



Security Gateway Manual

SG-1100

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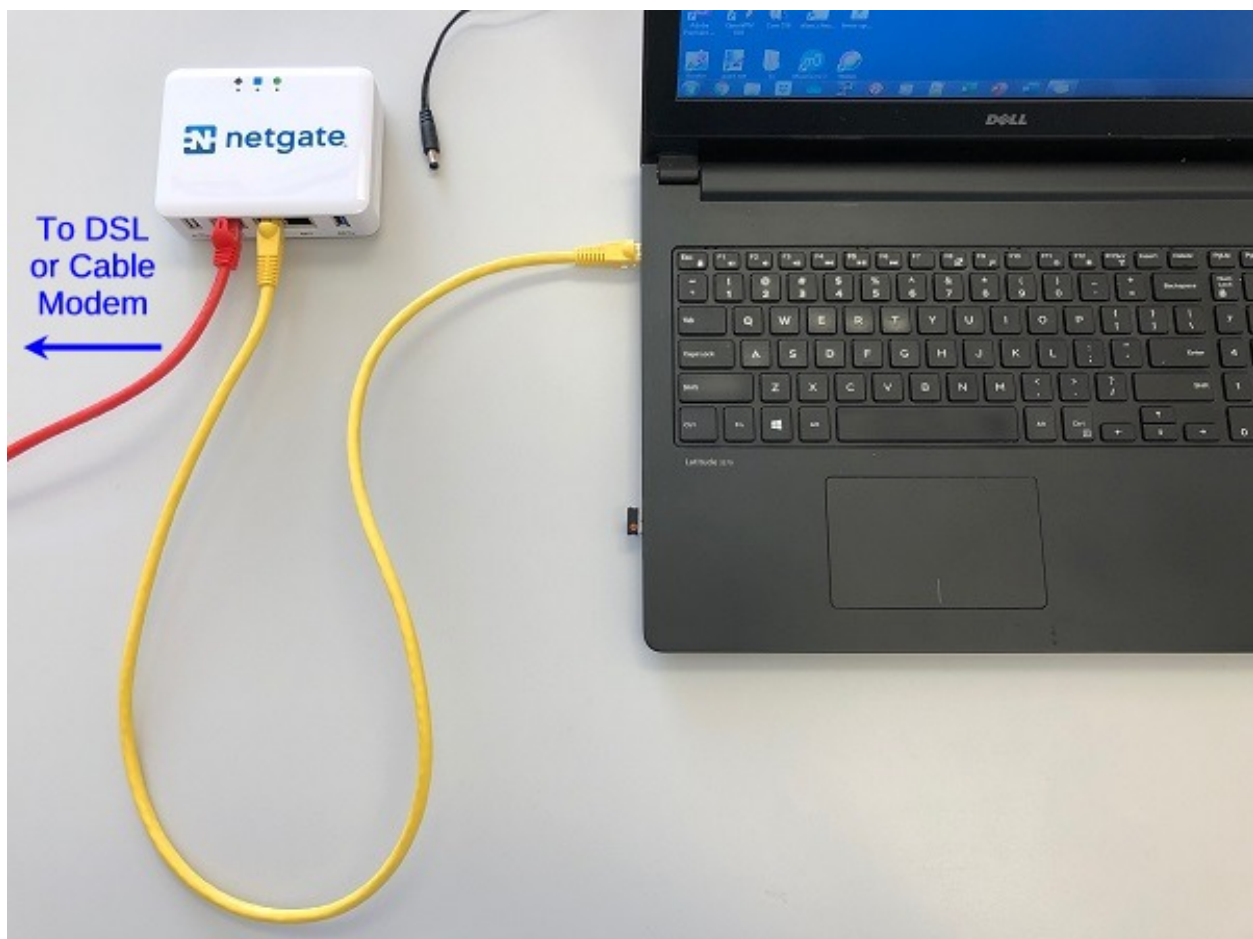
This Quick Start Guide covers the first time connection procedures for the [Netgate® SG-1100 Firewall Appliance](#) and will provide the information needed to keep the appliance up and running.

GETTING STARTED

The basic firewall configuration begins with connecting the pfSense® appliance to the Internet. The pfSense appliance should be unplugged at this time.

Connect one end of an Ethernet cable to the WAN port (shown in the *Input and Output Ports* section) of the pfSense appliance. The other end of the same cable should be inserted into a port of the Cable or DSL modem. The modem provided by the ISP should have multiple LAN ports. Any port should work.

Next, connect one end of a second Ethernet cable to the LAN port (shown in the *Input and Output Ports* section) of the pfSense appliance. Connect the other end to the computer.



Warning: The default IP Address on the LAN subnet on the pfSense firewall is 192.168.1.1/24. The same subnet **cannot** be used on both WAN and LAN, so if the default IP address on the ISP-supplied modem is also 192.168.1.1/24, **disconnect the WAN** interface until the LAN interface on the firewall has been renumbered to a different subnet (like **192.168.2.1/24**).

INITIAL CONFIGURATION

Plug the power cable into the power port (shown in the *Input and Output Ports* section) to turn on the pfSense Firewall. Allow 4 or 5 minutes to boot up completely.

1. From the computer, log into the Web Interface

Open a web browser (Google Chrome in this example) and type in 192.168.1.1 on the address bar. Press Enter.

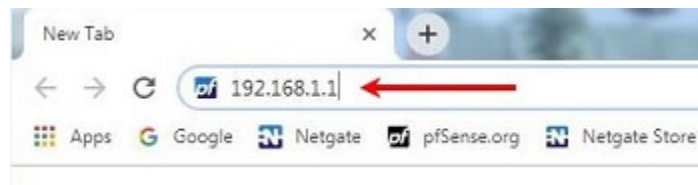


Fig. 1: Enter the Default LAN IP Address

2. A warning message may appear. If this message or similar message is encountered, it is safe to proceed. Click the **Advanced** Button and the click **Proceed to 192.168.1.1 (unsafe)** to continue.
3. At the **Sign In** page, enter the default pfSense username and password and click **Next**.
 - Default Username: **admin**
 - Default Password: **pfsense**

2.1 The Setup Wizard

The following steps will step through the Setup Wizard for the initial configuration of the firewall.

Note: Ignore the warning to reset the ‘admin’ account password. One of the steps in the Setup Wizard is to change the default password.

1. Click **Next** to start the Setup Wizard.
2. Click **Next** after you have read the information on Netgate Global Support.
3. On the General Information page, use the following as a guide to configure the firewall.

Hostname: Any desired name can be entered. For the purposes of this guide, the default hostname `pfsense` is used.

Domain: The default `localdomain` is used for the purposes of this tutorial.

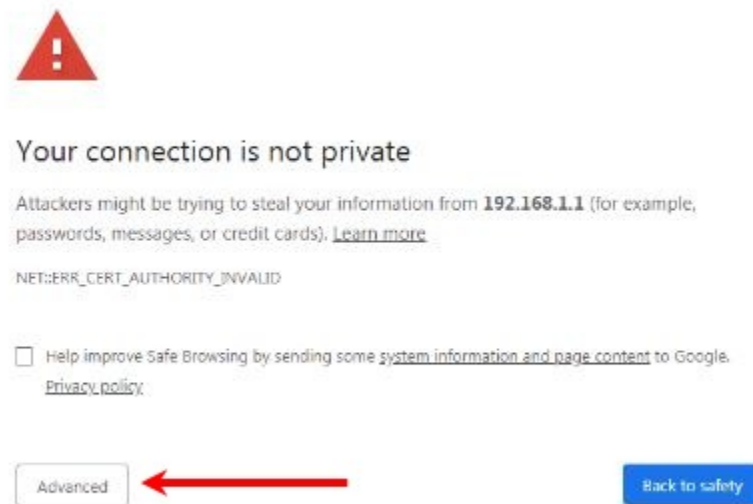


Fig. 2: Click **Advanced** and then **Proceed to 192.168.1.1 (unsafe)**

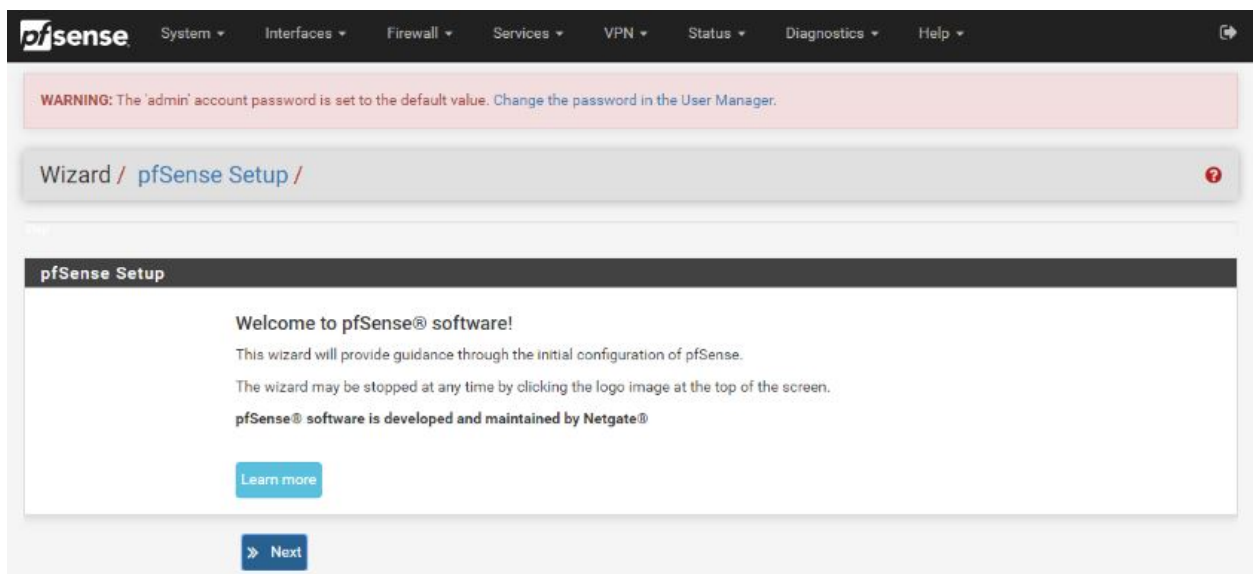


Fig. 3: Click **Next**

DNS Servers: For purposes of this setup guide, use the Google public DNS servers (8.8.8.8 and 8.8.4.4).

The screenshot shows the pfSense Setup Wizard, Step 2 of 9, titled "General Information". The page contains the following fields and options:

- Hostname:** pfSense (EXAMPLE: myserver)
- Domain:** localdomain (EXAMPLE: mydomain.com)
- Primary DNS Server:** 8.8.8.8
- Secondary DNS Server:** 8.8.4.4
- Override DNS:** ☒ (Allow DNS servers to be overridden by DHCP/PPP on WAN)

A "Next" button is located at the bottom right of the form.

Fig. 4: Type in the DNS Server information and Click **Next**

4. Use the following information for the Time Server Information page.

Time Server Hostname: Use the default pfSense time server address.

Timezone: Select the time zone for the location of the firewall. For this guide, the Timezone will be set to America/Chicago for US Central time.

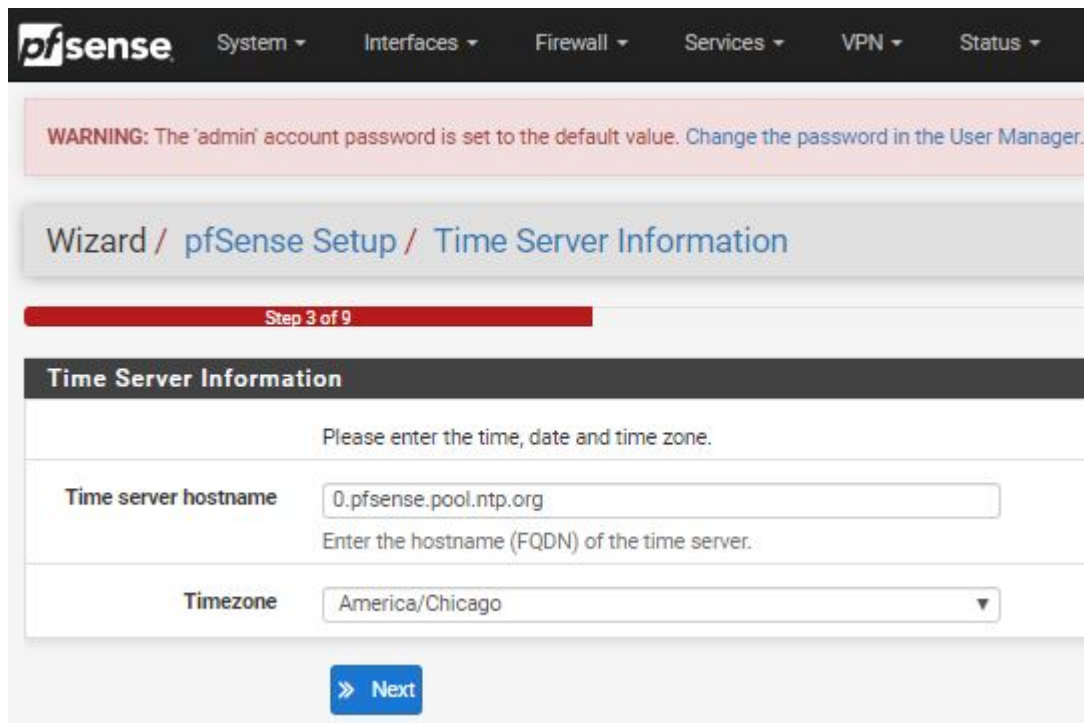
5. The WAN interface is the Public IP address the network will use to communicate with the Internet. Use the following information for the WAN configuration page.

DHCP is the default and is the most common type of interface for home cable modems.

Default settings for the other items on this page should be acceptable for normal home users.

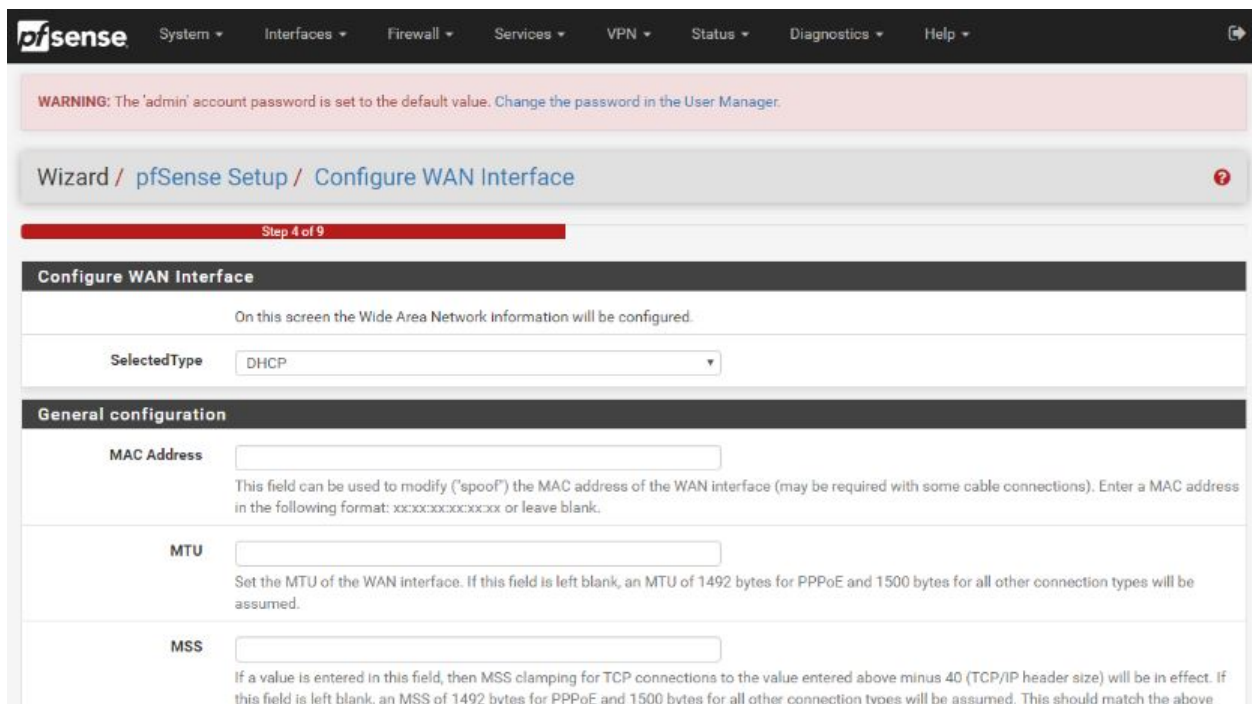
6. Configuring LAN IP Address & Subnet Mask. The default LAN IP address of 192.168.1.1 and subnet mask of 24 is usually sufficient.
7. Change the **Admin Password**. Enter the same password in both fields.
8. Click **Reload** to save the configuration.
9. After a few seconds, a message will indicate the Setup Wizard has completed. To proceed to the pfSense dashboard, click **Finish**.
10. A final notification screen will appear stating that **NO COMMERCIAL DISTRIBUTION...** Click **Accept** to continue to the pfSense dashboard.

This completes the basic configuration for the pfSense firewall.



The screenshot shows the pfSense web interface. At the top is a navigation bar with links for System, Interfaces, Firewall, Services, VPN, and Status. Below this is a warning message: "WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager." The main heading is "Wizard / pfSense Setup / Time Server Information". A progress bar indicates "Step 3 of 9". The section title is "Time Server Information". Below this, a message says "Please enter the time, date and time zone." There are two input fields: "Time server hostname" with the value "0.pfsense.pool.ntp.org" and a description "Enter the hostname (FQDN) of the time server.", and "Timezone" with a dropdown menu showing "America/Chicago". At the bottom is a blue button labeled "Next".

Fig. 5: Change the Timezone and Click Next



The screenshot shows the pfSense web interface. At the top is a navigation bar with links for System, Interfaces, Firewall, Services, VPN, Status, Diagnostics, and Help. Below this is a warning message: "WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager." The main heading is "Wizard / pfSense Setup / Configure WAN Interface". A progress bar indicates "Step 4 of 9". The section title is "Configure WAN Interface". Below this, a message says "On this screen the Wide Area Network information will be configured." There is a dropdown menu for "SelectedType" with the value "DHCP". Below this is a section titled "General configuration" with three input fields: "MAC Address" with a description "This field can be used to modify ('spoof') the MAC address of the WAN interface (may be required with some cable connections). Enter a MAC address in the following format: xxxxxxxxxx or leave blank.", "MTU" with a description "Set the MTU of the WAN interface. If this field is left blank, an MTU of 1492 bytes for PPPoE and 1500 bytes for all other connection types will be assumed.", and "MSS" with a description "If a value is entered in this field, then MSS clamping for TCP connections to the value entered above minus 40 (TCP/IP header size) will be in effect. If this field is left blank, an MSS of 1492 bytes for PPPoE and 1500 bytes for all other connection types will be assumed. This should match the above".

Fig. 6: Default Settings Should be Acceptable. Click Next



Fig. 7: Read and Click **Accept**

PFSense OVERVIEW

This page provides an overview of the pfSense® dashboard and navigation. It also provides information on how to perform frequent tasks such as backing up the pfSense software and connecting to the pfSense firewall console.

3.1 The Dashboard

pfSense software is highly configurable, all of which can be done through the dashboard. This orientation will help to navigate and further configure the firewall.

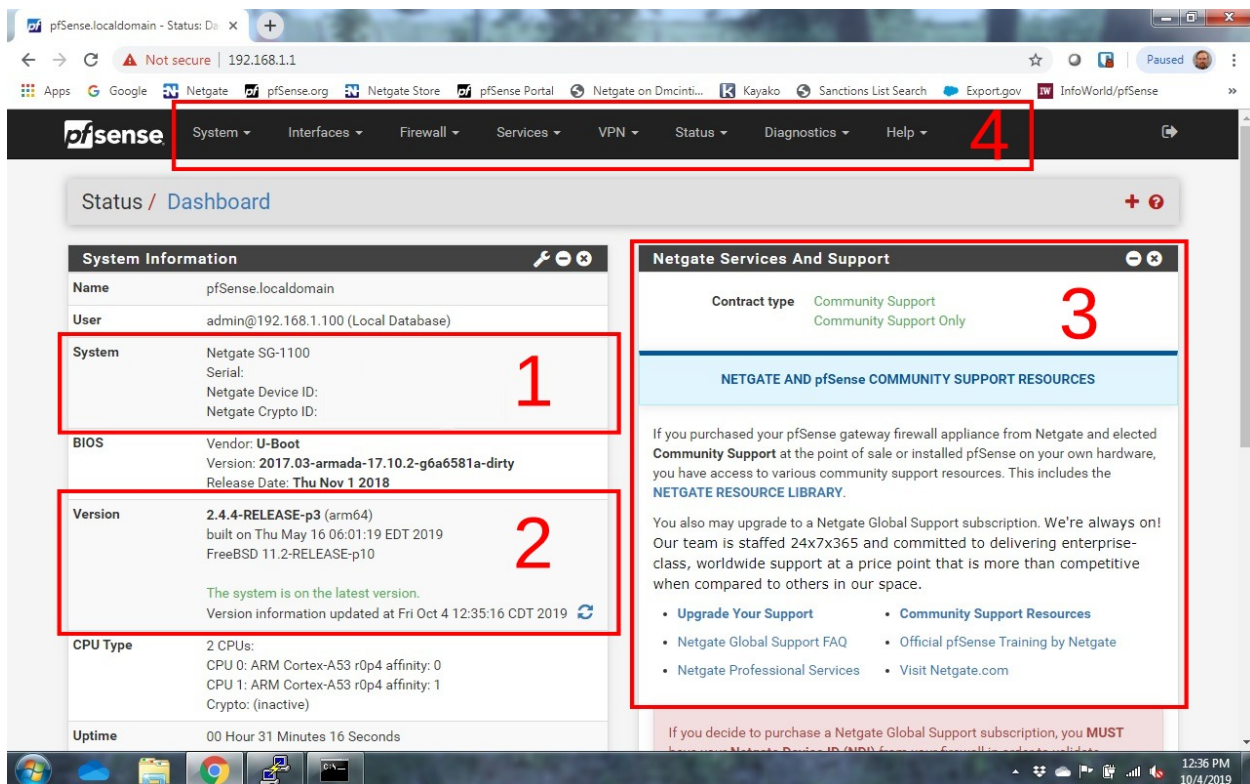


Fig. 1: The pfSense Dashboard

Section 1 shows important system information such as the model, Serial Number, and Netgate Device ID for this pfSense firewall.

Section 2 identifies what version of pfSense software is installed, and if an update is available.

Section 3 describes Netgate Service and Support.

Section 4 shows the various menu headings. Each menu heading has drop-down options for a wide range of configuration choices.

3.2 Re-running the Setup Wizard

To re-run the Setup Wizard, navigate to **System -> Setup Wizard**.

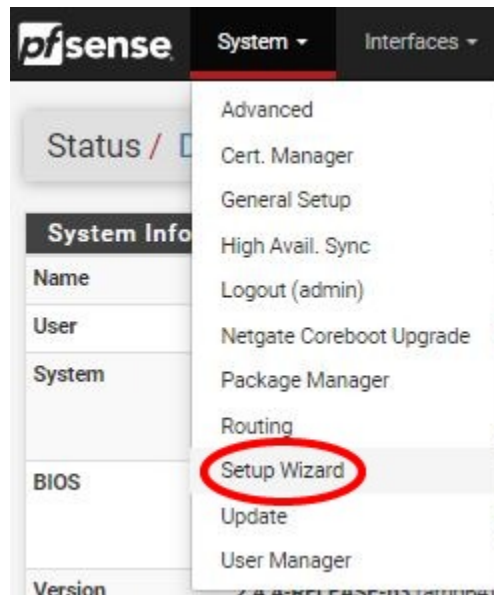


Fig. 2: Re-run the Setup Wizard

3.3 Backup and Restore

It is important to backup the firewall configuration prior to updating or making any configuration changes. From the menu at the top of the page, browse to **Diagnostics > Backup/Restore**.

Click **Download configuration as XML** and save a copy of the firewall configuration to the computer connected to the pfSense firewall.

This backup (or any backup) can be restored from the same screen by choosing the backed up file under **Restore Configuration**.

Note: Auto Config Backup is a built-in service located at **Services -> Auto Config Backup**. This service will save up to 100 encrypted backup files automatically, any time a change to the configuration has been made. Visit the [Auto Config Backup](#) page for more information.

3.3.1 Connecting to the Console

There are times when accessing the console is required. Perhaps GUI console access has been locked out, or the password has been lost or forgotten.

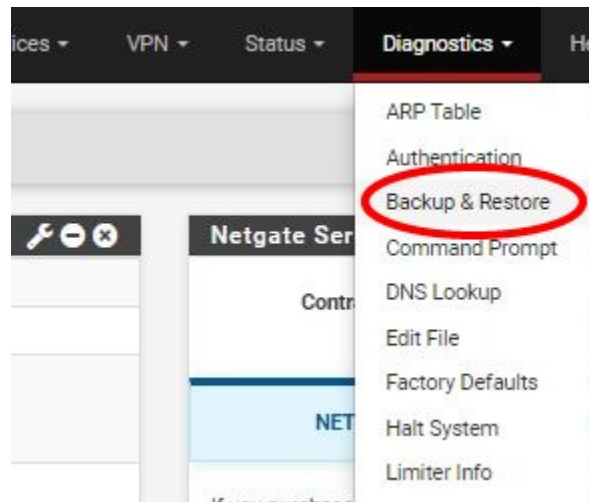


Fig. 3: Backup & Restore

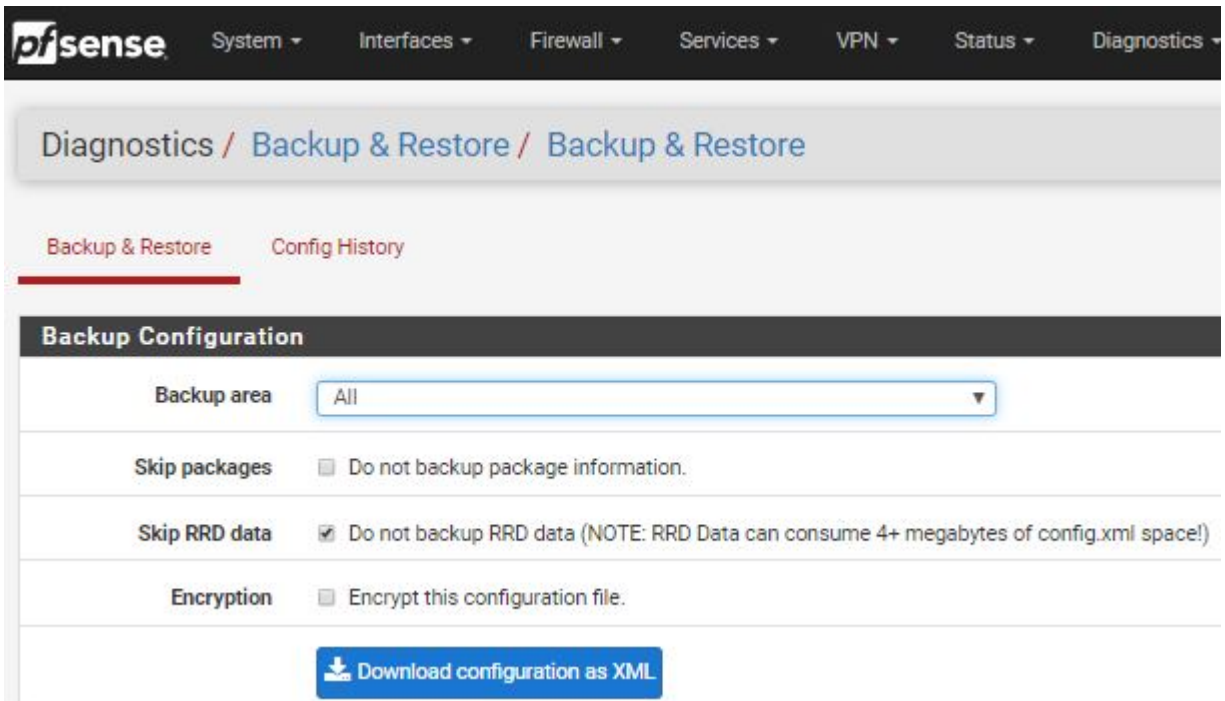


Fig. 4: Click Download configuration as XML

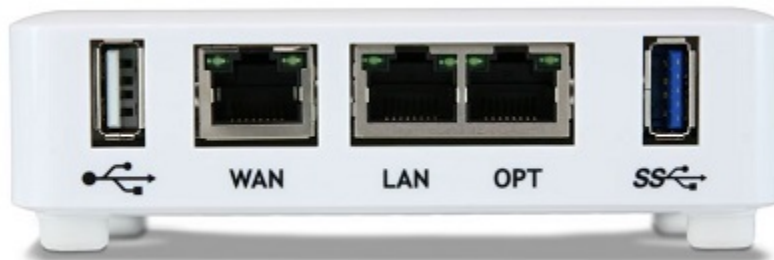
See also:

Connecting to the Console Port Connect to the console. Cable is required.

Tip: To learn more about getting the most out of your pfSense appliance, sign up for a [pfSense Training](#) course or browse our extensive [Resource Library](#).

INPUT AND OUTPUT PORTS

4.1 Front Side



4.2 Ethernet Ports

Interface Name	Port Name	Port Type	Port Speed
WAN	mvneta0.4090	RJ-45	1 Gbps
LAN	mvneta0.4091	RJ-45	1 Gbps
OPT	mvneta0.4092	RJ-45	1 Gbps

4.3 Other Front Ports

- 1x USB 2.0 (left side)
- 1x USB 3.0 (right side)

4.4 Rear Side (from left to right)



1. Power Connector (12VDC 2A Center Pin Positive)
2. Micro USB Console Port
3. Recessed Reset Button (performs a hard reset, immediately turning the system off)

Warning: A hard reset of the system *could* cause data corruption and should be avoided. Halt or reboot the system through the console menu or the web configurator to avoid data corruption.

4.5 Top Indicators

Status LED	State	Description
Black Diamond	Blink Fast	pfSense® boot in progress
	Solid	pfSense boot complete
	Blink Slow	pfSense upgrade is available
Blue Square	Active	mPCIe activity (not supported)
Green Circle	Solid	Power

SAFETY AND LEGAL

- *Safety Notices*
- *Electrical Safety Information*
- *FCC Compliance*
- *Industry Canada*
- *CE Marking*
- *RoHS/WEEE Compliance Statement*
 - *English*
 - *Deutsch*
 - *Español*
 - *Français*
 - *Italiano*
- *Declaration of Conformity*
 - *Česky [Czech]*
 - *Dansk [Danish]*
 - *Nederlands [Dutch]*
 - *English*
 - *Eesti [Estonian]*
 - *Suomi [Finnish]*
 - *Deutsch [German]*
 - *Ελληνική [Greek]*
 - *Magyar [Hungarian]*
 - *Íslenska [Icelandic]*
 - *Italiano [Italian]*
 - *Latviski [Latvian]*
 - *Lietuviškai [Lithuanian]*
 - *Malti [Maltese]*

- *Norsk [Norwegian]*
- *Slovensky [Slovak]*
- *Svenska [Swedish]*
- *Español [Spanish]*
- *Polski [Polish]*
- *Português [Portuguese]*
- *Română [Romanian]*
- *Disputes*
- *Applicable Law*
- *Site Policies, Modification, and Severability*
- *Miscellaneous*
- *Limited Warranty*

5.1 Safety Notices

1. Read, follow, and keep these instructions.
2. Heed all warnings.
3. Only use attachments/accessories specified by the manufacturer

Warning: Do not use this product in location that can be submerged by water.

Warning: Do not use this product during an electrical storm to avoid electrical shock.

5.2 Electrical Safety Information

1. Compliance is required with respect to voltage, frequency, and current requirements indicated on the manufacturer's label. Connection to a different power source than those specified may result in improper operation, damage to the equipment or pose a fire hazard if the limitations are not followed.
2. There are no operator serviceable parts inside this equipment. Service should be provided only by a qualified service technician.
3. This equipment is provided with a detachable power cord which has an integral safety ground wire intended for connection to a grounded safety outlet.
 - a) Do not substitute the power cord with one that is not the provided approved type. If a 3 prong plug is provided, never use an adapter plug to connect to a 2-wire outlet as this will defeat the continuity of the grounding wire.
 - b) The equipment requires the use of the ground wire as a part of the safety certification, modification or misuse can provide a shock hazard that can result in serious injury or death.

- c) Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment.
- d) Protective grounding/earthing is provided by Listed AC adapter. Building installation shall provide appropriate short-circuit backup protection.
- e) Protective bonding must be installed in accordance with local national wiring rules and regulations.

5.3 FCC Compliance

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment.

5.4 Industry Canada

This Class B digital apparatus complies with Canadian ICES-3(B). Cet appareil numérique de la classe B est conforme à la norme NMB-3(B) Canada.

5.5 CE Marking

CE marking on this product represents the product is in compliance with all directives that are applicable to it.

5.6 RoHS/WEEE Compliance Statement

5.6.1 English

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

5.6.2 Deutsch

Die Europäische Richtlinie 2002/96/EC verlangt, dass technische Ausrüstung, die direkt am Gerät und/oder an der Verpackung mit diesem Symbol versehen ist, nicht zusammen mit unsortiertem Gemeindeabfall entsorgt werden darf. Das Symbol weist darauf hin, dass das Produkt von regulärem Haushaltsmüll getrennt entsorgt werden sollte. Es liegt in Ihrer Verantwortung, dieses Gerät und andere elektrische und elektronische Geräte über die dafür zuständigen und von der Regierung oder örtlichen Behörden dazu bestimmten Sammelstellen zu entsorgen. Ordnungsgemäßes Entsorgen und Recyceln trägt dazu bei, potentielle negative Folgen für Umwelt und die menschliche Gesundheit zu vermeiden. Wenn Sie weitere Informationen zur Entsorgung Ihrer Altgeräte benötigen, wenden Sie sich bitte an die örtlichen Behörden oder städtischen Entsorgungsdienste oder an den Händler, bei dem Sie das Produkt erworben haben.

5.6.3 Español

La Directiva 2002/96/CE de la UE exige que los equipos que lleven este símbolo en el propio aparato y/o en su embalaje no deben eliminarse junto con otros residuos urbanos no seleccionados. El símbolo indica que el producto en cuestión debe separarse de los residuos domésticos convencionales con vistas a su eliminación. Es responsabilidad suya desechar este y cualesquiera otros aparatos eléctricos y electrónicos a través de los puntos de recogida que ponen a su disposición el gobierno y las autoridades locales. Al desechar y reciclar correctamente estos aparatos estará contribuyendo a evitar posibles consecuencias negativas para el medio ambiente y la salud de las personas. Si desea obtener información más detallada sobre la eliminación segura de su aparato usado, consulte a las autoridades locales, al servicio de recogida y eliminación de residuos de su zona o pregunte en la tienda donde adquirió el producto.

5.6.4 Français

La directive européenne 2002/96/CE exige que l'équipement sur lequel est apposé ce symbole sur le produit et/ou son emballage ne soit pas jeté avec les autres ordures ménagères. Ce symbole indique que le produit doit être éliminé dans un circuit distinct de celui pour les déchets des ménages. Il est de votre responsabilité de jeter ce matériel ainsi que tout autre matériel électrique ou électronique par les moyens de collecte indiqués par le gouvernement et les pouvoirs publics des collectivités territoriales. L'élimination et le recyclage en bonne et due forme ont pour but de lutter contre l'impact néfaste potentiel de ce type de produits sur l'environnement et la santé publique. Pour plus d'informations sur le mode d'élimination de votre ancien équipement, veuillez prendre contact avec les pouvoirs publics locaux, le service de traitement des déchets, ou l'endroit où vous avez acheté le produit.

5.6.5 Italiano

La direttiva europea 2002/96/EC richiede che le apparecchiature contrassegnate con questo simbolo sul prodotto e/o sull'imballaggio non siano smaltite insieme ai rifiuti urbani non differenziati. Il simbolo indica che questo prodotto non deve essere smaltito insieme ai normali rifiuti domestici. È responsabilità del proprietario smaltire sia questi prodotti sia le altre apparecchiature elettriche ed elettroniche mediante le specifiche strutture di raccolta indicate dal governo o dagli enti pubblici locali. Il corretto smaltimento ed il riciclaggio aiuteranno a prevenire conseguenze potenzialmente negative per l'ambiente e per la salute dell'essere umano. Per ricevere informazioni più dettagliate circa lo smaltimento delle vecchie apparecchiature in Vostro possesso, Vi invitiamo a contattare gli enti pubblici di competenza, il servizio di smaltimento rifiuti o il negozio nel quale avete acquistato il prodotto.

5.7 Declaration of Conformity

5.7.1 Český[Czech]

NETGATE tímto prohlašuje, že tento NETGATE device, je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

5.7.2 Dansk [Danish]

Undertegnede NETGATE erklærer herved, at følgende udstyr NETGATE device, overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

5.7.3 Nederlands [Dutch]

Hierbij verklaart NETGATE dat het toestel NETGATE device, in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. Bij deze verklaart NETGATE dat deze NETGATE device, voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.

5.7.4 English

Hereby, NETGATE, declares that this NETGATE device, is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

5.7.5 Eesti [Estonian]

Käesolevaga kinnitab NETGATE seadme NETGATE device, vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

5.7.6 Suomi [Finnish]

NETGATE vakuuttaa täten että NETGATE device, tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. Français [French] Par la présente NETGATE déclare que l'appareil Netgate, device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

5.7.7 Deutsch [German]

Hiermit erklärt Netgate, dass sich diese NETGATE device, in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMW)

5.7.8 Ελληνικά [Greek]

ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ NETGATE ΔΗΛΩΝΕΙ ΟΤΙ NETGATE device, ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΠΙΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1995/5/ΕΚ.

5.7.9 Magyar [Hungarian]

Alulírott, NETGATE nyilatkozom, hogy a NETGATE device, megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.

5.7.10 Íslenska [Icelandic]

Hér me l sír NETGATE yfir ví a NETGATE device, er í samræmi við grunnkröfur og a rar kröfur, sem ger ar eru í tilskipun 1999/5/EC.

5.7.11 Italiano [Italian]

Con la presente NETGATE dichiara che questo NETGATE device, è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

5.7.12 Latviski [Latvian]

Ar o NETGATE deklar , ka NETGATE device, atbilst Direkt vas 1999/5/EK b tiskaj m pras b m un citiem ar to saist tajiem noteikumiem.

5.7.13 Lietuviškai [Lithuanian]

NETGATE deklaruoja, kad šis NETGATE įrenginys atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

5.7.14 Malti [Maltese]

Hawnhekk, Netgate, jiddikjara li dan NETGATE device, jikkonforma mal- ti ijjiet essenzjali u ma provvedimenti o rajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

5.7.15 Norsk [Norwegian]

NETGATE erklærer herved at utstyret NETGATE device, er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

5.7.16 Slovensky [Slovak]

NETGATE t mto vyhlasuje, e NETGATE device, sp a základné po iadavky a v etky príslu né ustanovenia Smernice 1999/5/ES.

5.7.17 Svenska [Swedish]

Härmed intygar NETGATE att denna NETGATE device, står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

5.7.18 Español [Spanish]

Por medio de la presente NETGATE declara que el NETGATE device, cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

5.7.19 Polski [Polish]

Niniejszym, firma NETGATE o wiadcza, e produkt serii NETGATE device, spełnia zasadnicze wymagania i inne istotne postanowienia Dyrektywy 1999/5/EC.

5.7.20 Português [Portuguese]

NETGATE declara que este NETGATE device, está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

5.7.21 Română [Romanian]

Prin prezenta, NETGATE declară că acest dispozitiv NETGATE este în conformitate cu cerințele esențiale și alte prevederi relevante ale Directivei 1999/5/CE.

5.8 Disputes

ANY DISPUTE OR CLAIM RELATING IN ANY WAY TO YOUR USE OF ANY PRODUCTS/SERVICES, OR TO ANY PRODUCTS OR SERVICES SOLD OR DISTRIBUTED BY RCL OR ESF WILL BE RESOLVED BY BINDING ARBITRATION IN AUSTIN, TEXAS, RATHER THAN IN COURT. The Federal Arbitration Act and federal arbitration law apply to this agreement.

THERE IS NO JUDGE OR JURY IN ARBITRATION, AND COURT REVIEW OF AN ARBITRATION AWARD IS LIMITED. HOWEVER, AN ARBITRATOR CAN AWARD ON AN INDIVIDUAL BASIS THE SAME DAMAGES AND RELIEF AS A COURT (INCLUDING INJUNCTIVE AND DECLARATORY RELIEF OR STATUTORY DAMAGES), AND MUST FOLLOW THE TERMS OF THESE TERMS AND CONDITIONS OF USE AS A COURT WOULD.

To begin an arbitration proceeding, you must send a letter requesting arbitration and describing your claim to the following:

Rubicon Communications LLC
Attn.: Legal Dept.
4616 West Howard Lane, Suite 900
Austin, Texas 78728
legal@netgate.com

The arbitration will be conducted by the American Arbitration Association (AAA) under its rules. The AAA's rules are available at www.adr.org. Payment of all filing, administration and arbitrator fees will be governed by the AAA's rules.

We each agree that any dispute resolution proceedings will be conducted only on an individual basis and not in a class, consolidated or representative action. We also both agree that you or we may bring suit in court to enjoin infringement or other misuse of intellectual property rights.

5.9 Applicable Law

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CONNECTING TO THE CONSOLE PORT

There are times when directly accessing the console is required. Perhaps webGUI or SSH access has been locked out, or the password has been lost or forgotten. This guide shows how to regain access directly through the console.

6.1 Simple Configuration

Below are the simple instructions for connecting to the console port with Microsoft Windows. If these steps do not work for you or if you're an operating system other than Windows, then please skip forward to *Advanced Configuration*.

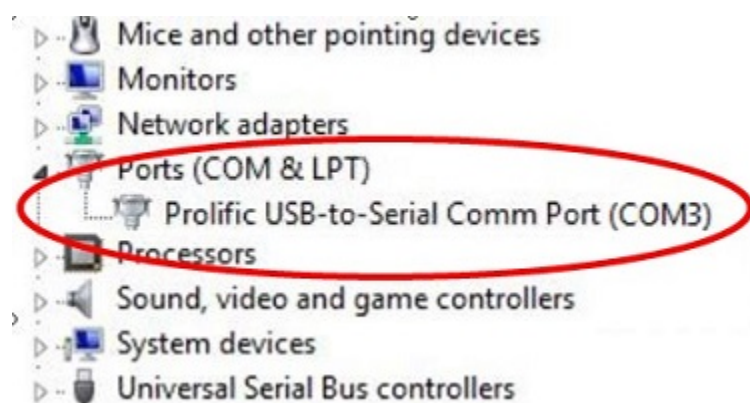
6.1.1 Serial Terminal Emulation Client

A serial terminal emulation program is required to access the pfSense® appliance console through the serial interface. PuTTY is free and recommended.

6.1.2 Configuring Serial Terminal Emulator

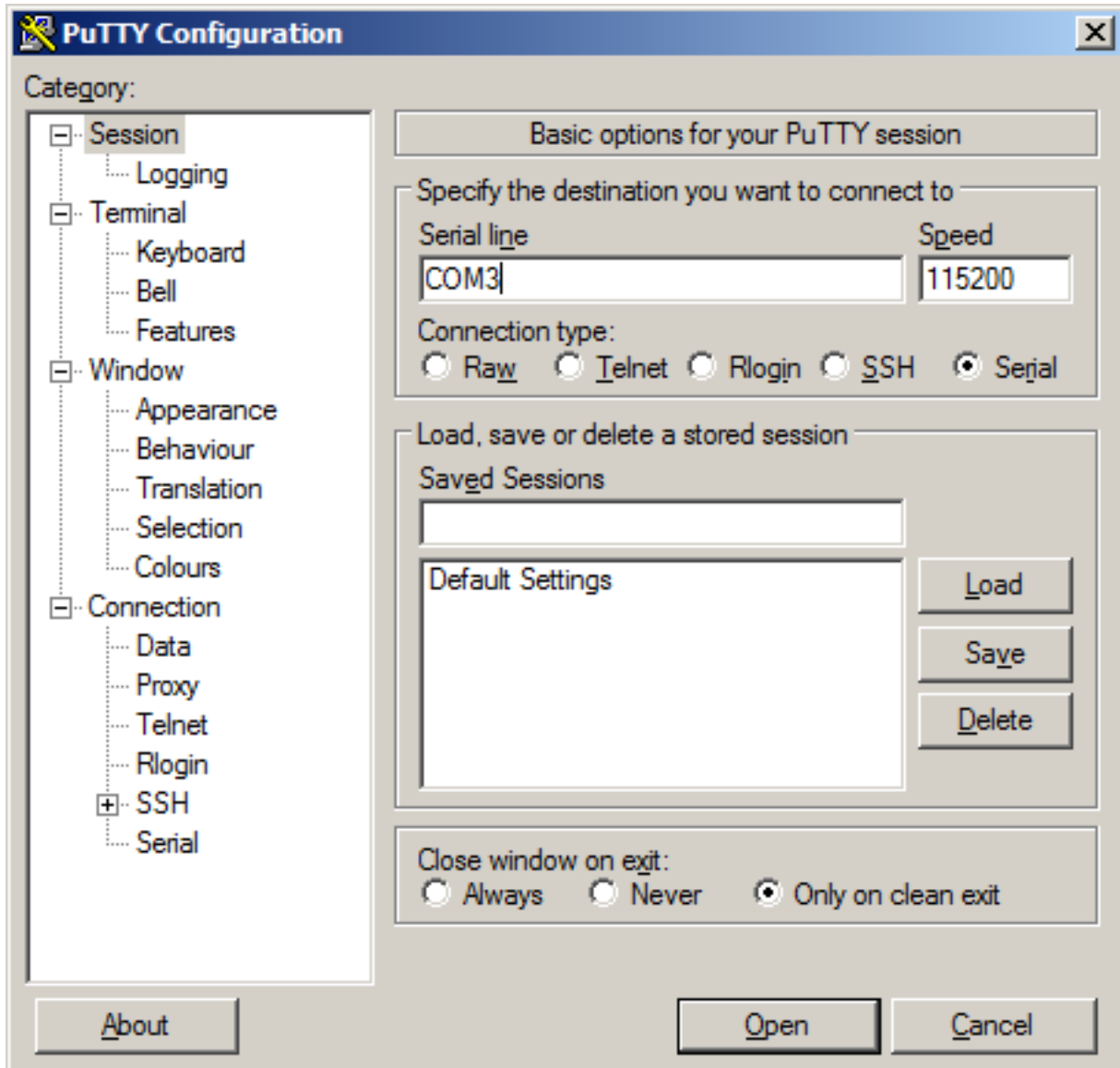
PuTTY must be configured to communicate with the pfSense appliance. In order to do so, you must first know what COM Port your computer has assigned to your serial port. Even if you assigned your serial port to COM1 in the BIOS, Windows may remap it to a different COM Port.

To determine this, you must open **Windows Device Manager** and view the COM port assignment:



Note: The first time you connect your computer to the pfSense appliance, it may take up to 3 minutes for the driver to install. It should install automatically for Windows 7 and above.

Open PuTTY and locate the **Session** display as shown below. Set **Serial line** to the COM Port that is displayed in Windows Device Manager, COM3 for this example, and the **Speed** to 115200 bits per second, the speed of the BIOS in this case. For the **Connection type**, select **Serial**.



Click the **Open** button and the console screen will be displayed.

6.2 Advanced Configuration

A Prolific PL2303 USB-to-UART bridge driver is used to provide access to the console, which is exposed via the Micro-USB B port on the appliance.

6.2.1 Install the Driver

Install an appropriate Prolific PL2303 USB to UART Bridge driver on the workstation used to connect with the system if needed. There are drivers available for Windows, Mac OS X, and Linux [available for download](#).

6.2.2 Connect a USB Cable

Next, locate an appropriate USB cable that has a Micro-USB B connector on one end and a regular USB (Type A) plug on the other end. These cables are commonly used with smaller USB peripherals such as GPS units, cameras, and so on.

Gently push the Micro-USB B plug end into the console port on the appliance and connect the USB type A plug into an available USB port on the workstation.

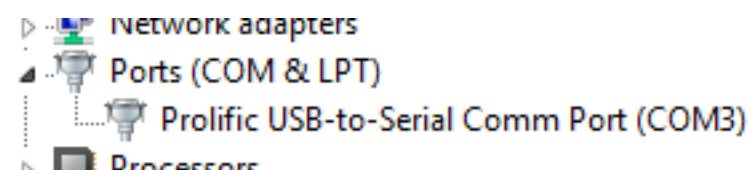
Tip: Be certain to gently push in the Micro-USB B connector on the system side completely. With most cables there will be a tangible “click”, “snap”, or similar indication when the cable is fully engaged.

6.2.3 Locate the Console Port Device

The appropriate device to attach the terminal program to each platform varies by platform and must be located before attempting to connect to the console.

Windows

To locate the device name on Windows, open **Device Manager** and expand the section for **Ports (COM & LPT)**. Look for an entry with a title such as **Prolific USB-to-Serial Comm Port**. If there is a label in the name that contains “COMX” where X is a decimal digit (e.g. COM1), that value is what would be used as the port in the terminal program.



Mac OS X

The device associated with the system console is likely to show up as `/dev/cu.usbserial`.

Linux

The device associated with the system console is likely to show up as `/dev/ttyUSB0`. Look for messages about the device attaching in the system log files or by running `dmesg`.

Note: If the device does not appear in `/dev/`, see the note above in the driver section about manually loading the Linux driver and then try again.

FreeBSD

The device associated with the system console is likely to show up as `/dev/cuaU0`. Look for messages about the device attaching in the system log files or by running `dmesg`.

6.2.4 Launch a Terminal Program

Use a terminal program to connect to the system console port. **PuTTY** is a popular terminal program that is available on various operating systems. Some other choices of terminal programs:

- Linux: screen, PuTTY, minicom, dterm
- Mac OS X: screen, ZTerm, cu
- Windows: PuTTY, SecureCRT, **Do not use Hyperterminal**
- FreeBSD: screen, cu

The settings to use within the terminal program are:

Speed 115200 baud

Data bits 8

Parity none

Stop bits 1

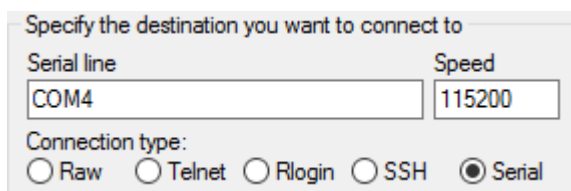
Flow Control Off or XON/OFF. Hardware flow control (RTS/CTS) **must** be disabled.

Client-Specific Examples

PuTTY

Launch PuTTY and configure it for a **Serial** type connection with a speed of **115200** using the port name located previously.

- Windows Example:



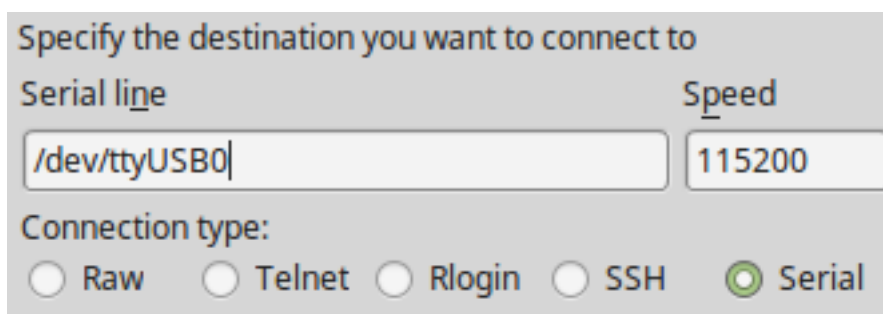
Specify the destination you want to connect to

Serial line	Speed
COM4	115200

Connection type:

☐ Raw ☐ Telnet ☐ Rlogin ☐ SSH ☒ Serial

- Linux Example:



Specify the destination you want to connect to

Serial line	Speed
/dev/ttyUSB0	115200

Connection type:

☐ Raw ☐ Telnet ☐ Rlogin ☐ SSH ☒ Serial

PuTTY generally handles most cases OK but can have issues with line drawing characters on certain platforms.

These settings seem to work best (tested on Windows):

Window Columns x Rows = 80x24

Window > Appearance Font = *Courier New 10pt* or *Consolas 10pt*

Window > Translation Remote Character Set = *Use font encoding* or *UTF-8*

Window > Translation Handling of line drawing characters = *Use font in both ANSI and OEM modes*
or *Use Unicode line drawing code points*

Window > Colours Indicate bolded text by changing = The colour

GNU screen

In many cases *screen* may be invoked simply by using the proper command line:

- Mac OS X

```
sudo screen /dev/cu.usbserial 115200
```

- Linux

```
sudo screen /dev/ttyUSB0 115200
```

- FreeBSD

```
sudo screen /dev/cuaU0 115200
```

If portions of the text are unreadable but appear to be properly formatted, the most likely culprit is a character encoding mismatch in the terminal. For example, on OS X this is commonly required

```
sudo screen -U /dev/cu.usbserial 115200
```

Adding the `-U` parameter to the *screen* command line arguments forces it to use UTF-8 for character encoding.

6.3 Troubleshooting

6.3.1 No Serial Output

If there is no output at all, check the following items:

- Ensure the cable is correctly attached and fully inserted
- Ensure the terminal program is using the correct port
- Ensure the terminal program is configured for the correct speed. The default BIOS speed is 115200, and many other modern operating systems use that speed as well. Some older operating systems or custom configurations may use slower speeds such as 9600 or 38400.
- Ensure the operating system is configured for the proper console (e.g. `ttys1` in Linux). Consult the various operating install guides on this site for further information.

6.3.2 Garbled Serial Output

If the serial output appears to be garbled, binary, or random characters check the following items:

- Ensure the terminal program is configured for the correct speed. (See “No Serial Output” above)

- Ensure the terminal program is configured for the proper character encoding, such as UTF-8 or Latin-1, depending on the operating system. (See the previous entry under “GNU screen”)

6.3.3 Serial Output Stops After the BIOS

If serial output is shown for the BIOS but stops afterward, check the following items:

- Ensure the terminal program is configured for the correct speed for the installed operating system. (See “No Serial Output” above)
- Ensure the installed operating system is configured to activate the serial console.
- Ensure the installed operating system is configured for the proper console (e.g. `ttys1` in Linux). Consult the various operating install guides on this site for further information.
- If booting from a USB flash drive, ensure that the drive was written correctly and contains a bootable operating system image.

REINSTALLING PFSENSE SOFTWARE

1. Please [open a support ticket](#) to request access to the factory firmware by selecting **Firmware Access** as the **General Problem** and then select **Netgate SG-1100** for the platform. Make sure to include the serial number in the ticket to expedite access.

Once the ticket is processed, the latest stable version of the firmware will be attached to the ticket, with a name such as:

```
pfSense-netgate-SG-1100-recovery-2.4.4-RELEASE-p3-aarch64.img.gz
```

Note: The pfSense® factory version is the version that is preinstalled on units purchased from Netgate. The factory image is optimally tuned for our hardware and contains some features that cannot be found elsewhere, such as the AWS VPN Wizard.

2. Write the image to a USB memstick. Locating the image and writing it to a USB memstick is covered in detail under [Writing Flash Drives](#).
3. [Connect to the console port](#) of the pfSense device.
4. Insert the memstick into the USB port and boot the system.

Tip: Best practice is to **turn off** the system, **insert** the USB memstick, ensure you have **console access**, and **reboot** the system. You will need to **interrupt the boot process** very soon after initial boot.

5. When prompted, press any key to stop the autoboot process.
6. Type `run usbrecovery` at the **Marvell>>** prompt and press `Enter`.
7. Select the destination device by pressing `Enter`, then confirm by pressing `y` and `Enter`.

Note: The onboard eMMC flash memory is always `mmcsd0`.

8. Wait for the installation to the eMMC to complete.
9. Once the install has completed, remove the memstick, and cycle the power (unplug the SG-1100 and plug it back in) to reboot the SG-1100.

Note: For information on restoring from a previously saved configuration, go to [Backup and Restore](#).

```
NOTICE: BL2: Built : 16:19:45, Nov  1 20NOTICE: BL31: v1.3(release):armada-17.
10.8:34247e0
NOTICE: BL31:

U-Boot 2017.03-armada-17.10.2-g6a6581a-dirty (Nov 01 2018 - 16:04:57 -0300)

Model: Marvell Armada 3720 Community Board ESPRESSOBin
      CPU      @ 1200 [MHz]
      L2       @ 800 [MHz]
      TClock   @ 200 [MHz]
      DDR      @ 750 [MHz]
DRAM:  1 GiB
U-Boot DT blob at : 000000003f716298
Comphy-0: USB3          5 Gbps
Comphy-1: PEX0          2.5 Gbps
Comphy-2: SATA0         6 Gbps
SATA link 0 timeout.
AHCI 0001.0300 32 slots 1 ports 6 Gbps 0x1 impl SATA mode
flags: ncq led only pmp fbss pio slum part sxs
PCIE-0: Link down
MMC:   sdhci@d0000: 0, sdhci@d8000: 1
SF: Detected mx25u3235f with page size 256 Bytes, erase size 64 KiB, total 4 MiB
Net:   eth0: neta@30000 [PRIME]
Hit any key to stop autoboot:  2
```

```
10.8:34247e0
NOTICE: BL31:

U-Boot 2017.03-armada-17.10.2-g6a6581a-dirty (Nov 01 2018 - 16:04:57 -0300)

Model: Marvell Armada 3720 Community Board ESPRESSOBin
      CPU      @ 1200 [MHz]
      L2       @ 800 [MHz]
      TClock   @ 200 [MHz]
      DDR      @ 750 [MHz]
DRAM:  1 GiB
U-Boot DT blob at : 000000003f716298
Comphy-0: USB3          5 Gbps
Comphy-1: PEX0          2.5 Gbps
Comphy-2: SATA0         6 Gbps
SATA link 0 timeout.
AHCI 0001.0300 32 slots 1 ports 6 Gbps 0x1 impl SATA mode
flags: ncq led only pmp fbss pio slum part sxs
PCIE-0: Link down
MMC:   sdhci@d0000: 0, sdhci@d8000: 1
SF: Detected mx25u3235f with page size 256 Bytes, erase size 64 KiB, total 4 MiB
Net:   eth0: neta@30000 [PRIME]
Hit any key to stop autoboot:  0
Marvell>> run usbrecovery
```



```
| ' \ | | / _ | / _ \ | ' \ | / _ | / _ \  
| | ) | | _ \ \ \ _ | | | \ \ \ \ \ |  
| . _ / | | | _ \ \ _ | | | _ \ \ \ |  
| _ |  
| _ |
```

Welcome to pfSense 2.4.4-RELEASE1...

Netgate SG-1100 firmware recovery

Serial:

Netgate Crypto ID:

This will install the standard firmware and will erase all the existing contents of the destination device permanently.

eMMC device: mmcscd0

Type the name of the destination device (mmcscd0) or type enter to install on mmcscd0:

Selected eMMC device: mmcscd0

Are you sure you want to continue ? (y/N) y

Welcome to pfSense 2.4.4-RELEASE1...

Netgate SG-1100 firmware recovery

Serial:

Netgate Crypto ID:

This will install the standard firmware and will erase all the existing contents of the destination device permanently.

eMMC device: mmcscd0

Type the name of the destination device (mmcscd0) or type enter to install on mmcscd0:

Selected eMMC device: mmcscd0

Are you sure you want to continue ? (y/N) y

Erasing the eMMC contents...

Writing the firmware to eMMC...

(this may take a few minutes to complete)


```
FreeBSD/arm64 (pfSense-sg1100-recovery) (ttyu0)


May 16 10:46:48 pfSense-sg1100-recovery shutdown: halt by root:
Stopping cron.
Waiting for PIDS: 521.
Stopping devd.
Waiting for PIDS: 318.
Writing entropy file:..
Writing early boot entropy file:..
Terminated
.
May 16 10:46:51 pfSense-sg1100-recovery syslogd: exiting on signal 15
Waiting (max 60 seconds) for system process `vnlru' to stop... done
Waiting (max 60 seconds) for system process `bufdaemon' to stop... done
Waiting (max 60 seconds) for system process `syncer' to stop...
Syncing disks, vnodes remaining... 1 0 0 done
All buffers synced.
Uptime: 2m46s

The operating system has halted.
Power cycle or reset to reboot.
```




CONFIGURING A ROUTER ON A STICK

This optional guide shows the steps required to configure all three VLANs on one port. In this example we will use the OPT port.

Note: Performing this configuration from the LAN port will help prevent us from being locked out. Also, the WAN and LAN ports will still work with untagged devices connected to them. The LAN port could be used as a management port. In normal operation, the switch would only need to be connected to OPT, with WAN and LAN disconnected.

1. Connect to the LAN port on the SG-1100.
2. From the pfSense® webGUI menu, navigate to **Interfaces > Switches**.
3. Go to the **VLANs** tab.
4. Click on the  button for **VLAN group 3**.

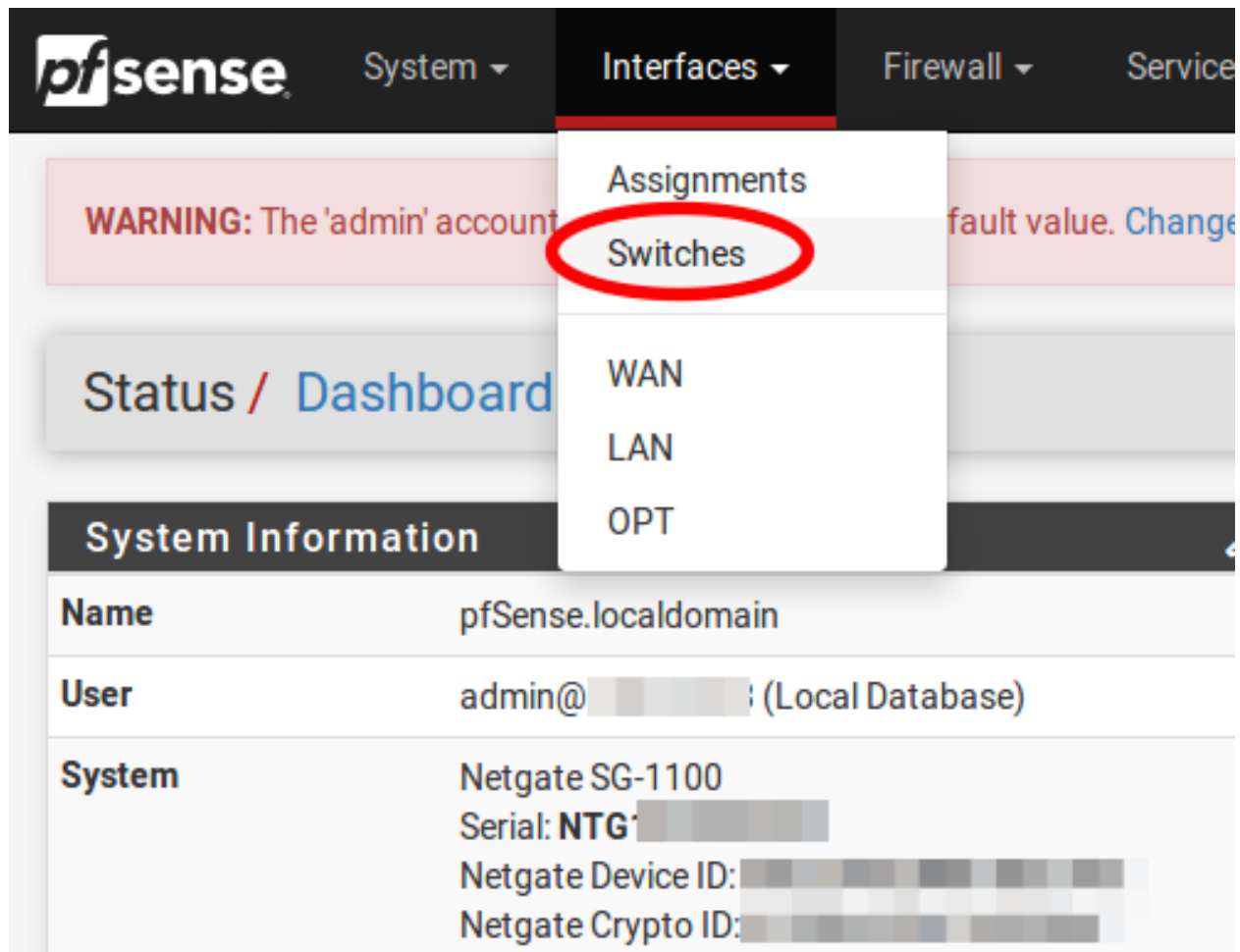
Warning: **VLAN group 0** must remain in place and **VLAN groups 1-3** must include **0t** as a member, in order to function properly.

5. Check **tagged** for **Member 1**, then click **Save**.
6. Click on the  button for **VLAN group 2**.
7. Click on the **Add member** button, Enter Member 1, check **tagged** and then click **Save**.
8. Click on the  button for **VLAN group 1**.
9. Click on the **Add member** button, Enter Member 1, check **tagged** and then click **Save**.
10. Click on the **Ports** tab.
11. Click on the **Port VID** for **OPT**. Change the default value 4092 to 1. In the lower right-hand corner click **Save**.

When completed the Ports and VLANs configuration should reflect the screenshots below:

You can now connect a managed switch (VLANs 4090-4092 must be trunked on the switchport of the managed switch) to OPT with VLANs 4090 (WAN), 4091 (LAN), and 4092 (OPT) tagged to it.

If you need access to the WebConfigurator on LAN, you can just connect a laptop to LAN and you should receive a DHCP lease (unless DHCP Server on LAN has been disabled). You will also be able to access the WebGUI (unless the default Anti-Lockout Rule has been disabled) and internet (unless the Default allow LAN to any rule has been disabled).



The screenshot shows the pfSense web interface. The top navigation bar includes the pfSense logo and tabs for System, Interfaces, Firewall, and Services. The 'Interfaces' tab is selected, and its dropdown menu is open, showing 'Assignments' and 'Switches' (which is circled in red). Below the menu, a warning message states: 'WARNING: The 'admin' account is the default value. Change'. The main content area displays 'Status / Dashboard' and a 'System Information' section. The 'System Information' section contains the following details:

Name	pfSense.localdomain
User	admin@ (Local Database)
System	Netgate SG-1100 Serial: NTG Netgate Device ID: Netgate Crypto ID:

Interfaces / Switch / Ports

System Ports **VLANs**

SG-1100 Switch Ports

Port #	Port name	Port VID	LAGG	Flags	State	Media	Status
0	LAN Uplink	1	-	HOST	FORWARDING	Ethernet 1000baseT <full-duplex>	Active
1	OPT	4091	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier
2	LAN	4091	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier
3	WAN	4090	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier

Save

Interfaces / Switch / VLANs

System Ports **VLANs**

SG-1100 Switch 802.1Q VLANs

Enable

☒ Enable 802.1q VLAN mode

If enabled, packets with unknown VLAN tags will be dropped.

VLAN(s) table	VLAN group	VLAN tag	Members	Description	Action
	0	1	0	Default System VLAN	
	1	4090	0t,3	WAN	
	2	4091	0t,2	LAN	
	3	4092	0t,1	OPT	

Save

Add Tag

Edit

Interfaces / Switch / VLANs / Edit ?

Vlan properties

VLAN tag

4092

Enter a VLAN ID number (that is not already in use.)

Description

OPT

A description may be entered here for administrative reference (not parsed).

Member(s)

0

☒ tagged

Delete

1

☐ tagged

Delete

2

Save

+ Add member

Interfaces / Switch / VLANs ?

System Ports VLANs

SG-1100 Switch 802.1Q VLANs

Enable

☒ Enable 802.1q VLAN mode

If enabled, packets with unknown VLAN tags will be dropped.

VLAN(s) table	VLAN group	VLAN tag	Members	Description	Action
	0	1	0	Default System VLAN	
	1	4090	0t,3	WAN	
	2	4091	0t,2	LAN	
	3	4092	0t	OPT	

Edit

Save + Add Tag

Interfaces / Switch / VLANs / Edit ?

Vlan properties

VLAN tag ⌵
 Enter a VLAN ID number (that is not already in use.)

Description 📄
 A description may be entered here for administrative reference (not parsed).

Member(s) ☒ tagged 🗑 Delete

☐ tagged 🗑 Delete

2 3 ☒ tagged 🗑 Delete

4 1 1

4
1

Interfaces / Switch / VLANs ?

System Ports VLANs

SG-1100 Switch 802.1Q VLANs

Enable ☒ Enable 802.1q VLAN mode
 If enabled, packets with unknown VLAN tags will be dropped.

VLAN(s) table	VLAN group	VLAN tag	Members	Description	Action
	0	1	0	Default System VLAN	
	1	4090	0t,3	WAN	🗑
	2	4091	0t,1t,2	LAN	
	3	4092	0t,1t	OPT	

4
1

Interfaces / Switch / VLANs / Edit ?

Vlan properties

VLAN tag ▼
 Enter a VLAN ID number (that is not already in use.)

Description 👤
 A description may be entered here for administrative reference (not parsed).

Member(s) ☒ tagged 🗑️ Delete

☐ tagged 🗑️ Delete

2 3 ☒ tagged 🗑️ Delete

4 📁 Save + Add member 1

Interfaces / Switch / VLANs ?

System Ports VLANs

SG-1100 Switch 802.1Q VLANs

Enable ☒ Enable 802.1q VLAN mode
 If enabled, packets with unknown VLAN tags will be dropped.

VLAN(s) table	VLAN group	VLAN tag	Members	Description	Action
	0	1	0	Default System VLAN	✎
	1	4090	0t,1t,3	WAN	✎ 🗑️
	2	4091	0t,1t,2	LAN	✎ 🗑️
	3	4092	0t,1t	OPT	✎ 🗑️

📁 Save + Add Tag

Interfaces / Switch / Ports

System Ports VLANs

SG-1100 Switch Ports

Port #	Port name	Port VID	LAGG	Flags	State	Media	Status
0	LAN Uplink	1	-	HOST	FORWARDING	Ethernet 1000baseT <full-duplex>	Active
1	OPT	4092	-		FORWARDING	Default (no preference, typically autoselect) ▼	No Carrier
2	LAN	4091	-		FORWARDING	Default (no preference, typically autoselect) ▼	No Carrier
3	WAN	4090	-		FORWARDING	Ethernet autoselect (1000baseT <full-duplex>) Default (no preference, typically autoselect) ▼	Active

Save

Interfaces / Switch / VLANs

System

Ports

VLANs

SG-1100 Switch 802.1Q VLANs


Enable

☒ Enable 802.1q VLAN mode
If enabled, packets with unknown VLAN tags will be dropped.


VLAN(s) table	VLAN group	VLAN tag	Members	Description	Action
	0	1	0	Default System VLAN	
	1	4090	0t,1t,3	WAN	
	2	4091	0t,1t,2	LAN	
	3	4092	0t,1t	OPT	




Save


Add Tag

Interfaces / Switch / Ports 

System Ports VLANs

Port settings updated. 

SG-1100 Switch Ports							
Port #	Port name	Port VID	LAGG	Flags	State	Media	Status
0	LAN Uplink	1	-	HOST	FORWARDING	Ethernet 1000baseT <full-duplex>	Active
1	OPT	1	-		FORWARDING	Default (no preference, typically autoselect) 	No Carrier
2	LAN	4091	-		FORWARDING	Default (no preference, typically autoselect) 	No Carrier
3	WAN	4090	-		FORWARDING	Default (no preference, typically autoselect) 	No Carrier

 Save

INSTALLING THE WALLMOUNT KIT

This page shows how to install the optional [SG-1100 Wall Mount Kit](#).

Tip: Save the SG-1100 MAC Address, Serial Number, and NDI, located on the bottom of the system, before attaching the SG-1100 to the wall.

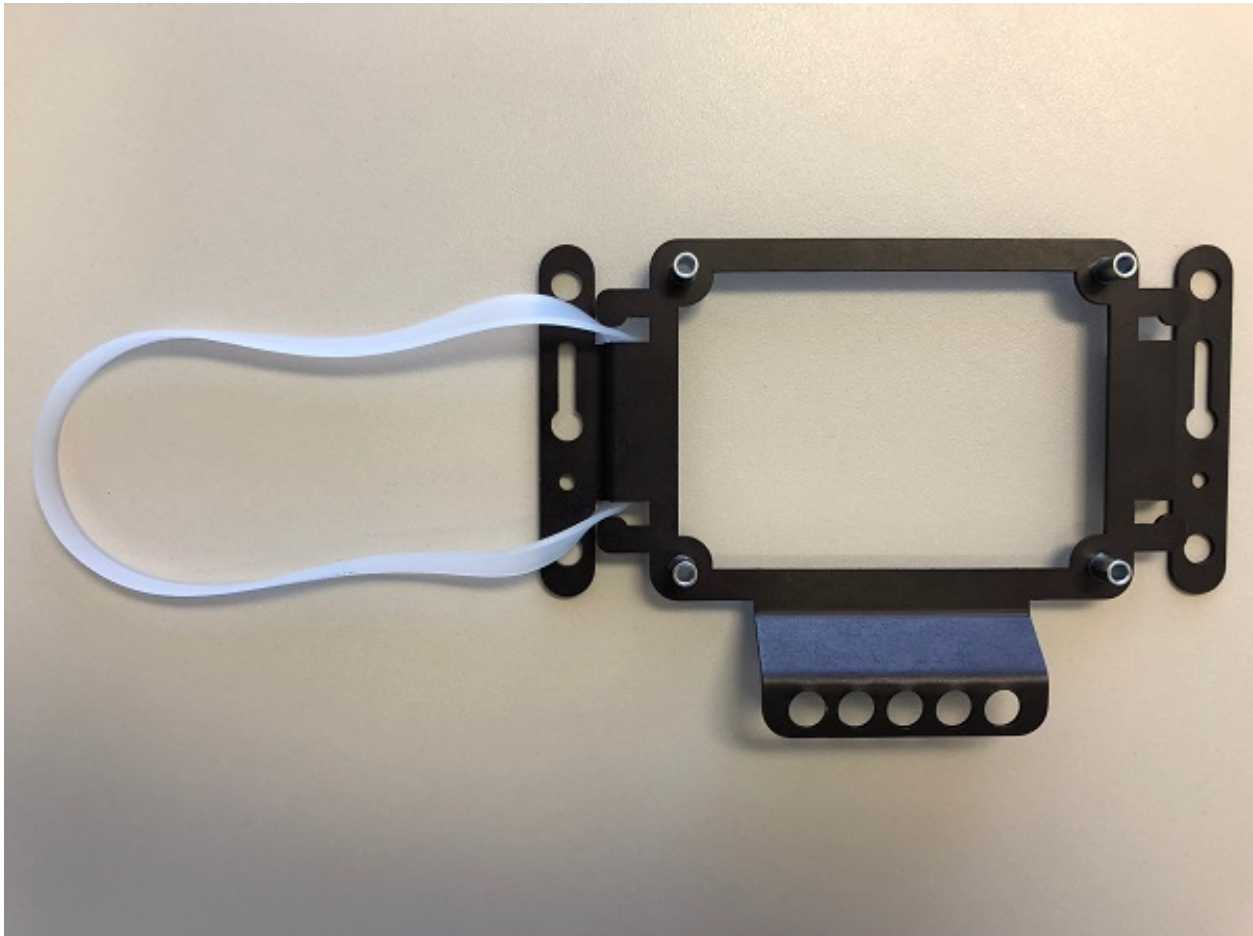


Fig. 1: Loop one side of the Silicone Band under the wall mount of the SG-1100

Note: Remove the rubber standoff feet from the SG-1100 prior to attaching to the wall mount. Do **not** remove the

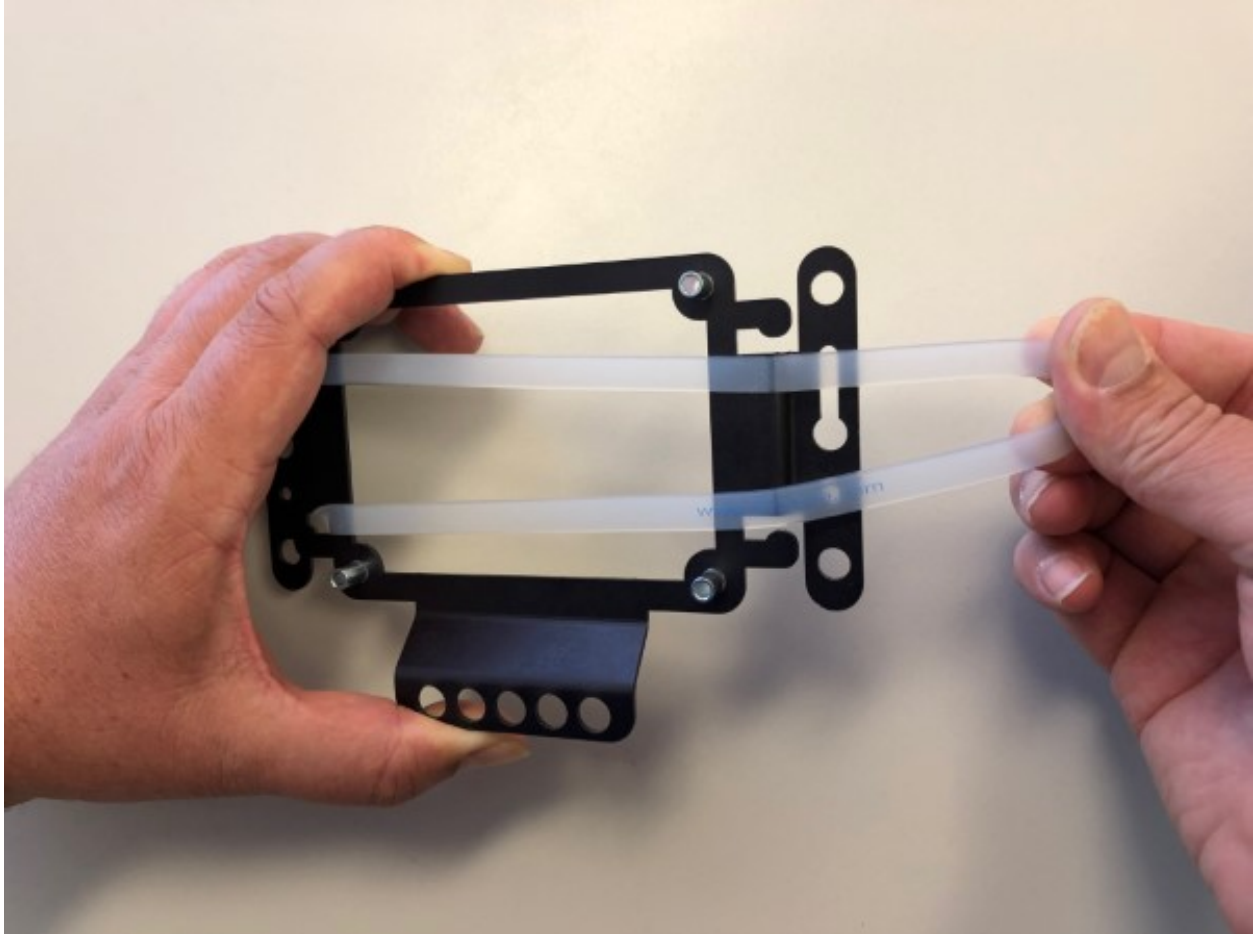
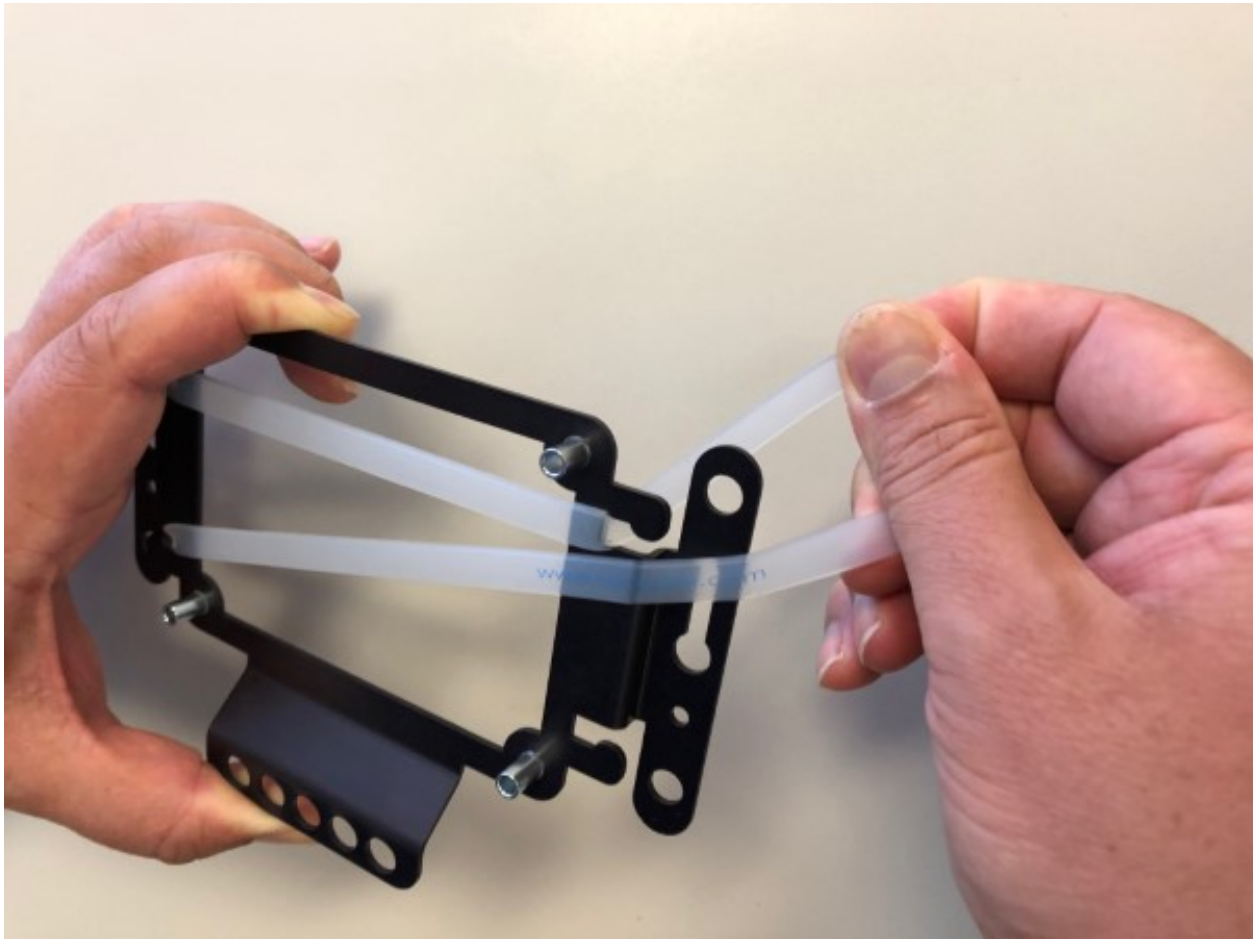


Fig. 2: Stretch the Silicone Band to the opposite side of the wall mount



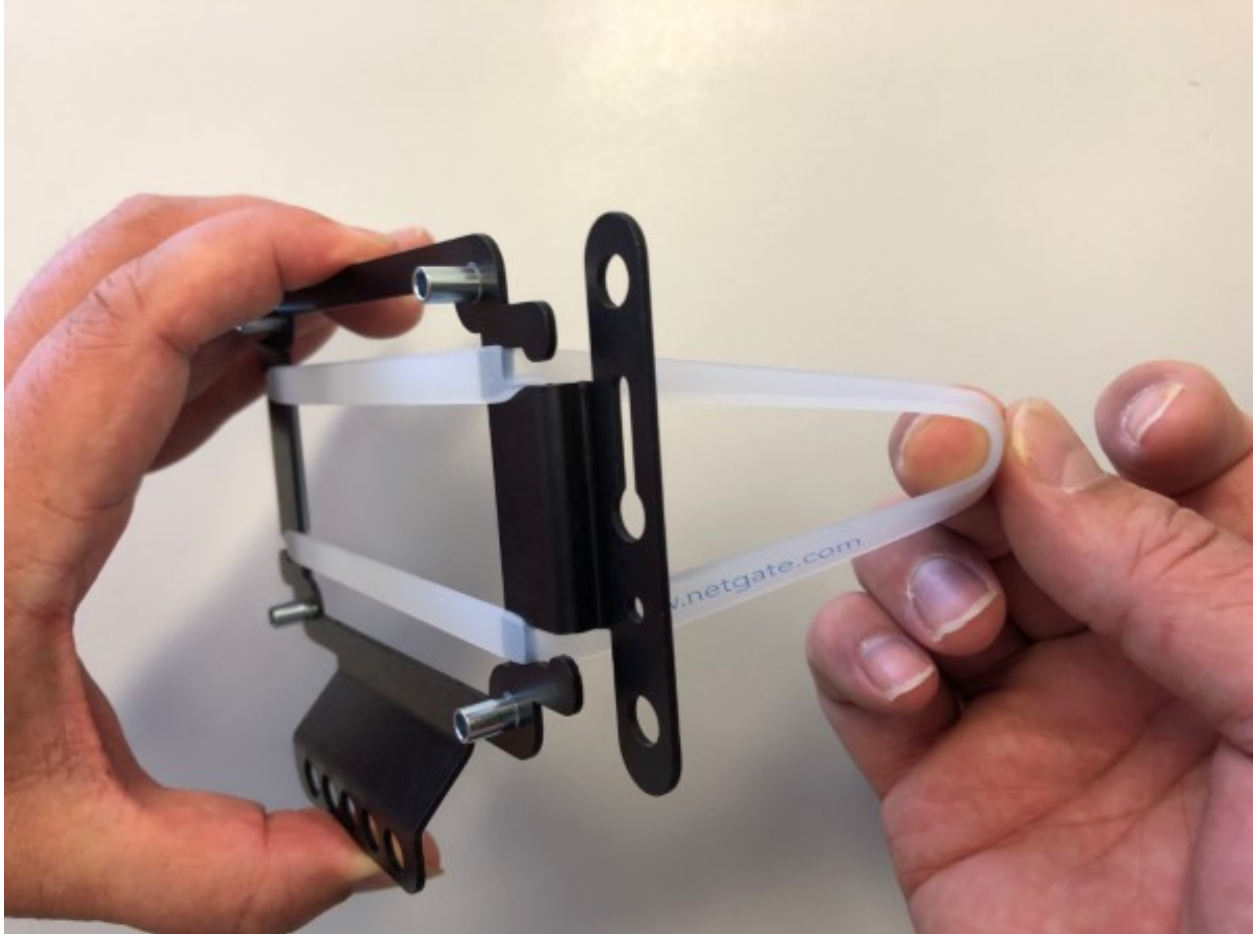


Fig. 3: Loop the silicone band under the opposite side of the wall mount

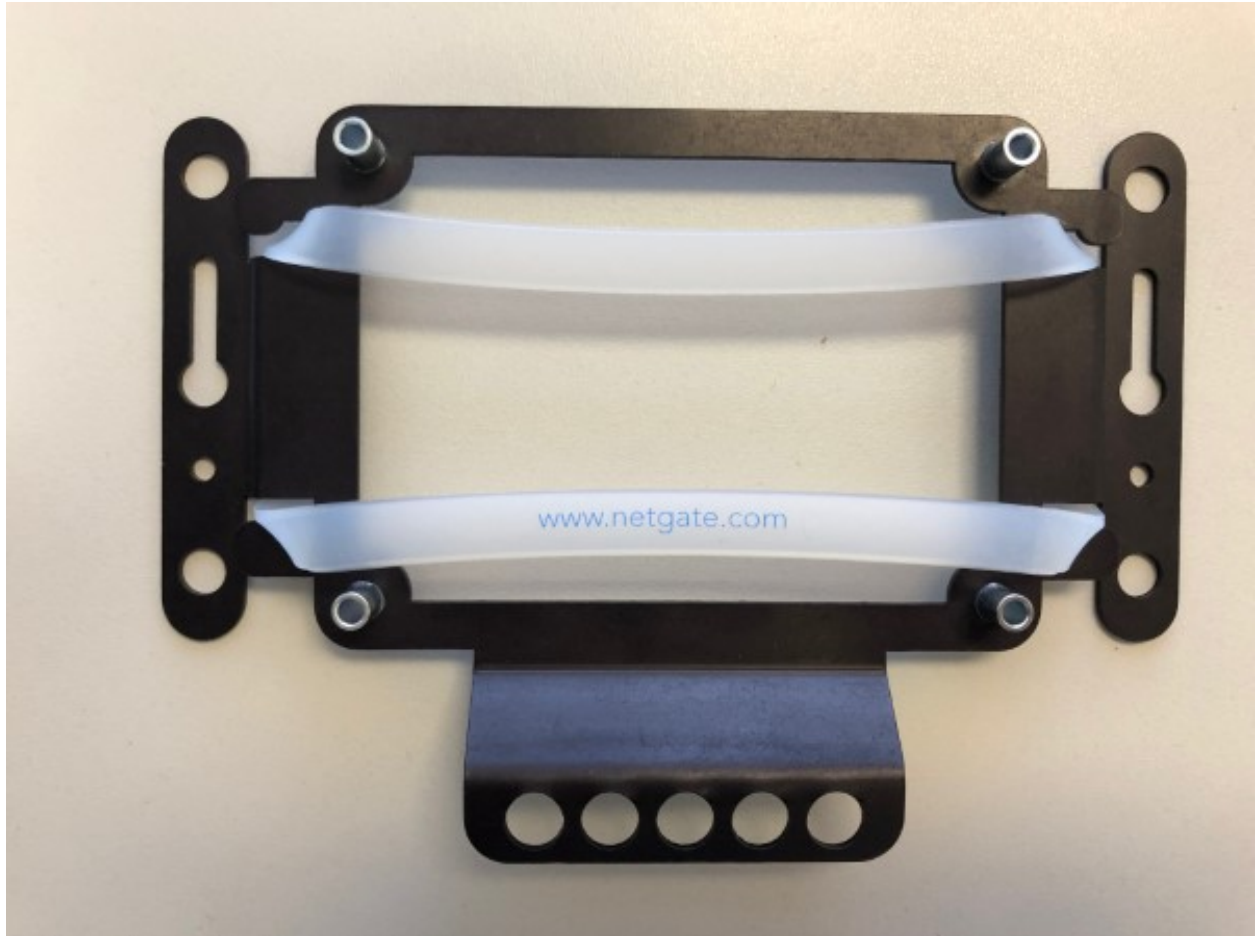


Fig. 4: The silicone band should look like this

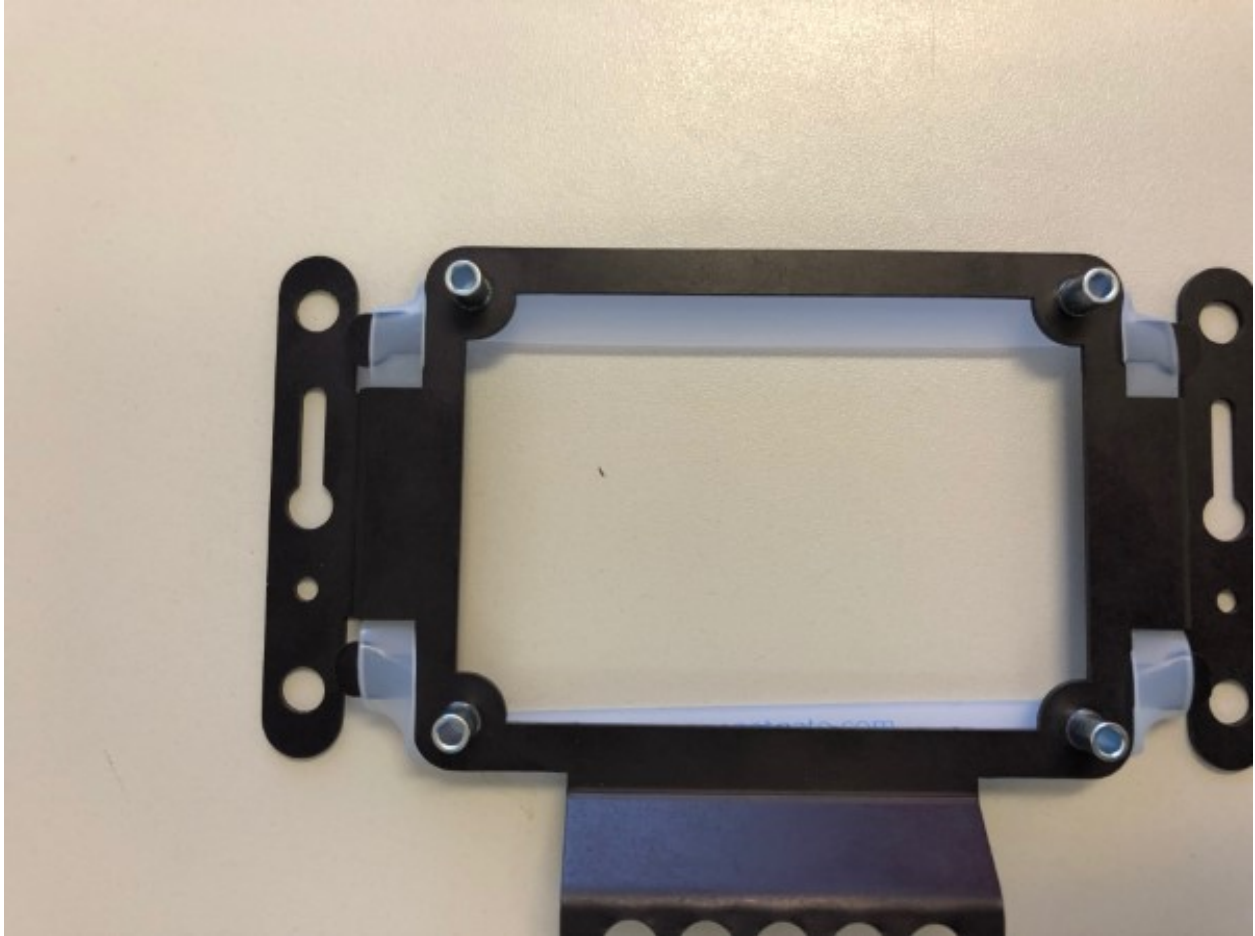


Fig. 5: Tuck both sides of the silicone band under the wall mount

screws that are under the rubber standoff feet.



Fig. 6: Place the SG-1100 over the silver aluminum standoffs on the wall mount and pull one side of the silicone band over the SG-1100, then the other

Tip: Remember to save the SG-1100 MAC Address, Serial Number, and NDI, located on the bottom of the system, before attaching the SG-1100 to the wall.

Hang the wall mount with the cables hanging down. Secure the cables to the holes on the wall mount with cable ties to relieve the weight from the ports.



Fig. 7: When mounted properly, the SG-1100 should look like this



Fig. 8: Note the silicone band under the SG-1100 when installed correctly



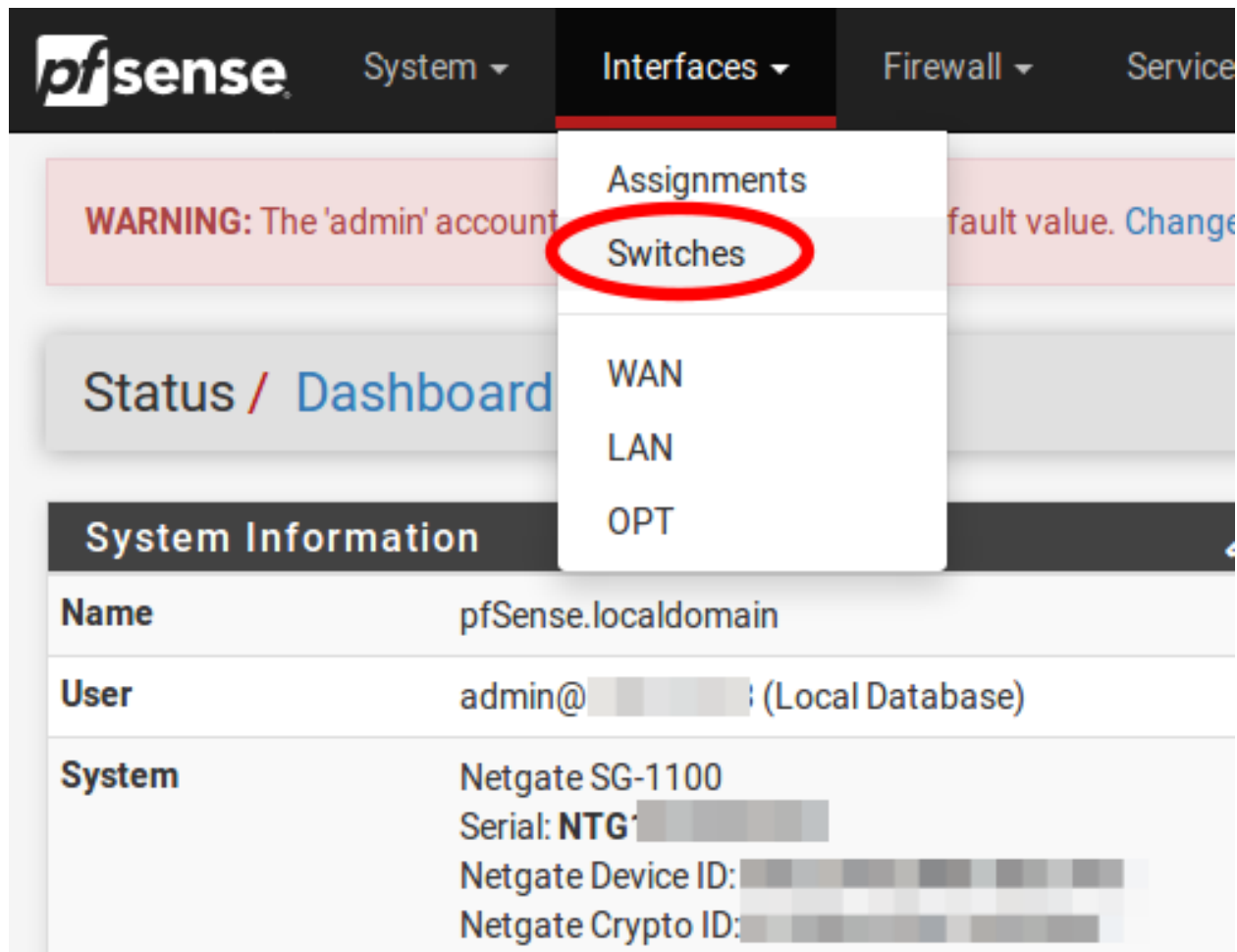
Fig. 9: An SG-1100 wall mount kit correctly installed

CONFIGURING THE SWITCH PORTS

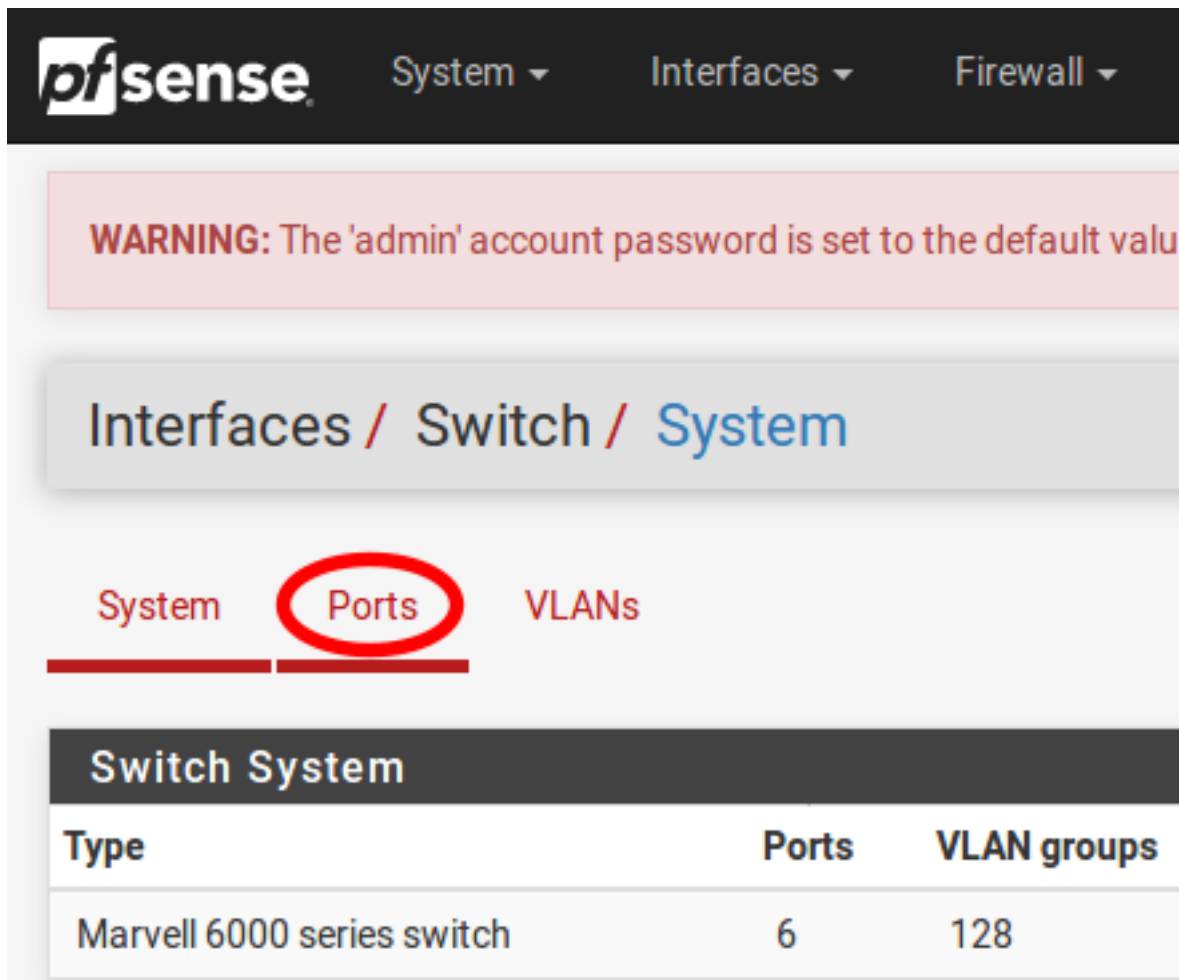
This optional guide shows the steps required to configure the LAN and OPT ethernet ports to be on the same VLAN.

Note: When connecting to the webConfigurator, be sure you are NOT connected to the port you are going to configure or you will lose connectivity during this procedure.

1. Open the pfSense® WebGUI and log in.
2. From the menu, navigate to **Interfaces > Switches**.



- Go to the **Ports** sub-menu.




- Click on the **Port VID** for **OPT**. Change the default value from 4092 to 4091. In the lower right-hand corner click **Save**.

At this point **Interfaces > Switches > Ports** should look like the following:

- Click on the **VLANs** tab.
- Click on the  button for **VLAN group 3**.

Warning: **VLAN group 0** must remain in place and **VLAN groups 1-3** must include **0t** as a member, in order to function properly.

- Click **Delete** for **Member 1**, then click **Save**.
- Click on the  button on **VLAN group 2**.
- Click on the **Add member** button. Enter Member 1, uncheck **tagged** and then click **Save**.
- Confirm the configuration matches the screenshots below:

Interfaces / Switch / Ports ?

System Ports VLANs

SG-1100 Switch Ports

Port #	Port name	Port VID	LAGG	Flags	State	Media	Status
0	LAN Uplink	1	-	HOST	FORWARDING	Ethernet 1000baseT <full-duplex>	Active
1	OPT	4092	-		FORWARDING	Default (no preference, typically autoselect) ▼	No Carrier
2	LAN	40			FORWARDING	Default (no preference, typically autoselect) ▼	No Carrier
3	WAN	4090	-		FORWARDING	Ethernet autoselect (1000baseT <full-duplex>) Default (no preference, typically autoselect) ▼	Active

Save

Note: Unlike software bridging, traffic between ports 1 and 2 will never leave the switch chip so it will perform at switching speed. You also cannot filter traffic between the two ports as pfSense will never see it, just like with any other (external) switch.

Interfaces / Switch / Ports



System Ports VLANs

Port settings updated.



SG-1100 Switch Ports

Port #	Port name	Port VID	LAGG	Flags	State	Media	Status
0	LAN Uplink	1	-	HOST	FORWARDING	Ethernet 1000baseT <full-duplex>	Active
1	OPT	4091	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier
2	LAN	4091	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier
3	WAN	4090	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier

Save

Interfaces / Switch / Ports

System Ports **VLANs**

SG-1100 Switch Ports

Port #	Port name	Port VID	LAGG	Flags	State	Media	Status
0	LAN Uplink	1	-	HOST	FORWARDING	Ethernet 1000baseT <full-duplex>	Active
1	OPT	4091	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier
2	LAN	4091	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier
3	WAN	4090	-		FORWARDING	Default (no preference, typically autoselect) ▾	No Carrier

Save

Interfaces / Switch / VLANs

System Ports **VLANs**

SG-1100 Switch 802.1Q VLANs

Enable

☒ Enable 802.1q VLAN mode

If enabled, packets with unknown VLAN tags will be dropped.

VLAN(s) table	VLAN group	VLAN tag	Members	Description	Action
	0	1	0	Default System VLAN	
	1	4090	0t,3	WAN	
	2	4091	0t,2	LAN	
	3	4092	0t,1	OPT	

Save

Add Tag

Edit

Interfaces / Switch / VLANs / Edit ?

Vlan properties

VLAN tag Enter a VLAN ID number (that is not already in use.)

Description A description may be entered here for administrative reference (not parsed).

Member(s)

<input type="text" value="0"/>	<input checked="" type="checkbox"/> tagged	Delete
<input type="text" value="1"/>	<input type="checkbox"/> tagged 1	Delete

2 Save Add member

Interfaces / Switch / VLANs ?

System Ports VLANs

SG-1100 Switch 802.1Q VLANs

Enable ☒ Enable 802.1q VLAN mode
If enabled, packets with unknown VLAN tags will be dropped.

VLAN(s) table

VLAN group	VLAN tag	Members	Description	Action
0	1	0	Default System VLAN	
1	4090	0t,3	WAN	
2	4091	0t,2	LAN	1
3	4092	0t	OPT	

Save Add Tag Edit

Interfaces / Switch / VLANs / Edit ?

Vlan properties

VLAN tag ⌵
 Enter a VLAN ID number (that is not already in use.)

Description 📄
 A description may be entered here for administrative reference (not parsed).

Member(s)

<input type="text" value="0"/>	<input checked="" type="checkbox"/> tagged	Delete
<input type="text" value="2"/>	<input type="checkbox"/> tagged	Delete
2 <input type="text" value="1"/>	3 <input type="checkbox"/> tagged	Delete

4 Save + Add member 1

Interfaces / Switch / VLANs ?

System Ports VLANs

SG-1100 Switch 802.1Q VLANs

Enable ☒ Enable 802.1q VLAN mode
 If enabled, packets with unknown VLAN tags will be dropped.

VLAN(s) table	VLAN group	VLAN tag	Members	Description	Action
	0	1	0	Default System VLAN	
	1	4090	0t,3	WAN	
	2	4091	0t,1,2	LAN	
	3	4092	0t	OPT	


Save + Add Tag

Interfaces / Switch / Ports ?

System Ports VLANs

SG-1100 Switch Ports

Port #	Port name	Port VID	LAGG	Flags	State	Media	Status
0	LAN Uplink	1	-	HOST	FORWARDING	Ethernet 1000baseT <full-duplex>	Active
1	OPT	4091	-		FORWARDING	Default (no preference, typically autoselect) ▼	No Carrier
2	LAN	4091	-		FORWARDING	Default (no preference, typically autoselect) ▼	No Carrier
3	WAN	4090	-		FORWARDING	Ethernet autoselect (1000baseT <full-duplex>) Default (no preference, typically autoselect) ▼	Active

 Save

ADDITIONAL RESOURCES

11.1 Netgate Training

Netgate training offers training courses for increasing your knowledge of pfSense® products and services. Whether you need to maintain or improve the security skills of your staff or offer highly specialized support and improve your customer satisfaction; Netgate training has got you covered.

<https://www.netgate.com/training>

11.2 Resource Library

To learn more about how to use your pfSense appliance and for other helpful resources, make sure to browse our Resource Library.

<https://www.netgate.com/resources>

11.3 Professional Services

Support does not cover more complex tasks such as CARP configuration for redundancy on multiple firewalls or circuits, network design, and conversion from other firewalls to pfSense®. These items are offered as professional services and can be purchased and scheduled accordingly.

<https://www.netgate.com/our-services/professional-services.html>

11.4 Community Options

If you elected not to get a [paid support plan](#), you can find help from the active and knowledgeable pfSense community on our forums.

<https://forum.netgate.com/>

WARRANTY AND SUPPORT

- One year manufacturer's warranty (optional 2nd year warranty available at time of purchase only).
- Please contact Netgate for warranty information or view our [Product Lifecycle](#) page.
- All Specifications subject to change without notice

For support information, view our [support plans](#).

See also:

For more information on how to use pfSense® software, see the [pfSense Documentation](#) and [Resource Library](#).