HP 5130 switches a basic production deployment example

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Disclaimer

The author of this document shall not carry responsibility for any damage to the network, switch(s), computer(s), software or hardware either direct or indirect as a result of following the instructions herein.

Introduction

This document provides a basic production deployment example on the **HP 5130-24G-PoE+-4SFP+ (370W) EI JG936A** switches.

This document is intended for I.T. and/or network professionals. However, other users with basic network understanding may find this document useful and straight forward to follow.

Note:

- The commands used herein may also work on different switch make and models, please refer to the reference manual of your switch to compare commands syntax first
- For simplicity this document uses username "**my_username**" and password "**my_passw0rd**". As a general rule, a strong password and a more complex username must be used on production devices
- This document uses **PuTTy** as the tool to communicate with the switch
- If you are still experiencing, you may not save the configuration, simply reboot without saving or just unplug the power cord from the switch
- The instructions herein give basic deployment example, you may alter as per your department and security requirements

Requirements

- HP 5130-24G-PoE+-4SFP+ (370W) EI JG936A switch
- An Ethernet cord
- A PC capable of hosting a 9 Pin serial cable (*this will be the console cable provided as part of the switch package contents*)
- **PuTTy** or similar tool to establish connection to the switch (***ensure safe download links***)

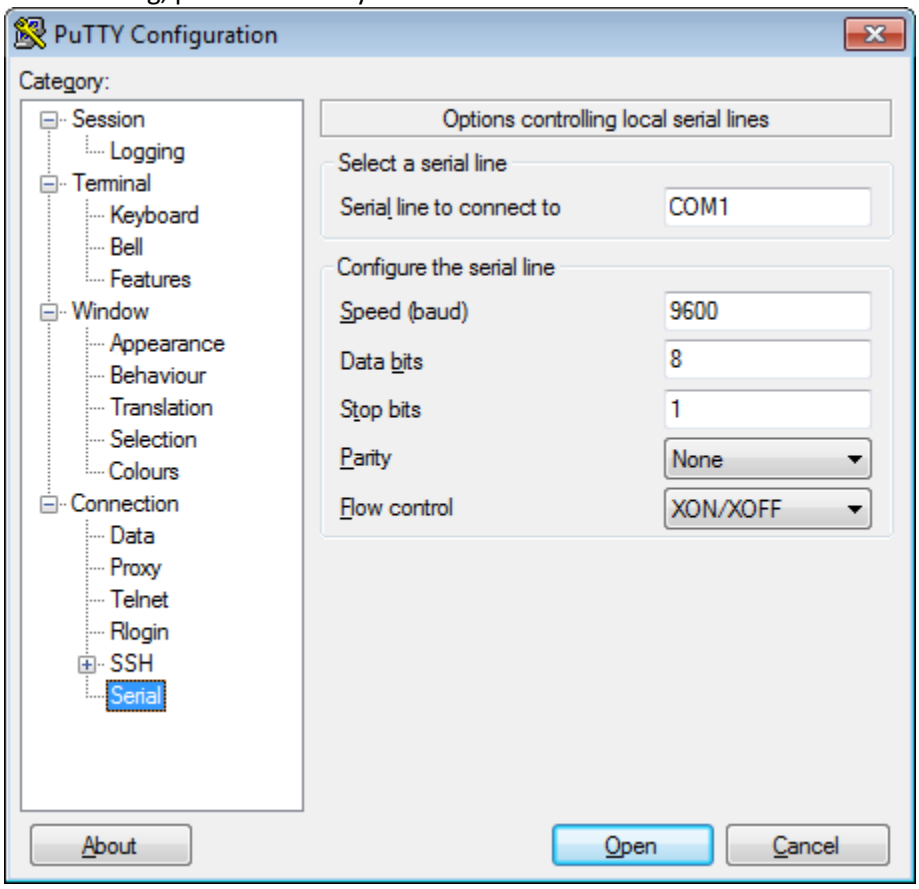
Brief

- Download **PuTTy** or a similar tool to establish connection to the switch (***ensure safe download links***)
- Establish a connection to switch using the console cable (*part of the switch package contents*)
- Change system name (*my_sysname used as an example*)
- Change time zone and setup **NTP** (EST, *128.100.100.128 and 128.700.72.168 used as an example*)
- Assign an IP address to the VLAN to use from within your subnet pool *(example: 192.168.1.10)*
- Enable DHCP snooping to block rogue and unauthorized traffic (*enable service, trust server port where the authorized DHCP server is connected to; port #23 used in our example, bind client ports where the client computers are connected to; ports 9 to 16 used as an example*)
- Enable POE on ports 1 to 8 (*just as an example*)
- Configure console
- IP route-static to the existing gateway address *(example: 192.168.1.1)* so that the switch is able to reach external sources such as the **NTP** server(s) to sync time from
- Enable SSH, FTP, HTTPS services
- Setup login username and password
- Configure user role
- Test connection sessions, save and reboot the switch

Procedure

1. Power ON the switch and connect the console cable between the PC and the console port of the switch

2. Use **PuTTy** or similar tool to establish a serial connection to the switch. Typical **COM** port configuration may look like the following, please refer to your switch reference manual for accurate settings:



3. Out of box when switch boot for the first time, it will try to load automatic configuration. After switch boots you may see repeated messages as illustrated in the snapshot below, you may then press **CTRL_D** to break:

```
System is starting...

Startup configuration file does not exist.
Started automatic configuration, press CTRL_D to break.

Automatic configuration attempt: 1.
Not ready for automatic configuration: no interface available.
Waiting for the next...

Automatic configuration attempt: 2.
Not ready for automatic configuration: no interface available.
Waiting for the next...

Automatic configuration attempt: 3.
Not ready for automatic configuration: no interface available.
Waiting for the next...
```

4. After pressing **CTRL_D** you may receive prompts as illustrated in the snapshot below, meaning you are ready to communicate with the switch:

```
Automatic configuration is aborted.
Line aux0 is available.

Press ENTER to get started.
```

5. Press **Enter** then follow the command lines example below using your correct values to apply on the switch *(note; copying all command lines below and paste to switch may break in the middle, it is recommended to enter the command lines one at a time to avoid this break)*:

```
system-view
sysname my_sysname
clock timezone UTC-5 minus 05:00:00
clock summer-time UTC-5 02:00:00 March second Sunday 02:00:00 November first Sunday 01:00:00
clock protocol ntp
ntp-service enable
ntp-service unicast-server 128.100.100.128
ntp-service unicast-server 128.100.72.168
vlan 1
name my_VLAN1name
description my_VLAN1description
quit
interface vlan 1
ip address 192.168.1.1 24
quit
dhcp snooping enable
interface GigabitEthernet 1/0/23
dhcp snooping trust
interface range GigabitEthernet 1/0/9 to GigabitEthernet 1/0/16
dhcp snooping binding record
quit
interface range GigabitEthernet 1/0/1 to GigabitEthernet 1/0/8
poe enable
quit
public-key local create rsa
y
2048
line aux 0
authentication-mode scheme
quit
line vty 0 63
authentication-mode scheme
protocol inbound ssh
quit
ip route-static 0.0.0.0 0.0.0.0 192.168.1.1
ssh server enable
ftp server enable
ip https enable
local-user my_username class manage
password simple my_passw0rd
service-type terminal
service-type ssh
service-type ftp
service-type https
authorization-attribute user-role network-admin
quit
quit
quit
```

The snapshot next page illustrates an example of the switch interface using the above commands:

```
<HP>system-view
System View: return to User View with Ctrl+Z.
[HP]sysname my_sysname
[my_sysname]clock timezone UTC-5 minus 05:00:00
[my_sysname]clock summer-time UTC-5 02:00:00 March second Sunday 02:00:00 Novemb
er first Sunday 01:00:00
[my_sysname]clock protocol ntp
[my_sysname]ntp-service enable
[my_sysname]ntp-service unicast-server 128.100.100.128
[my_sysname]ntp-service unicast-server 128.100.72.168
[my_sysname]vlan 1
[my_sysname-vlan1]name my_VLAN1name
[my_sysname-vlan1]description my_VLAN1description
[my_sysname-vlan1]quit
[my_sysname]interface vlan 1
[my_sysname-Vlan-interface1]ip address 192.168.1.1 24
[my_sysname-Vlan-interface1]quit
[my_sysname]dhcp snooping enable
[my_sysname]interface GigabitEthernet 1/0/23
[my_sysname-GigabitEthernet1/0/23]dhcp snooping trust
[my_sysname-GigabitEthernet1/0/23]interface range GigabitEthernet 1/0/9 to Gigab
itEthernet 1/0/16
[my_sysname-if-range]dhcp snooping binding record
[my_sysname-if-range]quit
[my_sysname]interface range GigabitEthernet 1/0/1 to GigabitEthernet 1/0/8
[my_sysname-if-range]poe enable
[my_sysname-if-range]quit
[my_sysname]public-key local create rsa
The local key pair already exists.
Confirm to replace it? [Y/N]:y
The range of public key modulus is (512 ~ 2048).
If the key modulus is greater than 512, it will take a few minutes.
Press CTRL+C to abort.
Input the modulus length [default = 1024]:2048
Generating Keys...
.....
Create the key pair successfully.
[my_sysname]line aux 0
[my_sysname-line-aux0]authentication-mode scheme
[my_sysname-line-aux0]quit
[my_sysname]line vty 0 63
[my_sysname-line-vty0-63]authentication-mode scheme
[my_sysname-line-vty0-63]protocol inbound ssh
[my_sysname-line-vty0-63]quit
[my_sysname]ip route-static 0.0.0.0 0.0.0.0 192.168.1.1
[my_sysname]ssh server enable
[my_sysname]ftp server enable
[my_sysname]ip https enable
The system might take several minutes to enable the HTTPS service. Please wait...
[my_sysname]local-user my_username class manage
New local user added.
[my_sysname-luser-manage-my_username]password simple my_passw0rd
[my_sysname-luser-manage-my_username]service-type terminal
[my_sysname-luser-manage-my_username]service-type ssh
[my_sysname-luser-manage-my_username]service-type ftp
[my_sysname-luser-manage-my_username]service-type https
[my_sysname-luser-manage-my_username]authorization-attribute user-role network-a
dmin
[my_sysname-luser-manage-my_username]quit
[my_sysname]quit
<my_sysname>quit

******************************************************************************
* Copyright (c) 2010-2015 Hewlett-Packard Development Company, L.P.          *
* Without the owner's prior written consent,                                 *
* no decompiling or reverse-engineering shall be allowed.                    *
******************************************************************************

Line aux0 is available.

Press ENTER to get started.
```

The snapshot below illustrates switch login example via console using the username and password configured earlier (*my_username and my_ passw0rd*):

```
login: my_username
Password:
<my_sysname>%Dec 31 20:03:38:159 2012 my_sysname SHELL/5/SHELL_LOGIN: my_usernam
e logged in from aux0.
```

The snapshot below illustrates switch interface after pressing the Enter key once more:

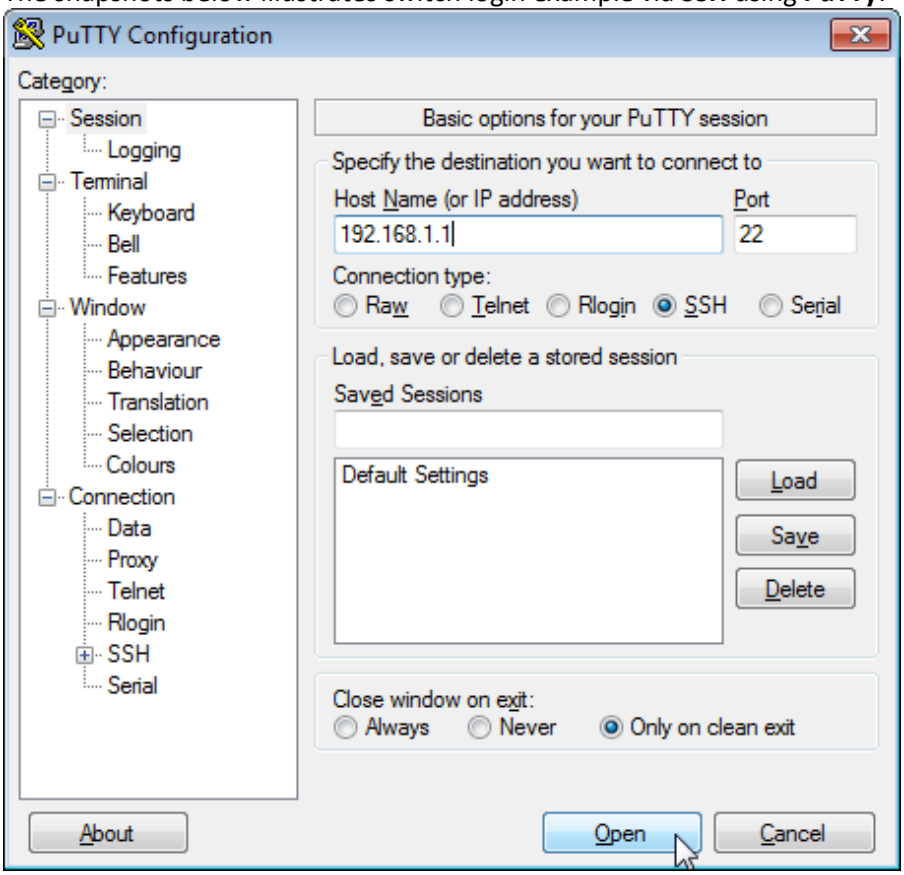
```
<my_sysname>
```

6. Now let's use an Ethernet cable to connect the PC to any of the switch LAN ports to test **SSH**, **FTP** and **HTTPS** connection sessions

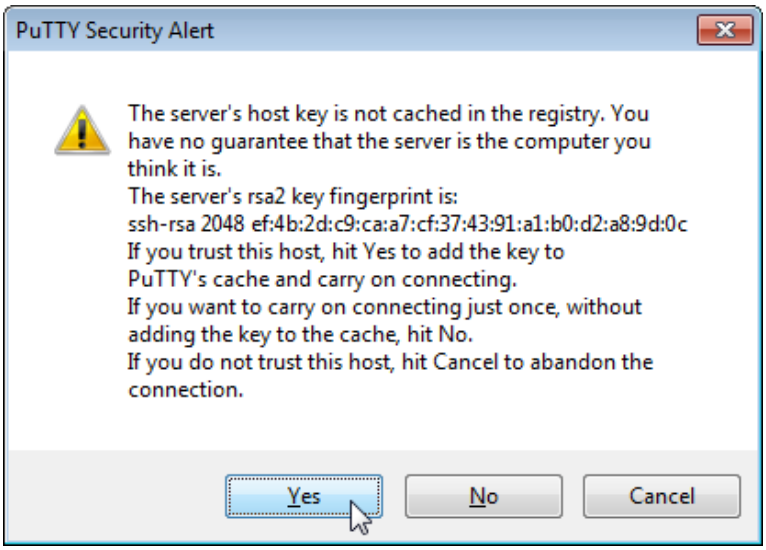
7. On the **PC**, in the Local Area Connection use the following static configuration (*remember to switch back to your original settings when finish. You may skip this step if the IP assigned to switch is within your IP pool scheme*):

   IP address: **192.168.1.10**
   Subnet Mask: **255.255.255.0**

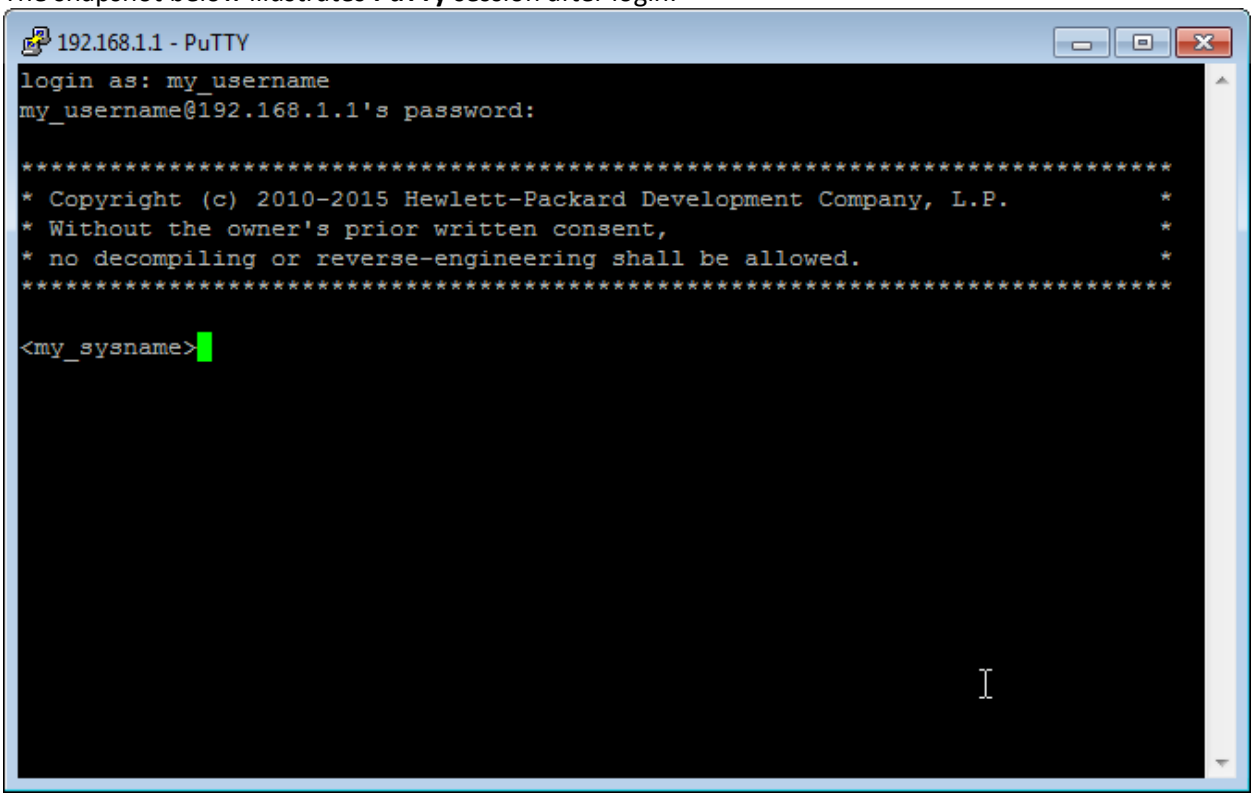
   - **SSH** access
     The snapshots below illustrates switch login example via **SSH** using **PuTTy**:



You may click **Yes** to store the key or **No** to continue without storing the key as illustrated in the snapshot next page:



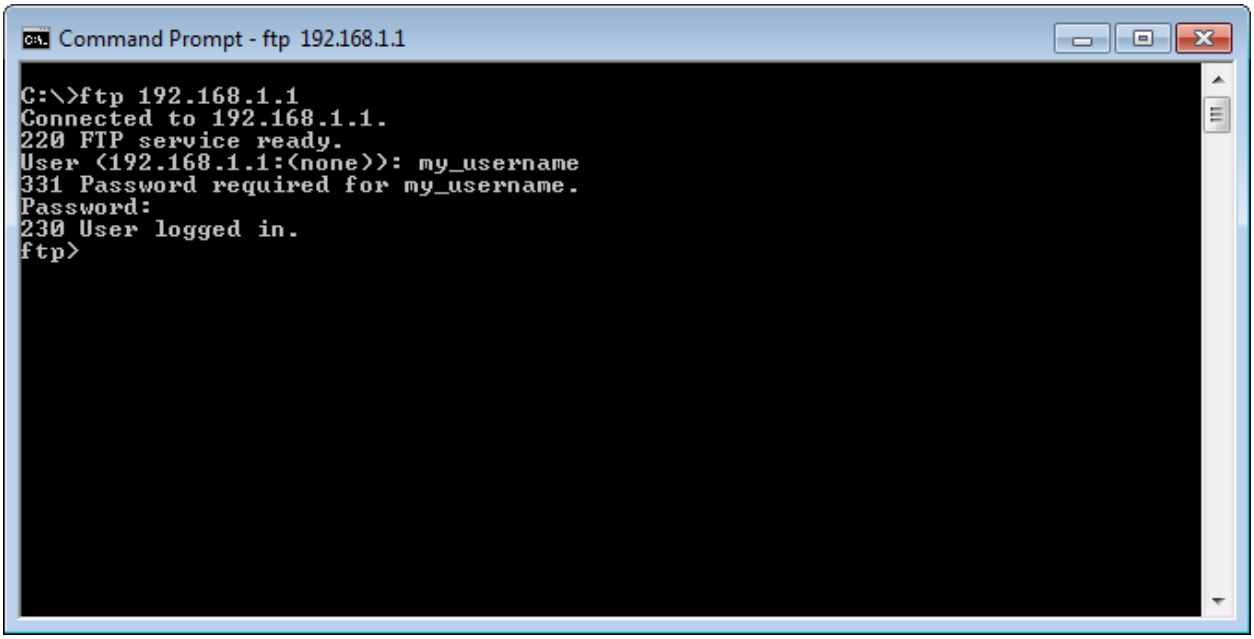
The snapshot below illustrates **PuTTy** session after login:



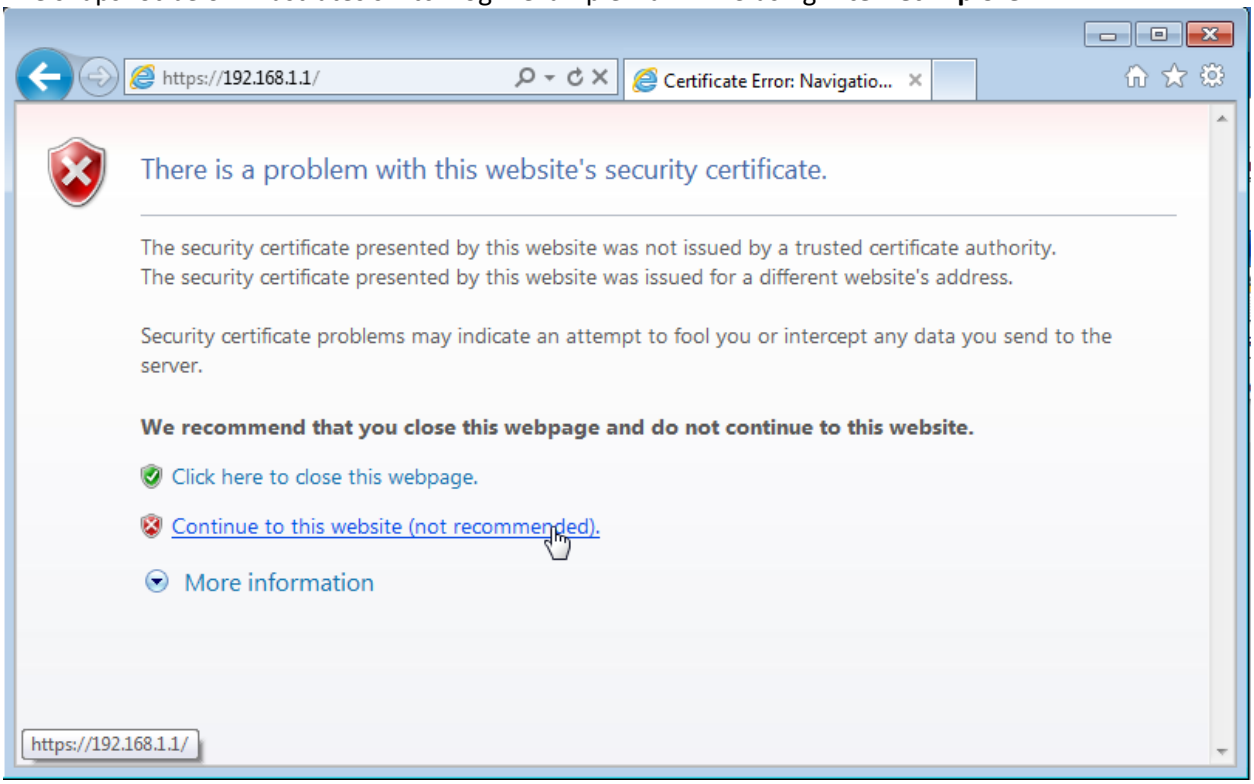
- **FTP** access
  Run the **Command Prompt** in elevated mode and type the following command line followed by entering the username and password created earlier (***my_username, my_passw0rd***):

  ```
  ftp 192.168.1.1
  ```

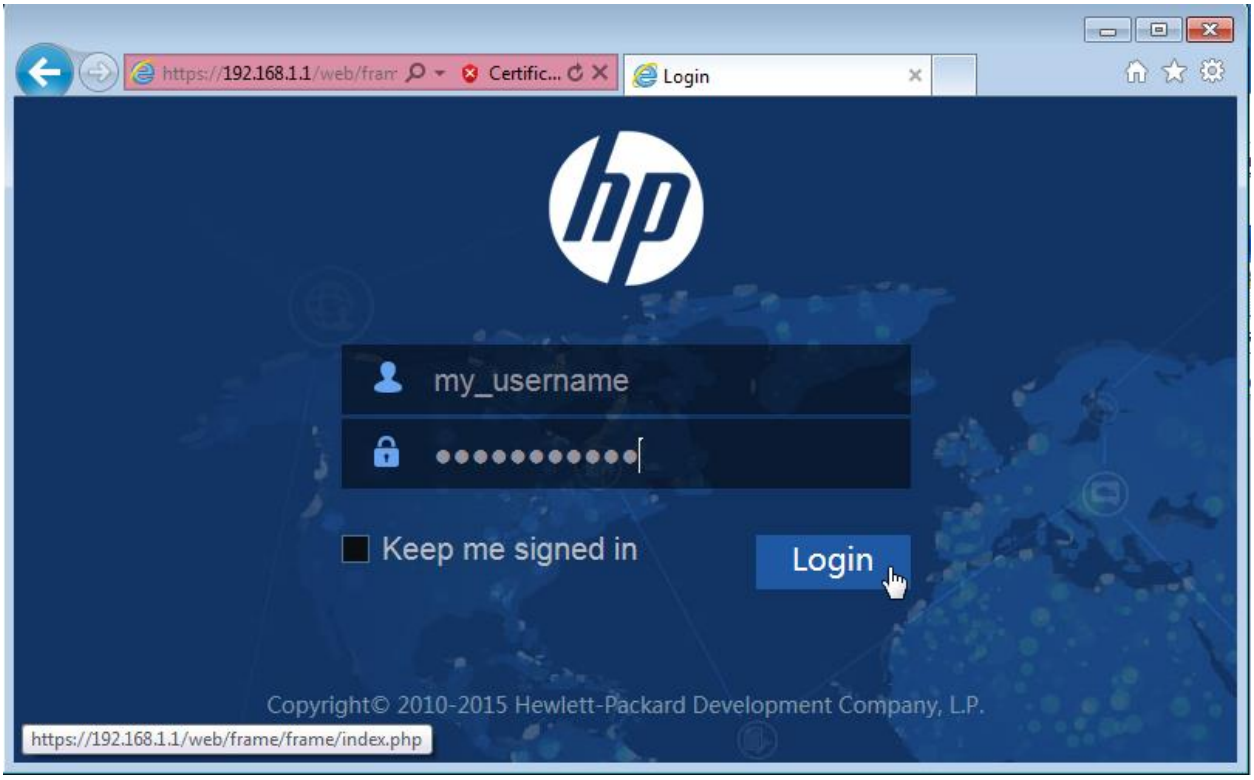
  The snapshot next page illustrates switch login example via **FTP** using the command prompt:



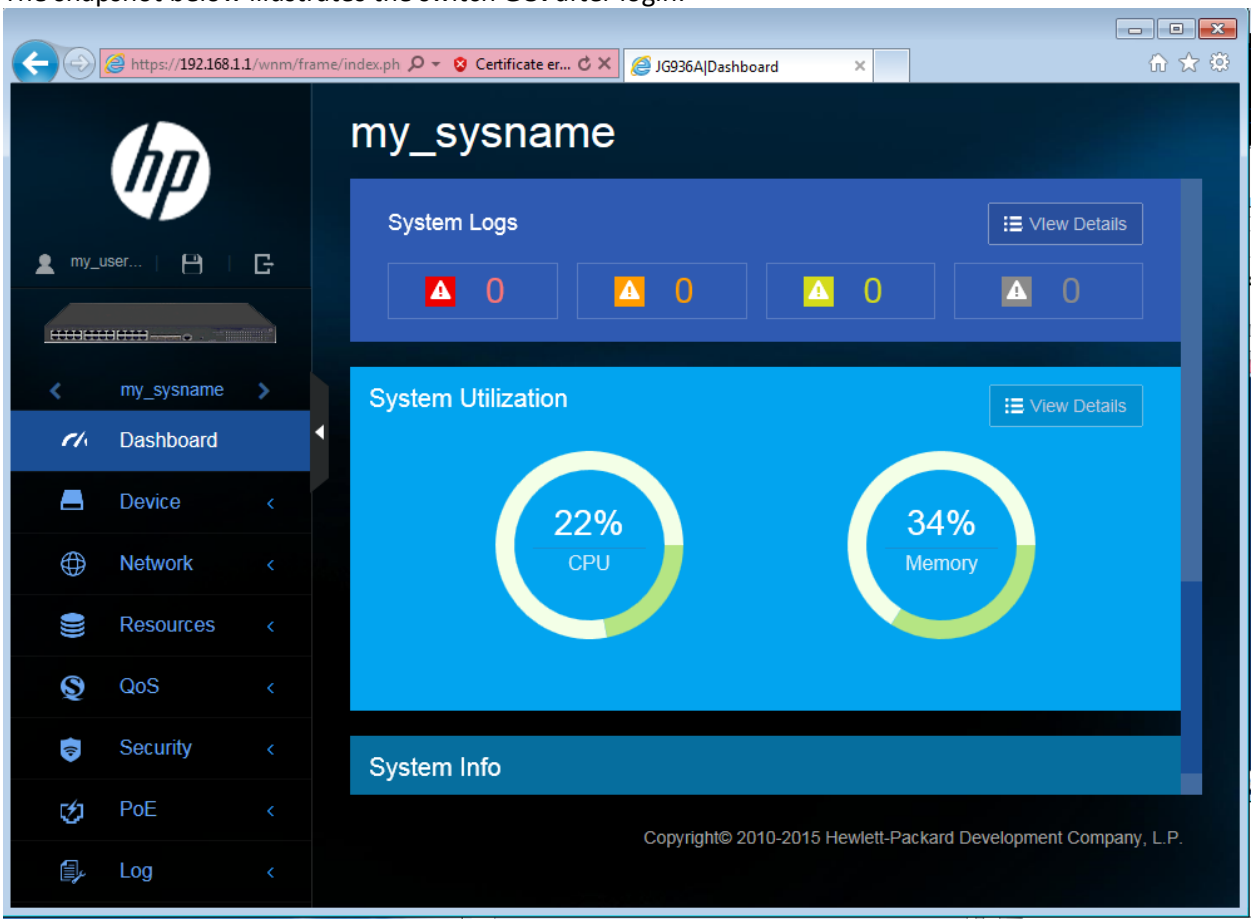
- **HTTPS** access
The snapshot below illustrates switch login example via **HTTPS** using **Internet Explorer**:



Click **Continue to this website (not recommended)**, then enter username and password to login as illustrated in the snapshot next page:



The snapshot below illustrates the switch **GUI** after login:



8. Back to the **PuTTy** console session, you may save and reboot as illustrated with prompt answers in the snapshot example below:

```
<HP>save
The current configuration will be written to the device. Are you sure? [Y/N]:y
Please input the file name(*.cfg)[flash:/startup.cfg]
(To leave the existing filename unchanged, press the enter key):
flash:/startup.cfg exists, overwrite? [Y/N]:y
Validating file. Please wait...
Saved the current configuration to mainboard device successfully.
<HP>reboot
Start to check configuration with next startup configuration file, please
wait.........DONE!
This command will reboot the device. Continue? [Y/N]:y
Now rebooting, please wait...
```

References:

- HP 5130 EI Switch Series Fundamentals Configuration Guide
- HP 5130 EI Switch Series Network Management and Monitoring Configuration Guide
- HP 5130 EI Switch Series Layer 3 - IP Services Configuration Guide

Credits:

Vladimir Kupchinsky and Vivin Thomas; Enterprise Infrastructure Solutions

End of document.