

# **HP ProCurve Services zl Module**

## Traffic Sentinel Installation and Getting Started Guide



www.procurve.com

Version 1.0

www.InMon.com

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#### **Overview**

The HP ProCurve Services zl Module is shipped from the factory ready for the Traffic Sentinel software image to be downloaded and installed. It does not have any specific application software or an application-related operating system already installed. Instead, a resident Service OS provides the ability to download, install and activate a complete operating system image that includes the Traffic Sentinel application.

After the Traffic Sentinel image is downloaded, installed and activated on the Services zl Module, it becomes joined to that one particular module. Since Services zl Module is not shipped with any specific network function or service until a "Product OS" image is added, it provides a unique ability to become a dedicated "appliance within a switch" after the Traffic Sentinel image is installed and activated.

This document describes the steps needed to install and activate Traffic Sentinel on the Services zl Module. Because the Services zl Module is not a server device, it is necessary to follow the steps described in this document to successfully complete the installation.

Before proceeding, register for accounts both at <u>http://my.procurve.com</u> and at <u>http://www.MyInMon.com</u>. These accounts provide access to product support information, updates, and license keys.

## **Step-by-step instructions**

## 1. Install the Services zl Module hardware

Before installing the Services zl Module into the switch chassis, access the switch CLI to verify the switch has the most current module-compatible software installed. The switch software version should be  $K.13.41^{1}$  or later. Use the following command to check the switch software version:

If the switch software needs to be updated, follow the directions in the **HP ProCurve** Services zl Module Installation and Getting Started Guide to update the software.

<sup>&</sup>lt;sup>1</sup> The switch software version is expected to change.

Next, install the Services zl Module following directions and safety precautions in the **HP ProCurve Services zl Module Installation and Getting Started Guide**.

Verify the module is installed successfully. When the module is installed, it undergoes a self test that takes a few seconds. The LEDs on the front panel of the module help determine if the module has passed the self test. For more information, see the **HP ProCurve Services zl Module Installation and Getting Started Guide.** 

### 2. Download the software image onto the Services zl Module

Contact InMon for software licensing options and instructions on how to acquire access to the Traffic Sentinel product software image.

Once the Traffic Sentinel product software image is received, it can be downloaded onto the Services zl Module using either a USB flash drive or using FTP file transfer through the local network.

#### **Download Using USB Flash Drive**

Copy the image onto a USB flash drive. Make sure the drive is FAT/FAT32 formatted and can hold all files that will be downloaded. If the software image is provided in the form of a zip file, first unzip the image directory and copy all files to the following location on the USB drive:

```
/services/images/AppSW J9xxxA XXXXXX XXXX/
```

Type "services" to list the services installed on the Services zl Module:

```
ProCurve> services <CR>
Installed Services
Slot Index Description
B 1. Services Module
```

Name services-module

The Services zl Module service is in Slot **B** at index **1** and has the name **servicesmodule**. Type either of the following commands to access the Services zl Module CLI:

```
ProCurve# service b 1 <CR>
ProCurve(services-module-B:HD)#
```

or

```
ProCurve# service b name services-module <CR>
ProCurve(services-module-B:HD)#
```

Insert the USB flash drive with the Traffic Sentinel image into the USB slot on the front of the Services zl Module.

**IMPORTANT:** The USB flash drive must be inserted into the USB slot on the front of the Services zl Module, NOT into the USB slot on the switch chassis.

Type the following commands to copy the image to the image repository on the Services zl Module:

```
ProCurve(services-module-B:HD) # usb mount <CR>
ProCurve(services-module-B:HD) # usb copyfrom AppSW_J9xxxA_XXXXX_XXXX <CR>
ProCurve(services-module-B:HD) # usb unmount <CR>
```

#### **Download Using FTP File Transfer**

If the software image is provided in the form of a zip file, first unzip the image directory and copy it (as a sub-directory) to the root directory of an FTP server:

```
/FTP-root/AppSW J9xxxA XXXXXX XXXX/
```

Type "services" to list the services installed on the Services zl Module:

```
ProCurve> services <CR>
Installed Services
Slot Index Description
B 1. Services Module
```

Name services-module

The Services zl Module service is in Slot **B** at index **1** and has the name **servicesmodule**. Type either of the following commands to access the Services zl Module CLI:

ProCurve# service b 1 <CR>
ProCurve(services-module-B:HD)#

#### or

```
ProCurve# service b name services-module <CR>
ProCurve(services-module-B:HD)#
```

Next, type the following command to initiate FTP file transfer:

```
ProCurve(services-module-B:HD) # download ftp <IP-ADDRESS>
APPSW_J9xxxA_XXXXXX_XXXX user <USERNAME> <CR>
```

<IP-ADDRESS> is the IP address of the FTP server to which the product image directory was copied, and <USERNAME> is the optional login ID for the FTP server (enter this login ID only if it's required for FTP server login).

## 3. Install the software image on the Services zl Module

After the Traffic Sentinel software image is downloaded into the Services zl Module image repository (using either USB file copy or FTP transfer), type the following commands to install the image:

```
ProCurve# services b 1 <CR>
ProCurve(services-module-B:HD)# uninstall product <CR>
ProCurve(services-module-B:HD)# install product AppSW_J9xxxA_XXXXX_XXXX
</CR>
```

At this point the software image is installed and ready to be activated.

## 4. Activate the Traffic Sentinel product software image

After the software image is installed onto the Services zl Module, it must be registered and activated before being run for the first time. To do this, first obtain a hardware ID for the Services zl Module by entering the following commands:

ProCurve# services b 1 <CR>
ProCurve(services-module-B:HD)# licenses hardware-id activation <CR>
The hardware Id for package "activation" is
SG000GG000-A-0123456-ABCDEFG-0123456-ABCDEFG

#### Note: SG000GG000 is the serial number of the Services zl Module.

Detailed instructions to find your activation hardware ID are embedded in the My ProCurve portal (https://my.procurve.com) registration pages and are also available in the HP ProCurve Services zl Module Installation and Getting Started Guide.

Use this activation hardware ID to register the Services zl Module through the My ProCurve portal. Sign in to the portal and then click on **My Software** and follow the instructions to complete the registration process. You will be asked to enter the **activation hardware ID** as well as the **registration ID** that was provided along with the Traffic Sentinel product software image.

Once the registration process has completed successfully, you should receive a license key in email and on the screen. This license key must be installed on the Services zl

Module. For instructions on how to install the license key, see the **HP ProCurve** Services zl Module Installation and Getting Started Guide.

The following commands install the license key on the Services zl Module:

```
ProCurve# services b 1 <CR>
ProCurve(services-module-B:HD)# licenses install activation SG0000GG000-A-
0123456-ABCDEFG-0123456-ABCDEFG <CR>
ProCurve(services-module-B:HD)# boot product <CR>
Changing boot from Service OS to Product OS.
System will be rebooted. Do you want to continue [y/n]? y
Rebooting
```

Check the boot progress on the Services zl Module until the Product OS is running (you can use the repeat command to monitor booting progress):

```
ProCurve# show services b <CR>
Status and Counters - Services Module A Status
HP Services zl Module J9154A
Versions : A.01.06, B.01.03
Status : not responding
For more information, use the show commands in services context
ProCurve# repeat <CR>
```

Press any key to exit the repeat command once the "Status" display shows the module is "running".

**IMPORTANT:** The USB flash drive must be removed from the USB slot on the front of the Services zl Module before the module is rebooted. If it is not, the module may appear to "hang" instead of rebooting. To recover, simply remove the USB flash drive, disengage the module from the switch chassis for 5 seconds, then reinsert the module to restart the boot process.

After the Services zl Module reboots, the Traffic Sentinel command line interface (CLI) becomes available.

## 5. Access the Traffic Sentinel CLI

Type "services" in the switch CLI to list the services installed on the Services zl Module:

```
ProCurve# services <CR>
Installed Services
Slot Index Description
B 1. Services Module
B 2. Alliance Partner
```

Name services-module AppSW

The Traffic Sentinel service is now activated in Slot **B** at index **2** and has the name Traffic Sentinel. Type either of the following commands to access the Traffic Sentinel CLI:

```
ProCurve# services b 2 <CR>
ProCurve(AppSW-B)#
```

#### Or

```
ProCurve# services b name AppSW <CR>
ProCurve(AppSW-B)#
```

## 6. Configure the Services zl Module ports into a specific VLAN

The Services zl Module provides two internal Ethernet port connections into the switch after installation. By default, both ports are placed in the default VLAN. For example, if the Services zl Module is installed into slot B of the switch chassis, the internal ports appear as B1 and B2, and are automatically placed in the default VLAN. Depending on the VLAN configuration in the switch, one or both of these ports may need to be reassigned into a different VLAN. This is done by using the switch's management interface, just like any other port on the switch. The VLAN that the internal ports are placed in is important when configuring network parameters (e.g. IP address) for the services on the zl Module. These network parameters need to match the network configuration of the VLAN they are members of.

The VLAN configuration in the switch can be seen using:

For this example, the ports assigned to the default VLAN can be seen using:

```
ProCurve# show vlan 1 <CR>

Status and Counters - VLAN Information - VLAN 1

VLAN ID : 1

Name : DEFAULT_VLAN

Status: Port-based

Voice : No

Jumbo : No

Port Information Mode Unknown VLAN Status

B1 Untagged Learn Up

B2 Untagged Learn Up
```

In this example, if all other switch ports are assigned to VLAN 123, the two Services zl Module ports will also need to be assigned to VLAN 123 in order to be accessible. These ports can be assigned as tagged using:

```
ProCurve# configure <CR>
ProCurve(config)# vlan 123 <CR>
ProCurve(vlan-123)# tagged B1,B2 <CR>
```

or else as untagged using:

```
ProCurve# configure <CR>
ProCurve(config)# vlan 123 <CR>
ProCurve(vlan-123)# untagged B1,B2 <CR>
```

See the **Management and Configuration Guide for the ProCurve Series 3500yl**, **6200yl**, **5400zl**, **and 8200zl Switches** for more information on VLAN configuration.

## 7. Configure Traffic Sentinel using the CLI

Enter the Traffic Sentinel CLI. The available commands are listed if you type the ? or **TAB** character. As you type a command you can press ? or **TAB** at any time to see matching commands or arguments:

```
ProCurve(AppSW-B) # <?>
ipaddr Set module's IP Address
netmask Set module's IP subnet mask
gateway Set module's gateway IP address
hostname Set module's network name
timesync Set time synchronization method
timezone Set time zone
date Set date and time
ntp1 Set primary NTP server
ntp2 Set secondary NTP server
domain Set default domain for DNS
dns1 Set primary DNS server
dns2 Set secondary DNS server
smtp-relay Set sendmail relay
no Negate command or set its defaults
show Show configuration settings
exit Return to switch command context
```

Use the "show" command to verify the settings:

```
ProCurve(AppSW-B) # show <CR>
ipaddr 192.168.1.11
netmask 255.255.255.0
gateway
hostname sentinel.localdomain
timesync switch
timezone America/Los_Angeles
date 11:30:48,06/28/2008
ntp1 0.fedora.pool.ntp.org
ntp2 1.fedora.pool.ntp.org
domain
dns1
dns1
dns2
smtp-relay
```

When entering a command, there may be a delay of a few seconds as the command is processed - this is normal behavior. Wait for the command prompt before trying to enter further commands.

Using the Traffic Sentinel CLI, configure network settings, set time and time zone, synchronize time, set passwords, and set security.

#### 7.1 Setting up networking

Before you can connect to the Traffic Sentinel web interface you will need to configure networking on the module; assigning a hostname, ip address, subnet and configuring the default gateway and dns servers. Traffic Sentinel requires a statically assigned address in order to operate. A dynamically assigned address (i.e. DHCP/BOOTP) is not supported.

The following commands demonstrate how to configure the network settings:

```
ProCurve(AppSW-B) # ipaddr 10.0.0.200 <CR>
ProCurve(AppSW-B) # netmask 255.255.255.0 <CR>
ProCurve(AppSW-B) # gateway 10.0.0.254 <CR>
ProCurve(AppSW-B) # hostname sentinel.mycompany.com <CR>
ProCurve(AppSW-B) # domain mycompany.com <CR>
ProCurve(AppSW-B) # dns1 10.1.1.1 <CR>
ProCurve(AppSW-B) # dns2 10.1.2.1 <CR>
```

## 7.2 Setting time

An accurate and stable clock is very important for ensuring accurate traffic measurements. The following configuration options ensure that time is correctly maintained.

#### 7.2.1 Setting time zone

First, set the timezone. The time zone setting is based on geographical location. Once selected time will be correctly displayed for your location, automatically taking into account daylight savings time if needed.

The following command sets the time zone for Los Angeles:

ProCurve(AppSW-B) # timezone America/Los\_Angeles <CR>

To list the available timezone settings, type the following:

```
ProCurve(AppSW-B) # timezone <?>
Africa/Abidjan
Africa/Accra
Africa/Addis_Ababa
Africa/Algiers
Africa/Asmara
Africa/Bamako
Africa/Bangui
Africa/Banjul
Africa/Bissau
Africa/Blantyre
Africa/Brazzaville
```

Africa/Bujumbura
Africa/Cairo
Africa/Casablanca
Africa/Ceuta
Africa/Conakry
Africa/Dakar
Africa/Dar_es_Salaam
Africa/Djibouti
Africa/Douala
Africa/El_Aaiun
Africa/Freetown
Africa/Gaborone
MORE, next page: Space, quit: Any Key

If your city isn't listed, pick any city in your time zone.

#### 7.2.2 Time Synchronization

There are two ways to synchronize time on the Services Module; synchronizing with the switch clock or synchronizing with external time servers using the Network Time Protocol (NTP). Select the time synchronization policy that best fits your environment. NTP provides the most accurate and stable clock and should be selected where possible.

#### 7.2.2.1 Synchronize to switch

If you are going to synchronize to the switch clock, then you should make sure that your have configured time correctly on the switch. You will need to set the time and date, time zone, daylight savings time rule. You should also configure time synchronization on the switch, selecting either timep or sntp.

The following commands illustrate the steps needed to configure the switch for San Francisco using a timep server:

ProCurve(config)# ip timep manual 10.0.0.1 interval 240 <CR>
ProCurve(config)# time timezone -480 <CR>
ProCurve(config)# time daylight-time-rule continental-us-and-canada <CR>
ProCurve(config)# timesync timep <CR>
ProCurve(config)# write memory <CR>

Once you have configured the switch, verify that the time is correct:

```
ProCurve(config)# show time
Thu Jul 24 21:56:21 2008
```

For additional information on configuring time on the switch, consult your ProCurve configuration guide.

Connect to the Services Module and configure it to synchronize with the switch:

ProCurve(AppSW-B) # timesync switch <CR>

Use the show command to verify that the Services Module time is correct:

```
ProCurve(AppSW-B) # show date <CR>
21:57:33,07/24/2008
```

If there are discrepancies, it is likely that there is a difference in time zone and daylight savings time settings between the switch and the Services Module. You can verify the Services Module time zone with the show command:

```
ProCurve(AppSW-B)# show timezone <CR>
America/Los Angeles
```

#### 7.2.2.2 Synchronize using NTP

First specify the NTP servers to synchronize with. The default NTP servers will provide time synchronization as long as the Services Module has Internet access. Alternate servers can be specified using the following commands:

```
ProCurve(AppSW-B) # ntp1 time1.mycompany.com <CR>
ProCurve(AppSW-B) # ntp2 time2.mycompany.com <CR>
```

The following command will enable NTP synchronization:

ProCurve(AppSW-B) # timesync ntp <CR>

Use the show command to verify that the time is correct on the Services Module. If there are discrepencies, it is likely that the time zone is set incorrectly, or that the selected ntp servers are not reachable.

You should never need to set time directly since time synchronization will be setting time automatically. If time is too far off its correct value, the NTP protocol might not be able to maintain synchronization. The following commands are provided to manually set the time close to the correct value:

ProCurve(AppSW-B) # date 17:00,4/30/2008 <CR>

or if you just want to adjust the time:

ProCurve(AppSW-B) # date 17:00 <CR>

**Note:** Manually set time and date values will be automatically overridden by the time protocol.

#### 7.3 Setting up email

Traffic Sentinel can email reports and events. By default it will use SMTP (Simple Mail Transfer Protocol) to deliver email directly to each recipient. If you have an existing SMTP server you may want to change the configuration so that all email is relayed through your existing server.

```
ProCurve(AppSW-B) # smtp-relay mail.mycompany.com <CR>
```

## 8. Access the Traffic Sentinel Web interface

Once you have configured the required basic network settings through the CLI you can connect to Traffic Sentinel using a Web browser. Just go to http://<configured ip>/.

🛿 Service Module Swi	tch - ProCurve Switc	h 5406zl (J8697A)	- Mozilla Fire 🔲 🗖 🔀
Eile Edit ⊻iew History Boo	okmarks <u>T</u> ools <u>H</u> elp		0
ProCurve Networking by HP	Switch 54	06zl	<u>Help</u>   <u>Refresh</u>
Identity Status	Configuration	Security Diag	nostiles Support
Device View	Fault Detection	System Info	IP Configuration
Port Configuration	Quality of Service	Monitor Port	Device Features
VLAN Configuration	Support/Mgmt URL	Upload/Download	PoE Configuration
Click on a port or its LED to select it. for the <u>meaning of the port icons</u> .	If you wish to select several ports at o	nce, hold down the Ctrl key while (	clicking on the additional ports. Click here
ProCurve Pro Switch 5406zl J8697A PoE	Curve Networking HP Innovation SL No. 96963078U System MAC Addr 00 1f 28 29 a0 00	0CB	
Fault A		1 (B) Services Module	(Details)
		Module Module Locator	Status Status Activity Activity
	a ka ka ka ka ka j	Shutdown	USB
C C			
		0	Ø
Ē		Ē	
		0 0	0
Select All Ports	Fns	ble Selected Ports	
Deselect All Ports		able Selected Ports	
	Dis		
For advanced configuration	start a <u>telnet session to the sw</u>	vitch console.	

You can also access the Traffic Sentinel Web interface by clicking on the **[Details]** link associated with the Services zl Module on the Device View of the ProCurve switch web management interface

## 9. Configure Traffic Sentinel using the Web interface

Before proceeding, you will need the license number and software key that you obtained when registering at <u>http://www.MyInMon.com</u>.

Traffic Sentinel is configured through it's web interface. Connect to the web interface as described in **8.** Access the Traffic Sentinel Web interface above. If this is the first time you have accessed Traffic Sentinel you should see the following screen:

Traffic Sentinel - Mozilla Firefox	
Eile Edit View History Bookmarks Tools Help	**** ****
mmon Traffic Sentinel	Welcome, Guest [Login]
File Home Events Traffic Signatures Reports Maps Search	Help
About   Configure   Control   Status   Logs   Upgrade   Forwarding   Users	
End User License Agreement	
PLEASE READ THIS LICENSE AGREEMENT ("AGREEMENT") CAREFULLY. BY USING ALL OR ANY PART OF THE SOFTWARE ("SOFTWARE") AND/OR ACCOMPANYING DOCUMENTATION ("DOCUMENTATION"), YOU AGREE TO BE BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO BE BOUND BY THE TERMS OF THIS AGREEMENT, DO NOT USE THE SOFTWARE OR THE DOCUMENTATION.	
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Traffic Sentinel - Mozilla Firefox	
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3	~
Reject License 🚺 Accept License	=
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The next step is to enter an initial configuration.

🕲 Traffic Sentinel - Mozilla Firefox 📃 🗌	
Eile <u>E</u> dit ⊻iew Hi <u>s</u> tory <u>B</u> ookmarks <u>T</u> ools <u>H</u> elp	
Welcome, Gues	t [ <u>Loqin]</u>
File Home Events Traffic Signatures Reports Maps Search	Help
About   Configure   Control   Status   Logs   Upgrade   Forwarding   Users	
You have accepted the terms of the End User License Agreement. Before you can use the software you will need to go to the <u>File&gt;Configure</u> age and enter your license numb and software key.	er
Copyright © 1999-2008 InMon Corp. ALL RIGHTS RE	SERVED

Click on the **File>Configure** link to go to the configuration screen:

Traffic Sentinel - Mozilla Firefox	
Eile Edit ⊻iew History Bookmarks <u>T</u> ools Help	÷
mon Traffic Sentinel	Welcome, <b>Guest</b> [Login]
File Home Events Traffic Signatures Reports Maps Search	Help
About   <u>Configure</u>   Control   Status   Logs   Upgrade   Forwarding   Users	
Login User administrator Password Submit	
The default <i>administrator</i> password is <b>administrator</b> and the default <i>open</i> write these passwords down, they will not be displayed again. You should a as possible.	ator password is <b>operator</b> . Please hange the default passwords as soon
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You will need to log in as an administrator in order to make configuration changes. Use the default username and password for the initial login (i.e. User: administrator, Password: administrator).

Traffic Sentinel - Mozilla Firefo	ox 📃 🗖 🗙
Eile Edit ⊻iew History Bookmarks Tools	Help
(mMon) Traffic Sentinel	Welcome, administrator (Logout)
File Home Events Traffic Signatures	Reports Maps Search Help
About   <u>Configure</u>   Control   Status   Logs   Upgra	ade   Forwarding   Users
Options:	
Show   Edit   XML	
Index > Enterprise > Site	
	Site Settings
Enternal an Nama	
Enterprise Name	Inmon
Site Name	HQ
Server	sentinel.sf.inmon.com
Serial Number	ITS080328001
Software Key	01010402044867a9b78a0fcb6f65ec12e58082edb90c0c
Contact Name	Peter Phaal
Contact Location	California St.
Contact Phone	415-283-3260
Minutes of Real-time Data	480
Days of Historical Data	35
Mbytes of Free Disk Space	400
	Back Reset Submit
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Enter the Traffic Sentinel **Software Key** and **Serial Number** that were issued for your Service Module. The other fields in the **Site Settings** form identify the network being monitored and provide contact information for the administrator responsible for Traffic Sentinel.

**Note:** Online help is available for each screen, just click on the Help link at the top right of the screen.

If the software key has been accepted, the following configuration screen will appear giving access to all the configuration options:

👻 Traffic Sentinel - Mozilla Firefox 📃 🗖 🔀
Eile Edit View History Bookmarks Tools Help
Welcome, administrator [Logout]
File Home Events Traffic Signatures Reports Maps Search Help
About   <u>Configure</u>   Control   Status   Logs   Upgrade   Forwarding   Users
Options:
Show   Edit   XML
Index > <u>Site</u> > <u>Zone</u> > <u>Group</u> > [ <u>CIDR   CIDR(IPv6)</u>   <u>Agent Range</u>   <u>Agent</u> > <u>Interface</u> ]
Server
<ul> <li>Edit Site Change site name, contact information and software key</li> </ul>
Groupings
Edit Zones Divide the network into Zones
<ul> <li>Edit Groups Divide each Zone into Groups</li> </ul>
<ul> <li>Edit CIDRs Specify a subnet in CIDR notation and assign it to a Group</li> <li>Edit CIDRs (IPv6) Specify an IPv6 subnet in CIDR notation and assign it to a Group</li> <li>Edit Agent Ranges Specify a range of addresses containing Agents and assign it to a Group</li> <li>Edit Agents Identify an Agent by address and assign it to a Group</li> </ul>
<ul> <li>Edit Interfaces Identify a specific Interface on an Agent</li> </ul>
Settings
<ul> <li>Edit Threshold Settings Specify thresholds on interface utilization and counters</li> <li>Edit SNMP Settings Specify SNMP authentication and version settings</li> <li>Edit Sampling Settings Specify packet sampling rates</li> </ul>
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Traffic Sentinel uses SNMP to configure sFlow monitoring on HP ProCurve switches. Traffic Sentinel can be configured to automatically discover and configure sFlow provided that it is given the read-write SNMP community string and has "manager" privileges on the switch.

Click on the **Edit SNMP Settings** link on the Traffic Sentinel configuration screen to set configure the SNMP settings. Click on the **Edit Agent Ranges** link to add ranges of IP

addresses that the auto-discover process should scan in its search for ProCurve switches. Individual switches can be added by clicking on the **Edit Agents** link.

For further information on configuring Traffic Sentinel, consult the online help and the **Configuring Traffic Sentinel** tutorial at <u>http://www.lnMon.com/support/</u>.

## **10. Rebooting the Services zl Module**

Rebooting should not normally be required and can potentially result in data loss. If for some reason the Services zl Module becomes unresponsive, the following commands can be used to reboot:

```
ProCurve# service b 1
ProCurve(services-module-B:PR)# boot <CR>
System will be rebooted, do you want to continue [y/n]? y
```

or

```
ProCurve# service b name services-module
ProCurve(services-module-B:PR)# boot <CR>
System will be rebooted, do you want to continue [y/n]? y
```

## **11. Technical Support**

The Services zl Module is a hardware platform that allows application vendors to make minor changes in their existing application software to run in a switch chassis. With a wide variety of applications available from several vendors, HP is committed to providing an "initial point of contact" for technical support. During this process, HP will verify the installation, configuration, activation licensing, and warranty claims on the Services zl Module. For problems concerning the application software, such as configuration or licensing of the application from the vendor, HP may have to redirect technical support to the application vendor to provide the best resources for solving a support issue. Consequently, if you are confident that the technical support issue resides within the application, it may be expeditious to contact the application vendor directly.

For access to HP ProCurve support, go to: <a href="http://www.procurve.com/customercare/support/">http://www.procurve.com/customercare/support/</a>

For troubleshooting tips, tutorials and Frequently Asked Questions, go to <a href="http://www.lnMon.com/support/">http://www.lnMon.com/support/</a>

#### 11.1 Accessing the "Technical Support" interface

A "technical support" shell is provided to allow support staff to perform tests and access log files. This is a Linux shell environment. You should only use this interface if you are familiar with Linux or have been instructed to perform a test or provide additional troubleshooting information.

Type the following command to enter the technical support shell:

```
ProCurve# config
ProCurve(config)# services b tech <CR>
<CR>
[tech@sentinel ~]$
```

Note: You must be in "Global Configuration Level" for this command to succeed.

Type CTRL-Z to leave the support shell:

```
[tech@sentinel ~]$ <CTRL-Z>
ProCurve(config)#
```

The **sudo** command is provided to allow root privilege operations to be performed. If you are going to edit or examine Traffic Sentinel log files, then the following command will give you the minimum privilege level needed for these operations and will place you in the product home directory:

```
[tech@sentinel ~]$ sudo su - inmsf
-bash-3.2$
```

type "exit" to return to the technical support shell:

```
-bash-3.2$ exit
logout
[tech@sentinel ~]$
```