

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
```

```
      38
```

```
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 fichier à uploader. Puis cliquez sur : eXecute

Une fois le processus terminé, 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
Installing 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
```

```
-----
```

```
**1ManagerConsole
```

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

Transmission de journaux

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(eth-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
```