP Address _____:_____:_____:_____ Port 17289

    Modem (NAT) Port forwarded   Port _____

    Energiser (1) Type   _____

    Energiser (1) Group ID   _____

    Energiser (1) Name   _____

    Energiser (2) Type   _____

    Energiser (2) Group ID   _____

    Energiser (2) Name   _____

    PAE212 Serial Number   ETH - _____

    PAE212 LAN (static) IP Address _____:_____:_____:_____ Port 17289

    Modem (NAT) Port forwarded   Port _____

    Energiser (1) Type   _____

    Energiser (1) Group ID   _____

    Energiser (1) Name   _____

    Energiser (2) Type   _____

    Energiser (2) Group ID   _____

    Energiser (2) Name   _____