HP AllianceONE Advanced Services zl Module

Traffic Sentinel Installation and Getting Started Guide

Software Credits and Notices

SSL on HP networking switches is based on the OpenSSL software toolkit. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. For more information on OpenSSL, visit www.openssl.org.

Open Source Software Acknowledgement

This software incorporates open source components that are governed by the GNU General Public License (GPL). In accordance with this license, HP will make available a complete, machine readable copy of the source code components covered by the GNU GPL upon receipt of a written request. Send a request to:

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Hewlett-Packard Company, L.P.
HP AllianceONE Advanced Services zl Module
GNU GPL Source Code
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Disclaimer

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Overview

The HP AllianceONE Advanced 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 a 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 a Services zl Module. Because a 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 an account at http://www.MyInMon.com. The account provides access to product support information, updates, and license keys.

Step-by-step instructions

1. Install the Services zl Module hardware

Before installing a 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.14.60** or later. Use the following command to check the switch software version:

```
hostswitch# show version <CR>

Image stamp:    ...
       <date, time>
       K.14.XX
       ...
Boot Image:    Primary
```

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

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

Verify the module is installed successfully. When a 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 AllianceONE Advanced 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 a 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:

```
/images/Traffic_Sentinel_J9437A_XXXXXX_XXXX/
```

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

```
hostswitch# services <CR>

              Installed Services
 Slot    Index Description                              Name
 B          1. Services Module                         services-module
```

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

```
hostswitch# service b 1 <CR>
hostswitch(svcs-mod-B:SvcOS)#
```

or

```
hostswitch# service b name services-module <CR>
hostswitch(svcs-mod-B:SvcOS)#
```

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:

```
hostswitch(svcs-mod-B:SvcOS)# usb mount   <CR>

hostswitch(svcs-mod-B:SvcOS)# usb copyfrom
Traffic_Sentinel_J9437A_XXXXXX_XXXX <CR>

hostswitch(svcs-mod-B:SvcOS)# 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/Traffic_Sentinel_J9437A_XXXXXX_XXXX/
```

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

```
hostswitch> services <CR>

              Installed Services
 Slot   Index Description                         Name
 B         1. Services Module                     services-module
```

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

```
hostswitch# service b 1 <CR>
hostswitch(svcs-mod-B:SvcOS)#
```

or

```
hostswitch# service b name services-module <CR>
hostswitch(svcs-mod-B:SvcOS)#
```

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

```
hostswitch(svcs-mod-B:SvcOS)# download ftp <IP-ADDRESS>
Traffic_Sentinel_J9437A_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:

```
hostswitch# services b 1 <CR>

hostswitch(svcs-mod-B:SvcOS)# uninstall product <CR>

hostswitch(svcs-mod-B:SvcOS)# install product
Traffic_Sentinel_J9437A_XXXXXX_XXXX  <CR>
```

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

4. Activate the Traffic Sentinel product software image

The following commands start the Traffic Sentinel image on the Services zl Module:

```
hostswitch# services b 1 <CR>

hostswitch(svcs-mod-B:SvcOS)# boot ONE-app <CR>
Changing boot from CF 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):

```
hostswitch# 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

hostswitch# 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:

```
hostswitch# services <CR>
              Installed Services
 Slot   Index Description                              Name
 B          1. Services Module                         services-module
 B          2. Traffic Sentinel                        sentinel
```

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:

```
hostswitch# services b 2 <CR>
hostswitch(sentinel-B)#
```

Or

```
hostswitch# services b name sentinel <CR>
hostswitch(sentinel-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:

```
hostswitch# show vlans <CR>

Status and Counters – VLAN Information

 Maximum VLANs to support : 256
 Primary VLAN : DEFAULT_VLAN
 Management VLAN :

 VLAN ID Name                   | Status     Voice Jumbo
 ------- ------------------- + ---------- ----- -----
 1       DEFAULT_VLAN           | Port-based No    No
 123     VLAN_123               | Port-based No    No
```

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

```
hostswitch# 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:

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

Or else as untagged using:

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

See the **Management and Configuration Guide for the HP 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:

```
hostswitch(sentinel-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:

```
hostswitch(sentinel-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
 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:

```
hostswitch(sentinel-B)# ipaddr 10.0.0.200 <CR>
hostswitch(sentinel-B)# netmask 255.255.255.0 <CR>
hostswitch(sentinel-B)# gateway 10.0.0.254 <CR>
hostswitch(sentinel-B)# hostname sentinel.mycompany.com <CR>
hostswitch(sentinel-B)# domain mycompany.com <CR>
hostswitch(sentinel-B)# dns1 10.1.1.1 <CR>
hostswitch(sentinel-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, the 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:

```
hostswitch(sentinel-B)# timezone America/Los_Angeles <CR>
```

To list the available timezone settings, type the following:

```
hostswitch(sentinel-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 you 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:

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

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

```
hostswitch(config)# show time <CR>
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:

```
hostswitch(sentinel-B)# timesync switch <CR>
```

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

```
hostswitch(sentinel-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:

```
hostswitch(sentinel-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:

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

The following command will enable NTP synchronization:

```
hostswitch(sentinel-B)# timesync ntp <CR>
```

Use the show command to verify that the time is correct on the Services Module. If there are discrepancies, 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:

```
hostswitch(sentinel-B)# date 17:00,4/30/2008 <CR>
```

or if you just want to adjust the time:

```
hostswitch(sentinel-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.

```
hostswitch(sentinel-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>/.

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 HP networking switch Web management interface.
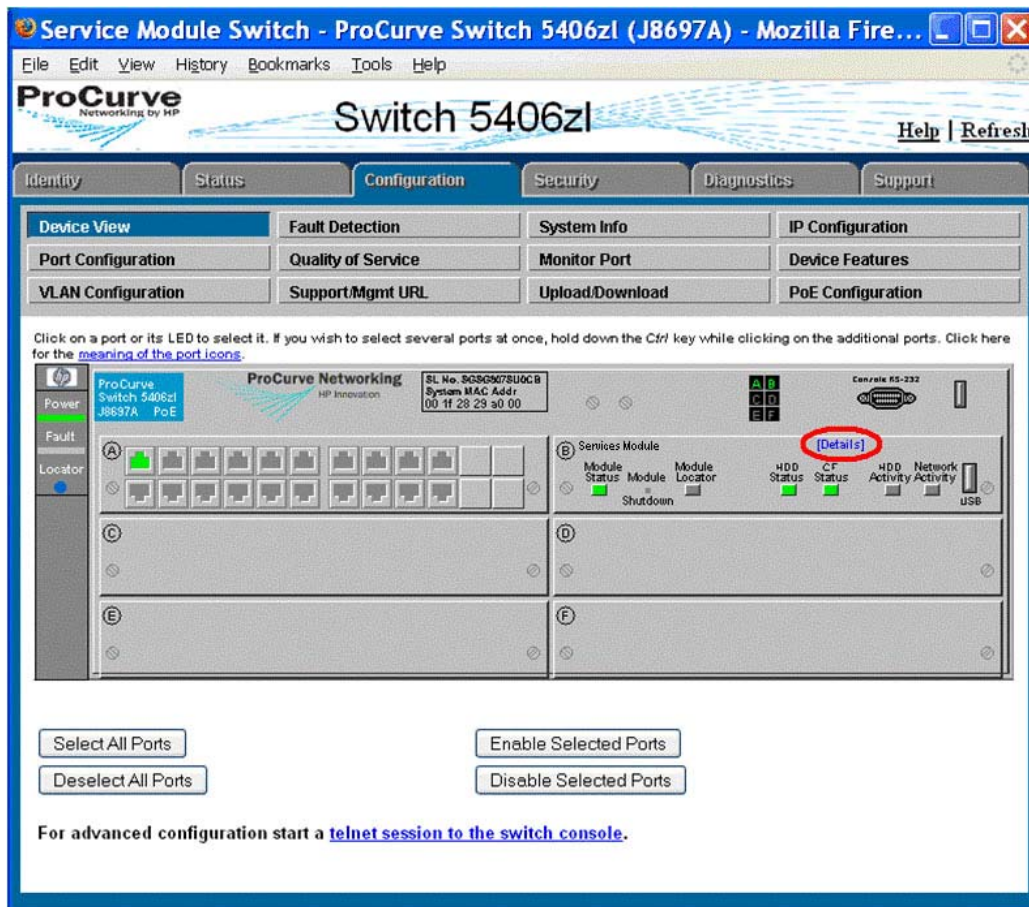
9. Configure Traffic Sentinel using the Web interface

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

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:
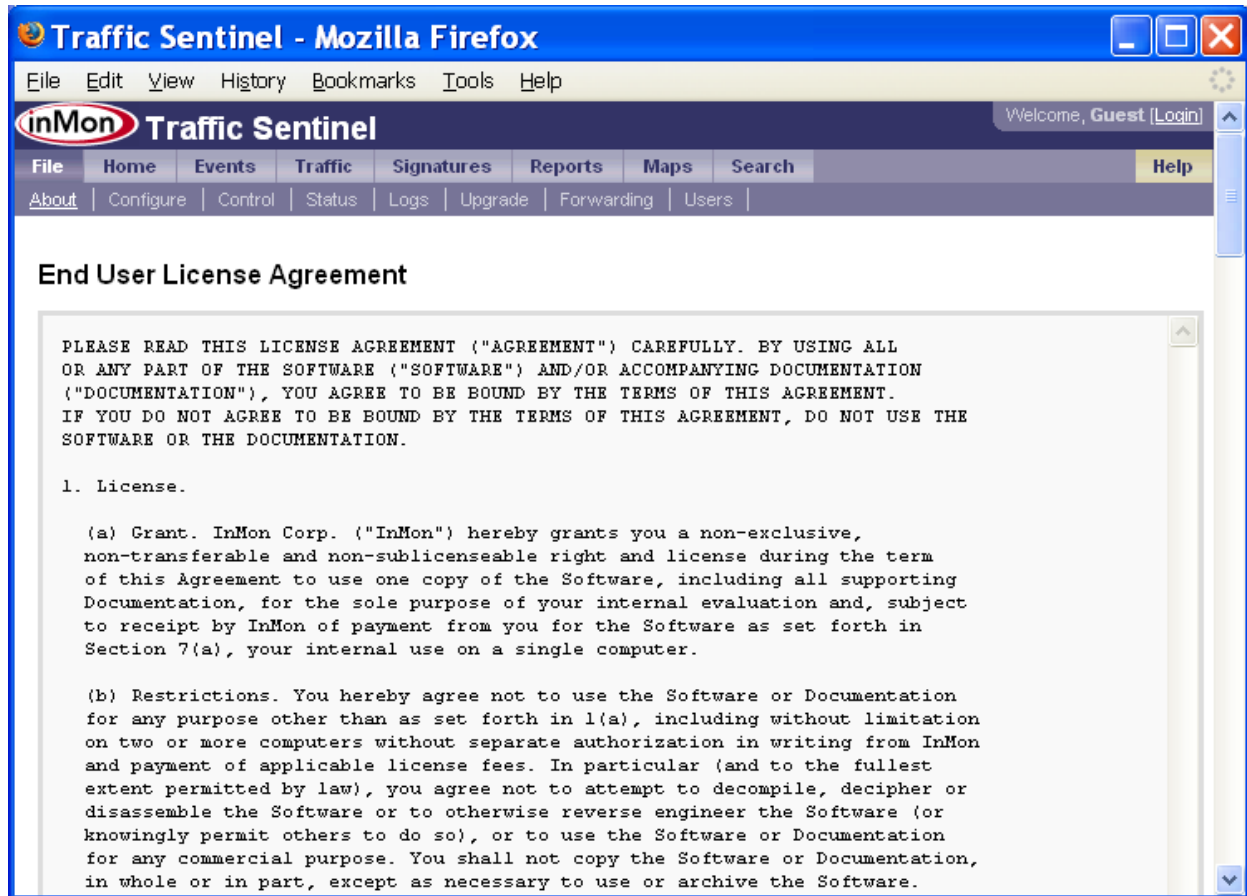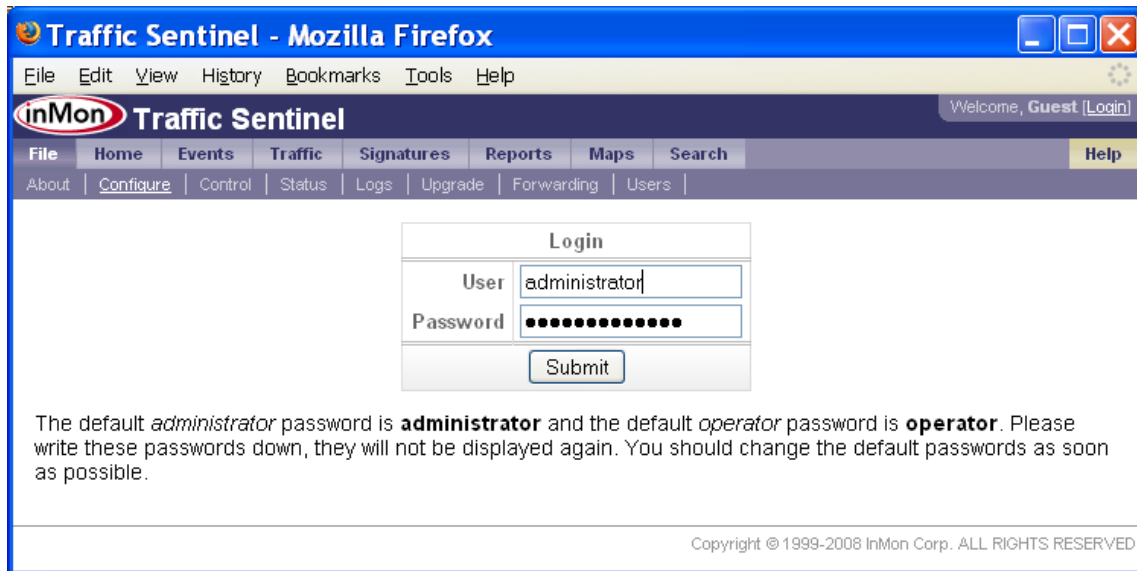

Scroll down to the bottom of the **End User License Agreement** and click on the Accept License button.
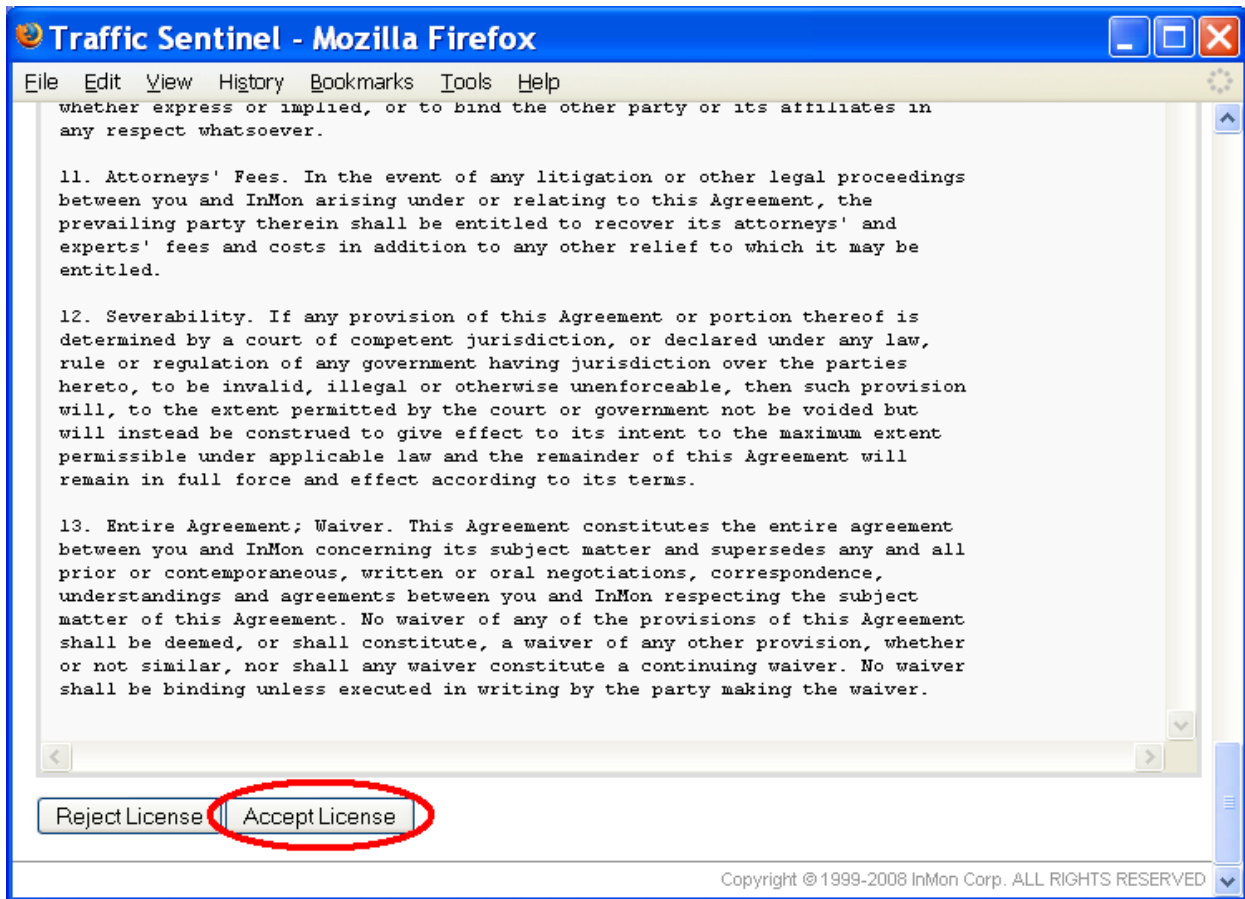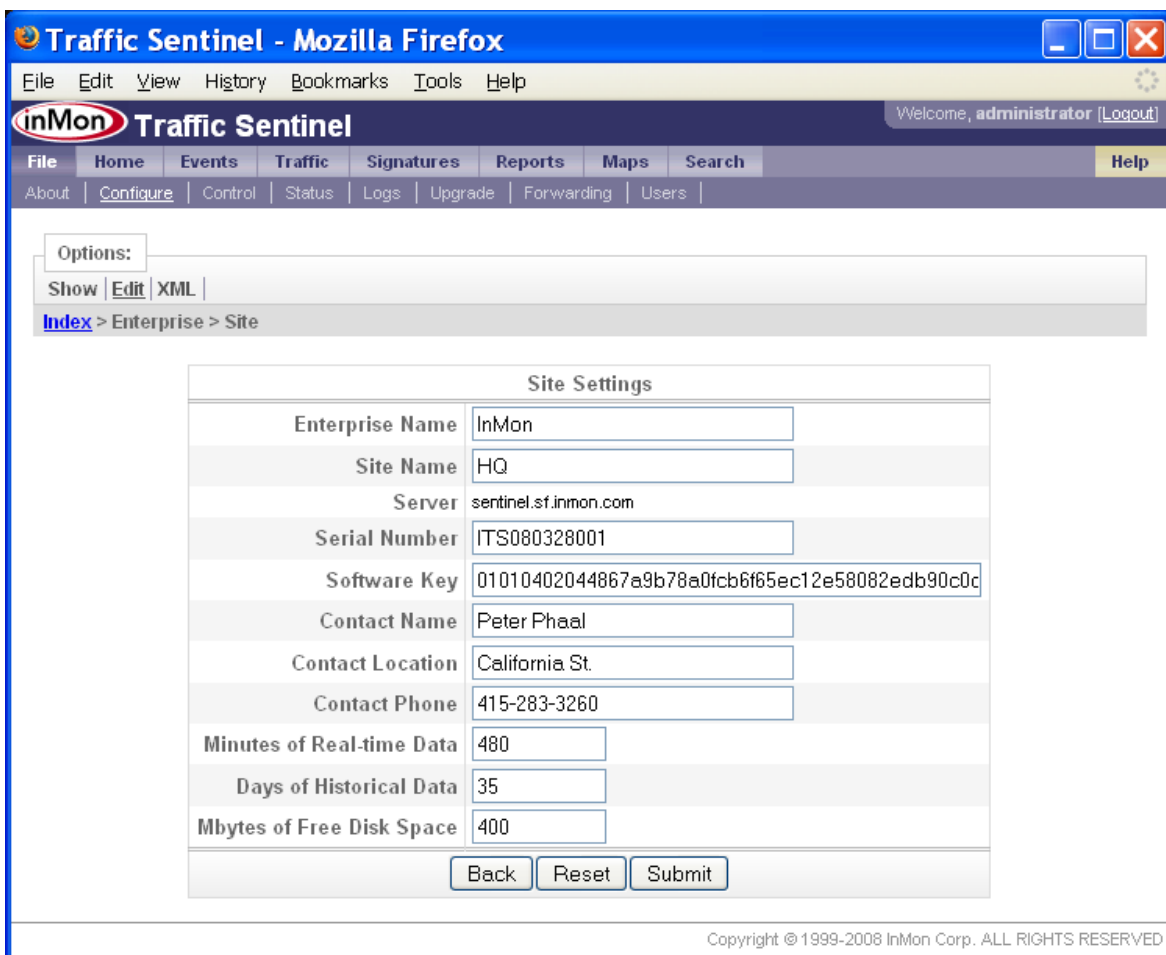
The next step is to enter an initial configuration.

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

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).

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 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 http://www.InMon.com/support/.

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:

```
hostswitch# service b 1

hostswitch(svcs-mod-B:App)# boot <CR>

System will be rebooted, do you want to continue [y/n]? y
```

Or:

```
hostswitch# service b name services-module

hostswitch(svcs-mod-B:App)# 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 networking support, go to:
http://www.hp.com/networking/support

For troubleshooting tips, tutorials and Frequently Asked Questions, go to
http://www.InMon.com/support

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:

```
hostswitch# config
hostswitch(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>
hostswitch(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 ~]$
```