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## Technical Document

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### HP Procurve 2810 Configuration for WheatNet-IP

#### Overview

Let's take a look at what needs to be done to get your HP Procurve 2810 switch ready for the installation of your WheatNet-IP system. Properly configuring your switch allows you to take advantage of the "management" capabilities to control network traffic and allows the network to operate at its highest potential. This becomes necessary to prevent overloading the network as the system size increases.

In this setup process you will setup switch ports according to the type of device connecting to that port. You will be setting things like VLAN access, Trunking, Speed, etc. Each section below gives you the exact commands needed to get your WheatNet-IP network up running.

Below is a chart that gives you some information about the commands you will be using to complete the setup. This can be a quick reference for you as proceed through the configuration.

Command	Purpose
Configure Terminal	Enter Global configuration mode on switch
Interface	Enter interface configuration mode
Show running-config	Show the current running configuration
Write memory	Writes the configuration to memory on the switch
IP igmp querier	Enables IGMP querier

This document will explain the initial configuration of the HP Procurve 2810 switch. To get started you will need the HP provided console cable that came with your switch. Go ahead and connect the console cable to the serial port on your PC and the RJ-45 to the console port on the lower left corner on the front panel of the switch. If your PC is not equipped with a serial port you will need a USB to Serial converter.

Next let's get your PC ready to communicate. You will need a terminal program such as HyperTerminal to finish this portion of the setup. HyperTerminal is an application you can use in order to connect your computer to other remote systems. These systems include other switches, routers, other computers, and Telnet sites.

HyperTerminal is located under the Start menu of your Windows 2000/XP PC. If you are using Windows Vista or Windows 7 you will need to install a similar terminal program to complete the setup.

To get started, open HyperTerminal and start a new connection. The terminal session should be setup using 9600Baud, 8 bit, no Parity, and no Flow control.

For those who are familiar with the HP Procurve switches you may wish to jump ahead to the commands. For the rest, keep reading and we'll walk you through it step by step.

Along the way we'll even explain why we use the commands below so that you have some basic understanding of what you are doing. Hopefully you will walk away with some newfound knowledge.

## Privileged EXEC Mode

Now that we are connected to the switch let's login. When logging into an HP Procurve switch under the default configuration, there are two privilege level modes. These modes are Operator and Manager. Operator level will allow you to see configuration information without being able to modify any of the current settings. You also have limited access to the status of the switch. But again, you can't make any changes to the running configuration file.

Because of these limitations, you need to type *enable* to get out of Operator Privilege mode. By default, typing *enable* takes you to "Manager Privileges" mode. Under Manager Privilege there are three additional levels of access, Manager, Global Configuration, Context Configuration.

Let's get started on the configuration of your switch. Type "*enable*" at the prompt. When prompted, enter the password and press Enter again. If no password has been defined just press Enter.

**NOTE:** The command prompt now ends with "#" indicating you are now at the Manager level mode.

**ProCurve#\_**

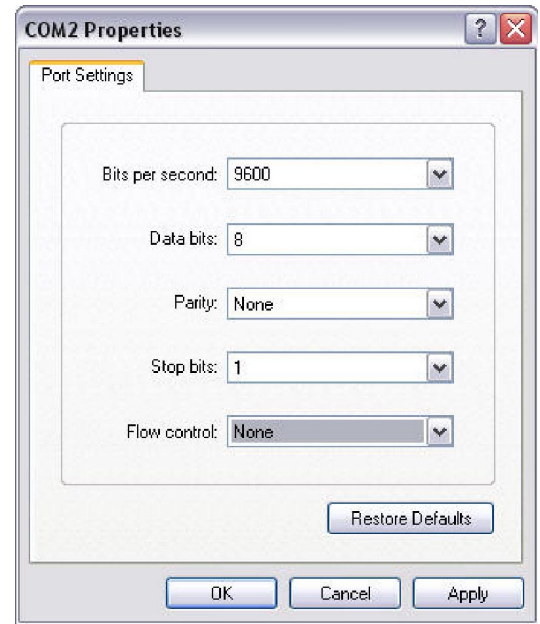
## Global Configuration Level

To enter the IP address and Subnet Mask for the VLAN or configure the switch ports you must first enter the configuration level. To enter the global configuration level type "**Config T**" and press enter. This places the switch in Global configuration mode and will allow configuration from the terminal window for the selected interface. This level is equivalent to having root privileges in UNIX or administrator privileges in Windows. In other words, you have full access to the switch.

You should now have the **ProCurve(config)#** prompt.

## Configuring the VLAN Interface

A VLAN is a switched logical network that is segmented based on the function or application. VLANs are virtual LANs but have the same attributes as the physical LAN. VLANs allow a user to create a virtual broadcast domain in which traffic can be isolated to keep it from reaching unwanted destinations. Any switch port can belong to a VLAN, and unicast, broadcast, and multicast packets are forwarded only to those end stations assigned to that VLAN.



Now that you are in the Global configuration mode you need to select the interface that you would like to configure. We'll start with the default VLAN.

The switch will come with a default VLAN enabled. In the default configuration all ports on the switch have been assigned to VLAN1 (DEFAULT\_VLAN). The command below selects the default VLAN for configuration to segment network traffic on the switch. If you are adding an additional VLAN to existing hardware, substitute that VLAN number in place of 1.

Enter the following commands (“XXX” = the actual network IP address)

```
Vlan1
ip address 192.168.87.XXX 255.255.255.0
end
```

Let's look at what you just setup. By typing “Vlan1” you are entering the configuration for that VLAN. The “IP Address” Command simply sets the IP address of the VLAN1 interface for remote management purposes. The IP address must be unique on the network.

## IGMP Querier Configuration

By default, IGMP is disabled globally on the switch. To setup IGMP Multicast filtering on the switch you must be in the Global configuration mode. To enter the configuration mode once again type “**Config T**” and press enter.

Enter the following commands:

```
ip igmp
ip igmp querier
end
```

The commands above simply enable IGMP on the default VLAN and the querier on the switch.

## Configuring Gigabit Ports Connecting to WheatNet-IP I/O Blades and PC Drivers

Configuring the ports on the HP Procurve Series 2810 is a key step in ensuring optimal performance of the WheatNet-IP network. This section will guide you in the setup of each port used for WheatNet-IP I/O Blades.

To setup ports on the switch you must also be in the Global Configuration mode. To enter the configuration mode once again type “**Config T**” and press enter.

Enter the following commands

```
Interface X (X=the Ethernet port being configured)
speed 1000-FULL
end
```

Ports on the HP Procurve can be configured individually or in a “Range.” If range is desired type **Interface 1 - 24** (for example), using the desire number of ports.

## Configuring Gigabit Port Connecting to WheatNet-IP Navigator PC

The Navigator PC port can be left in the default mode. Speeds will vary depending on the type of network card installed in the PC. It is recommended that a Gigabit card be installed in the PC, however it is not mandatory.

## Configuring Gigabit Ports Connecting to WheatNet-IP Control Surfaces, GP Panels, and XY Controllers

Enter the following commands

```
Interface X (X=the Ethernet port being configured)
speed 100-FULL
end
```

Once again, the ports on the HP Procurve can be configured individually or in a "Range." If range is desired type **Interface 1 - 24** (for example), using the desired number of ports.

## Configuring Ports for Linking to Other Network Switches

Trunk mode is used when connecting another switch to the port.

To set a specified port to trunk mode when connecting to another network switch the port needs to be set for trunk mode. To setup Gigabit ports on the switch you must also be in the Global Configuration mode. To enter the configuration mode once again type "**Config T**" and press enter.

Enter the following commands.

```
Interface X (X=the Ethernet port being configured)
trunk
end
```

## Checking and Saving the Switch Configuration

When you are done, check the switch configuration by typing the following command from the command prompt.

```
show running-config
```

Once you are sure you have the correct configuration you need to save it. You can save the configuration by typing one of the following commands

```
copy running-config startup-config
```

or

```
write memory
```

Below is a diagram that shows you what a typical configuration might look like.

### Sample Switch Configuration

