Switch HP Procurve

Testé sur Procurve 2650 et 2524 version H.10.119

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Connexion au Switch

Pour vous connecter au switch en port console, il vous faut un câble série DB9 femelle - femelle :

DB9-FF.png

- Bits : 9600
- Data bits : 8
- Parity : none
- Stop bits : 1
- Flow control : none

Commandes de base

Sauvegarder la configuration

Procurve switch 2650# write memory

Afficher la configuration

Procurve switch 2650# show running-config

Passer en mode config

Procurve switch 2650# configure terminal

Redémarrer

Procurve switch 2650# reload

Renommer le switch

Procurve switch 2650# hostname <name>

Passerelle

Procurve switch 2650# ip default-gateway 192.168.1.1

Mettre à jour le firmware

Etape 1 : Vérification de la version

Procurve switch 2650# show version

Image stamp:/sw/code/build/fish

Mar 31 2016 17:59:24

H.10.119

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Boot Image:Primary

Procurve switch 2650#

Etape 2 : Entrer dans le menu

Procurve switch 2650# menu

ProCurve Switch 2650   1-Jan-1990   0:16:54

==========================- CONSOLE - MANAGER MODE -

==========================

Main Menu

1. Status and Counters...

2. Switch Configuration...

3. Console Passwords...

4. Event Log

5. Command Line (CLI)

6. Reboot Switch

7. Download OS

8. Run Setup

9. Stacking...

0. Logout

Provides the menu to display configuration, status, and counters.

To select menu item, press item number, or highlight item and press <Enter>.

Sélectionnez le menu n°7 : Download OS

Etape 3 : Configurer le mode TFTP

```
ProCurve Switch 2650                        1-Jan-1990   0:18:18

==========================- CONSOLE - MANAGER MODE -
==========================
                        Download OS


  Current Software revision : H.10.119


  Method [TFTP] : TFTP


  TFTP Server : 192.168.1.100
  Remote File Name : H.10.119


 Actions->  Cancel    Edit    eXecute     Help


 Edit the fields displayed above.
 Use arrow keys to change action selection and <Enter> to execute action.
```

Entrez l'adresse IP du serveur TFTP ainsi que le nom du ficher a uploader. Puis cliquez sur : eXecute

Une fois le processus terminer, redémarrez le switch.

Supprimer la configuration

Supprimer la configuration

Procurve Switch 2650# erase startup-config

Supprimer la configuration avec le bouton RESET

Vous pouvez aussi supprimer la configuration en appuyant sur le bouton RESET sur la façade du switch

Supprimer le mot de passe admin

Pour supprimer le mot de passe admin du switch, il faut appuyer sur le bouton CLEAR situé sur la façade du switch. Celui-ci effacera uniquement le mot de passe admin.

Configuration des VLAN

Virtual Local Area Network

Augmenter le nombre max de vlan

```
Procurve switch 2650(config)# max-vlan 100
Command will take effect after saving configuration and reboot
```

Par défaut, le nombre max de vlan est de 8

Création d'un VLAN

```
Procurve switch 2650(config)# vlan 100 name voix
Procurve switch 2650(config)# vlan 101 name data
Procurve switch 2650(config)# vlan 102 name wifi
```

Suppression d'un VLAN

```
Procurve switch 2650(config)# no vlan 102
```

Ajouter un port non taggué à un VLAN

```
Procurve switch 2650(config)# vlan 100
Procurve switch 2650(vlan-100)# untagged ethernet 1
Procurve switch 2650(vlan-100)# untagged ethernet 10-12
```

Ajouter un port taggué à un VLAN

```
Procurve switch 2650(config)# vlan 101
Procurve switch 2650(vlan-101)# tagged ethernet 2
Procurve switch 2650(vlan-101)# tagged ethernet 20-22
```

Assigner une adresse IP à un VLAN

```
Procurve switch 2650(config)# vlan 1
Procurve switch 2650(vlan-1)# ip address 192.168.1.100 255.255.255.0
```

Configurer un port en mode mixte

```
Procurve switch 2650(config)# vlan 100
Procurve switch 2650(vlan-100)# tagged ethernet 30
Procurve switch 2650(vlan-100)# exit
Procurve switch 2650(config)# vlan 101
Procurve switch 2650(vlan-101)# untagged ethernet 30
```

Configuration en mode Trunk

```
ProCurve Switch 2650(config)# vlan 100
ProCurve Switch 2650(vlan-100)# tagged ethernet 48
ProCurve Switch 2650(vlan-100)# exit
ProCurve Switch 2650(config)# vlan 101
ProCurve Switch 2650(vlan-101)# tagged ethernet 48
ProCurve Switch 2650(vlan-100)# exit
ProCurve Switch 2650(config)# vlan 102
ProCurve Switch 2650(vlan-101)# tagged ethernet 48
ProCurve Switch 2650(vlan-101)# exit
```

Tagger tous les VLAN sur le même port

Vérification

```
Procurve switch 2650# show vlan

 Status and Counters - VLAN Information

  Maximum VLANs to support : 100
  Primary VLAN : DEFAULT_VLAN
  Management VLAN :

  802.1Q VLAN ID□NAME□□□Status□□Voice
  --------------   ----------  □----------  ------
  1□□□□□DEFAULT_VLAN□Port_based□No
  100□□□voix□□□Port_based□No
  101□□□data□□□Port_based□No
```

```
ProCurve Switch 2650# show vlan ports Ethernet 48

 Status and Counters - VLAN Information - for ports 48


  802.1Q VLAN ID Name        Status      Voice

  -------------- ----------- ----------- -----

  1            DEFAULT_VLAN Port-based   No

  100          data         Port-based   No

  101          voix         Port-based   No
```

Configuration VLAN voix, LLDP et QOS

Configuration d'un VLAN voix

```
Procurve switch 2650(config)# vlan 100
Procurve switch 2650(vlan-100)# voice
```

```
ProCurve Switch 2650# sh vlan

 Status and Counters - VLAN Information

  Maximum VLANs to support : 8
  Primary VLAN : DEFAULT_VLAN
  Management VLAN :

  802.1Q VLAN ID Name        Status      Voice
  -------------- ----------- ----------- -----
  1         DEFAULT_VLAN Port-based  No
  100          voice       Port-based  Yes
  101          data        Port-based  No
```

Activation du LLDP

```
Procurve switch 2650(config)# lldp run
```

```
ProCurve Switch 2650(config)# no lldp run
```

Configuration de la QOS

```
ProCurve Switch 2650(config)# qos type-of-service diff-services
```

Configuration de Telnet, SSH et WEB

Configuration de SSH

> Secure Shell

Procurve switch 2650(config)# crypto key generate ssh

Installating new RSA key. If the key/entropy cache is depleted, this could take up to a minute.

Procurve switch 2650(config)# ip ssh

Procurve switch 2650(config)# ip ssh timeout 120

Procurve switch 2650(config)# ip ssh version 2

Procurve switch 2650(config)# ip ssh port 22

Vérification

Procurve switch 2650(config)# show ip ssh

 SSH Enabled : Yes
    SSH Version : 2
    TCP Port Number : 22
    Timeout (sec) : 120
    Server key Size (bits) : 512
    Secure Copy Enabled : No

Configuration de TELNET

> Terminal Network

Procurve switch 2650(config)# telnet-server

Vérification

```
Procurve switch 2650(config)# show telnet

 Telnet Activity


  Session Privilege  From    To

  -------  ---------  ---------    ----------

  ** 1 Manager   Connsole
```

Configuration WEB

```
Procurve switch 2650(config)# web-management
```

en HTTPS :

```
Procurve switch 2650(config)# crypto key generate cert 512
Procurve switch 2650(config)# web-management ssl
```

> Plugins JAVA obligatoire pour l'utilisation du WebGUI

Configuration de l'agrégation de liens

LACP

```
switch1(config)# trunk 42-43 trk1 lacp
```

```
switch2(config)# trunk 42-43 trk1 lacp active
```

Statique

```
Procurve switch 2650(config)# trunk 1-2 trk1 trunk
```

Configuration du NTP

NTP: Network Time Protocol

Introduction

Pour effectuer une synchronisation NTP, il faut tout d'abord que le switch puisse aller sur internet

```
Procurve switch 2650# configure terminal
Procurve switch 2650(config)# vlan 1
Procurve switch 2650(vlan-1)# ip address 192.168.1.100 255.255.255.0
Procurve switch 2650(vlan-1)# exit
Procurve switch 2650(config)# ip default-gateway 192.168.1.1
Procurve switch 2650(config)#
```

Configuration du SNTP

```
Procurve switch 2650(config)# timesync sntp
Procurve switch 2650(config)# sntp server 194.2.0.28
Procurve switch 2650(config)# sntp unicast
```

Vérification

```
Procurve switch 2650# show sntp

SNTP Configuration

 Time Sync Mode: sntp
   SNTP Mode: unicast
   Poll Interval (sec) [720] : 720


   IP Address   Protocol Version
   ------------- ---------------
   194.2.0.28   3


Procurve switch 2650# show time
Sun Dec 12 10:29:05 2021
```

Configuration du NTP

```
Procurve switch 2650(config)# ip timep manual 194.2.0.58
Procurve switch 2650(config)# timesync timep
```

Vérification

```
Procurve switch 2650# show timep

 Timep Configuration

   Time Sync Mode: Timep
   TimeP Mode [Disabled] : Manual  Server Address : 194.2.0.58
   Poll Interval (min) [720] : 720


Procurve switch 2650# show time
Sun Dec 12 10:37:16 2021
```

Configuration statique

```
ProCurve Switch 2650(config)# time 09:56
Mon Jan  1 09:56:36 1990
ProCurve Switch 2650(config)# time 05/14/2022
Sat May 14 09:56:50 2022
```

Configuration de Syslog

Configuration de Syslog

Procurve switch 2650(config)# logging facility syslog

Procurve switch 2650(config)# logging 192.168.1.200

Vérification

Procurve switch 2650# show logging

Configuration des ports

Introduction

Nous allons voir comment configurer les ports du switch

Vitesse

```
Procurve switch 2650(config)# interface ethernet 40
Procurve switch 2650(eth-40)# speed-duplex 100-full
Procurve switch 2650(eth-40)# speed-duplex 100-half
```

Description

```
Procurve switch 2650(eth-40)# name "To switch"
```

POE

```
Procurve switch 2650(eth-40)# power-overethernet
Procurve switch 2650(eht-40)# no power-overethernet
```

Activation et désactivation

```
Procurve switch 2650(eth-1)# enable
Procurve switch 2650(eth-1)# disable
```

Configuration de Port-security

Configuration de port-security

```
ProCurve Switch 2650(config)# port-security ethernet 48 learn-mode
continuous          Continuous MAC address learn mode.
static          Static MAC address learn mode.
configured          Static MAC address configured mode.
port-access          Learn port-access authorized MAC address only.
limited-continuous    Limited continuous MAC address learn mode.
```

Limite d'adresse MAC

```
ProCurve Switch 2650(config)# port-security ethernet 48 address-limit <NB Adresses MAX>
```

Alarme

```
ProCurve Switch 2650(config)# port-security ethernet 48 action
none
send-alarm
send-disable
```

Fixer une adresse MAC

```
ProCurve Switch 2650(config)# port-security ethernet 48 mac-address 00:00:00:00:00:01
```

Expiration de l'adresse MAC avant nouvelle apprentissage

```
ProCurve Switch 2650(config)# mac-age-time 60
```

Vérification

```
ProCurve Switch 2650(config)# show port-security ethernet 48

Port Security
```

Port : 48

Learn Mode [Continuous] : Continuous

Action [None] : None

Configuration du STP

Activation

ProCurve Switch 2650(config)# spanning-tree

The best practice recommendation by HP Networking is

to enable MSTP or MSTP in forced RSTP operation.

Mode RSTP

ProCurve Switch 2650(config)# spanning-tree force-version rstp-operation

Pour forcer le switch en Root Bridge

ProCurve Switch 2650(config)# spanning-tree priority 0

Admin Edge

C'est l'équivalent du port-fast de Cisco

ProCurve Switch 2650(config)# spanning-tree ethernet 1 admin-edge-port

Vérification

ProCurve Switch 2650(config)# show spanning-tree

Rapid Spanning Tree (RSTP) Information

STP Enabled : Yes

Force Version : RSTP-operation

Switch Priority : 0   Hello Time : 2

Max Age : 20   Forward Delay : 15

Topology Change Count : 0

Time Since Last Change : 103 mins

Root MAC Address : 001560-190f00

Root Path Cost : 0

Root Port : This switch is root

Root Priority : 0

Configuration du DHCP

DHCP Relay

```
ProCurve Switch 2650(config)# vlan 101
ProCurve Switch 2650(vlan-101)# ip helper-address 192.168.1.199
```

Avec option 82

```
ProCurve Switch 2650(config)# dhcp-relay option 82
 append        Specifies that the option 82 field should be appended to
               client DHCP packet.
 drop          Specifies that the DHCP packet will be dropped
               unconditionally, if option 82 field(s) already exists in
               the client DHCP packet.
 keep          Specifies that no option 82 field will be added or
               replaced, if option 82 field(s) already exists in the
               client DHCP packet.
 replace       Specifies that any existing option 82 fields will be
               replaced with switch option 82 field for client DHCP
               packet.
 validate      Specifies the validation for server response.
```

DHCP Snooping

Activation

```
ProCurve Switch 2650(config)# dhcp-snooping
```

Autoriser un serveur DHCP

```
ProCurve Switch 2650(config)# dhcp-snooping authorized-server 192.168.1.200
```

Activation sur un vlan

```
ProCurve Switch 2650(config)# dhcp-snooping vlan 200
```

Vérification

```
ProCurve Switch 2650# show dhcp-snooping
ProCurve Switch 2650# show dhcp-snooping stats
```

Configuration de la bannière

Configuration

```
ProCurve Switch 2650(config)# banner motd #
Enter TEXT message.  End with the character'#'
 authorized only #
ProCurve Switch 2650(config)#
```

Configuration du 802.1X

Configuration du RADIUS

```
ProCurve Switch 2650(config)# radius-server host 192.168.1.50
ProCurve Switch 2650(config)# aaa authentication port-access eap-radius
```

Activation sur des ports

```
ProCurve Switch 2650(config)# aaa port-access authenticator 15
LACP has been disabled on 802.1x port(s).
```

Bascule de VLAN en cas d'échec d'authentification

```
ProCurve Switch 2650(config)# aaa port-access authenticator 15 unauth-vid 200
ProCurve Switch 2650(config)# aaa port-access authenticator 15 client-limit 5
```

Activation

```
ProCurve Switch 2650(config)# aaa port-access authenticator active
```

Vérification

```
ProCurve Switch 2650(config)# show port-access authenticator

 Port Access Authenticator Status

  Port-access authenticator activated [No] : Yes
  Allow RADIUS-assigned dynamic (GVRP) VLANs [No] : No


          Current  Current    Cntrl
  Port Status VLAN ID  Port COS    Dir
  ---- ------ -------- ----------- -----
  15   Closed 1       No-override both
```

Configuration du SNMP

SNMP v1 et v2

Activation

ProCurve Switch 2650(config)# snmp-server enable

ProCurve Switch 2650(config)# no snmp-server enable

Configuration de la communauté

ProCurve Switch 2650(config)# snmp-server community public

Informations

ProCurve Switch 2650(config)# snmp-server location BAIE1

ProCurve Switch 2650(config)# snmp-server contact Admin

Autorisation

ProCurve Switch 2650(config)# ip authorized-managers 192.168.1.1 255.255.255.0 access operator

Serveur SNMP

ProCurve Switch 2650(config)# snmp-server host 192.168.1.200

Vérification

```
ProCurve Switch 2650# show snmp-server

 SNMP Communities

 Community Name   MIB View Write Access
 --------------- -------- ------------
 public          Manager  Unrestricted
 test            Operator Restricted
```

Trap Receivers

Link-Change Traps Enabled on Ports [All] : All

Send Authentication Traps [No] : No

Address   Community   Events Sent Notify Type Retry Timeout
-------------------- --------------- ----------- ----------- ----- -------

Excluded MIBs

Snmp Response Pdu Source-IP Information

 Selection Policy   : Default rfc1517

Trap Pdu Source-IP Information

 Selection Policy   : Default rfc1517

SNMP v3

Activation

```
ProCurve Switch 2650(config)# snmpv3 enable
SNMPv3 Initialization process.
Creating user 'initial'
Authentication Protocol: MD5
Enter authentication password: ********
Privacy protocol is DES
Enter privacy password: ********

User 'initial' is created
Would you like to create a user that uses SHA? y
Enter user name: dunn
Authentication Protocol: SHA
Enter authentication password: ********
Privacy protocol is DES
Enter privacy password: ********
```

User creation is done. SNMPv3 is now functional.

Would you like to restrict SNMPv1 and SNMPv2c messages to have read only

access (you can set this later by the command 'snmp restrict-access'): y

ProCurve Switch 2650(config)#

Configuration

ProCurve Switch 2650(config)# snmpv3 user <user> auth sha <MDP> priv aes <MDP>

ProCurve Switch 2650(config)# snmpv3 group <groupe> user <user> sec-model ver3

Vérification

ProCurve Switch 2650# show snmpv3 enable

ProCurve Switch 2650# show snmpv3 user

ProCurve Switch 2650# show snmpv3 group

Importer et Exporter la configuration via TFTP

Exporter la configuration vers un serveur TFTP

```
ProCurve Switch 2650# copy startup-config tftp 192.168.1.200 config.txt
```

Importer la configuration depuis un serveur TFTP

```
ProCurve Switch 2650# copy tftp startup-config 192.168.1.200 config.txt
Device may be rebooted, do you want to continue [y/n]?  y
```

Gestion de la table ARP

Voir la table ARP

```
ProCurve Switch 2650# show arp

 IP ARP table

 IP Address     MAC Address      Type    Port
 --------------- ----------------- ------- ----
  192.168.1.10   00:00:00:00:00:01 ARPA e1
```

Vider la table ARP

```
ProCurve Switch 2650# clear arp
```