Hardware Installation Guide

Product Model: DMS-3130 Series
Layer 3 Stackable Managed Switch
Release 1.00

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A 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 commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his expense.

CE Mark Warning

This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

VCCI Warning

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。VCCI-A.

BSMI Notice

此為甲類資訊技術設備,於居住環境中使用時,可能會造成射頻擾動,在此種情況下,使用者會被要求採取某些適當的對策。

Safety Compliance

Warning: Class 1 Laser Product:
Product shall be used with Class 1 laser device modules certified by CDRH.
Le produit peut être utilisé avec des modules de dispositifs laser de classe 1 certifiés par le CDRH.

- **EN:** When using a fiber optic media expansion module, never look at the transmit laser while it is powered on. Also, never look directly at the fiber TX port and fiber cable ends when they are powered on.

- **FR:** Ne regardez jamais le laser tant qu'il est sous tension. Ne regardez jamais directement le port TX (Tramsmission) à fibres optiques et les embouts de câbles à fibres optiques tant qu'ils sont sous tension.

SFP (Mini-GBIC), XENPAK, and XFP Regulatory Compliance

Networks pluggable optical modules should meet the following regulatory requirements:

- Class 1.

- IEC/EN60825-1:2007 2nd Edition or later, European Standard

- FCC 21 CFR Chapter 1, Subchapter J in accordance with FDA and CDRH requirements.

- Application of CE Mark in accordance with 2004/108/EEC EMC Directive and the 2006/95/EC Low Voltage Directives.

- UL and/or CSA registered component for North America.

- 47 CFR Part 15, Class A when installed into products.

Warning

Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.

Avertissement

Équipement de classe I. Ce matériel doit être relié à la terre. La fiche d'alimentation doit être raccordée à une prise de terre correctement câblée. Une prise de courant mal câblée pourrait induire des tensions dangereuses sur des parties métalliques accessibles.

The machine can only be used in a restricted access location and has installation instructions by a skilled person.

Les matériels sont destinés à être installés dans des EMPLACEMENTS À ACCÈS RESTREINT.

Product shall be used with Class 1 laser device modules certified by CDRH.

Le produit peut être utilisé avec des modules de dispositifs laser de classe 1 certifiés par le CDRH.

62368-1 Clause equipment for installation:

"Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75."

Équipement conforme à la clause 62368-1 pour l'installation :

« Convient pour une installation dans les salles informatiques conformément à l'article 645 du National Electrical Code et à la norme NFPA 75 ».

The device can only be used in a fixed location such as a lab or a machine room. When you install the device, ensure that the protective earthing connection of the socket-outlet is verified by a skilled person.

Lithium battery Caution:

There is a danger of explosion if the battery is incorrectly replaced.

Replace only with same or equivalent type of battery.

Dispose of the batteries according to the instructions of the manufacturer.

PoE Load Condition:

- For AC or DC input: 30W/60W per each PoE port, total: 740W (960W when two PSU are connected) maximum (for DMS-3130-30PS)

To reduce potential safety issues, only the AC adapter purchased as an accessory from "D-Link", or "agency" should be used with the product for further information.

Pour réduire les problèmes de sécurité potentiels, seul l'adaptateur secteur acheté comme accessoire chez « D-Link », ou « agency », doit être utilisé avec le produit pour plus d'informations.

Intended Readers

The DMS-3130 Series Layer 3 Stackable Managed Switch Hardware Installation Guide contains detailed information about the hardware specifications of the switches in this series. It also contains brief information on how to configure and manage a switch in this series. This manual is intended for advanced level users that are familiar with network management concepts and terminology. For all practical reasons, all the switches in this series will simply be referred to as the Switch throughout this manual.

Typographical Conventions

Convention	Description
Boldface Font	This convention is used to place emphasis on keywords. It also indicates a button, toolbar icon, menu, menu item, system message, or a prompt appearing on the screen. For example, click the **Apply** button.
Initial capital letter	This convention is used to indicate a window name or keyboard key. For example, press the Enter key.

Convention	Description
`Blue Courier Font`	This convention is used to represent a Command Line Interface (CLI) example.

Notes and Cautions

NOTE: A note indicates important information that helps you make better use of your device.

CAUTION: A caution indicates a potential for property damage, personal injury, or death.

Safety/Sécurité

Safety Instructions

Please pay careful attention to the following safety guidelines to ensure your own personal safety and to help protect your system from potential damage.

Safety Cautions

To greatly reduce the risk of physical injury, electrical shock, fire, and damage to equipment, observe the following precautions.

Observe and follow service markings.

- Do not attempt to service any product, except when it is explained in the system's documentation.
- Opening or removing covers, marked with a high voltage sign, may expose the user to electrical shock.
- Only a trained service technician should service components inside these compartments.

If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:

- Damage to the power cable, extension cable, or plug.
- An object has fallen into the product.
- The product has been exposed to water.
- The product has been dropped or damaged.
- The product does not operate correctly when the operating instructions are correctly followed.

General safety cautions:

- Keep the system away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on system components, and never operate the product in a wet environment. If the system gets wet contact your trained service provider.
- Do not push any objects into the openings of the system. Doing so can cause fire or electric shock by shorting out interior components.
- Only use this product with approved equipment.
- Allow the product to cool before removing the cover or touching internal components.
- Operate the product only from the type of external power source indicated on the electrical ratings label. If unsure of the type of power source required, consult your service provider or local power company.
- Be sure that attached devices are electrically rated to operate with the power available in your location.

- Use only approved power cable(s). If you have not been provided with a power cable for your system or for any AC-powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If using an extension cable is necessary, use a 3-wire cable with properly grounded plugs.
- Observe the extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect the system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully. Route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local or national wiring rules.

When connecting or disconnecting power to and from hot-pluggable power supplies, observe the following guidelines:

- Install the power supply before connecting the power cable to the power supply.
- Unplug the power cable before removing the power supply.
- If the system has multiple sources of power, disconnect power from the system by unplugging all power cables from the power supplies.
- Move products with care and ensure that all casters and stabilizers are firmly connected to the system. Avoid sudden stops and uneven surfaces.
- This equipment is only to be connected to PoE networks without routing to outside plants.

To help avoid damage to the system, be sure that the voltage selection switch, on the power supply, is set to match the power available at the Switch's location:

- 115V/60Hz is used mostly in North and South America as well as Far Eastern countries like as South Korea and Taiwan
- 100V/50Hz is used mostly in Eastern Japan and 100V/60Hz in Western Japan
- 230V/50Hz is used mostly in Europe, the Middle East, Africa and the Far East

CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées selon les instructions.

警告：如果更換不正確之電池型式會有爆炸的風險。請依製造商說明書處理用過之電池。

CAUTION: Shock hazard

This product is intended to be use with a UL Listed Optical Transceiver product, Rated DC3.3V, Laser Class I.

ATTENTION: Risque d'électrocution

Ce produit est destiné à être utilisé avec un produit émetteur-récepteur optique répertorié UL, évalué DC3.3V, classe laser I.

Consignes de sécurité

Veuillez prêter une attention particulière aux consignes de sécurité suivantes pour assurer votre sécurité personnelle et protéger votre système des dommages potentiels.

Précautions de sécurité

Pour réduire considérablement les risques de blessure physique, de choc électrique, d'incendie et de détérioration du matériel, observez les précautions suivantes.

Observez et respectez les marquages relatifs à l'entretien et/ou aux réparations.

- N'essayez pas de réparer un produit, sauf si cela est expliqué dans la documentation du système.
- L'ouverture ou le retrait des capots, signalés par un symbole de haute tension, peut exposer l'utilisateur à un choc électrique.
- Seul un technicien de maintenance qualifié est habilité à réparer les composants à l'intérieur de ces compartiments.

Si l'un des cas suivants se produit, débranchez l'appareil du secteur et remplacez la pièce concernée ou contactez votre prestataire de services agréé.

- Endommagement du câble d'alimentation, du câble de rallonge ou de la fiche.
- Un objet est tombé dans le produit.
- Le produit a été exposé à l'eau.
- Le produit est tombé ou a été endommagé.
- Le produit ne fonctionne pas correctement lorsque les instructions d'utilisation sont correctement suivies.

Précautions générales de sécurité :

- Danger électrique : Seul le personnel qualifié doit effectuer les procédures d'installation.
- Avant de procéder à l'entretien, débranchez tous les cordons d'alimentation pour mettre le périphérique hors tension.
- Eloignez le système des radiateurs et des sources de chaleur. Par ailleurs, n'obturez pas les fentes d'aération.
- Ne versez pas de liquide sur les composants du système et n'introduisez pas de nourriture à l'intérieur. Ne faites jamais fonctionner l'appareil dans un environnement humide. Si le système est mouillé, contactez votre prestataire de services qualifié.
- N'insérez aucun objet dans les fentes de l'appareil. Vous risqueriez de provoquer un incendie ou un choc electrique en court-circuitant les composants internes.
- Utilisez ce produit uniquement avec un équipement approuvé.
- Laissez l'appareil refroidir avant de déposer le capot ou de toucher les composants internes.
- Faites fonctionner le produit uniquement avec la source d'alimentation indiquée sur l'étiquette signalétique où figurent les caractéristiques électriques nominales. Si vous ne savez pas avec certitude quel type de source d'alimentation est requis, consultez votre prestataire de services ou votre compagnie d'électricité.
- Assurez-vous que les caractéristiques nominales des appareils branchés correspondant à la tension du réseau électrique.
- Utilisez uniquement des câbles d'alimentation homologués. Si un câble d'alimentation n'est pas fourni pour le système ou pour un composant/accessoire alimenté par CA destiné au système, procurez-vous un câble d'alimentation homologué pour une utilisation dans votre pays. Le câble d'alimentation doit être adapté à l'appareil et ses caractéristiques nominales doivent correspondre à celles figurant sur l'étiquette du produit. La tension et le courant nominaux du câble doivent être supérieurs aux valeurs nominales indiquées sur l'appareil.
- Pour éviter tout risque de choc électrique, branchez les câbles d'alimentation du système et des périphériques à des prises électriques correctement mises à la masse. Ces câbles sont équipés de fiches à trois broches pour garantir une mise à la masse appropriée. N'utilisez pas d'adaptateur de prise, et n'éliminez pas la broche de mise à la masse du câble. Si un câble de rallonge est nécessaire, utilisez un câble à 3 fils avec des fiches correctement mises à la terre.
- Respectez les caractéristiques nominales de la rallonge ou du bloc multiprise. Assurez-vous que l'intensité nominale totale de tous les produits branchés à la rallonge ou au bloc multiprise ne dépasse pas 80 % de l'intensité nominale limite de la rallonge ou du bloc multiprise.
- Pour protéger le système contre les pics et les chutes de tension transitoires et soudains, utilisez un parasurtenseur, un filtre de secteur ou une alimentation sans interruption (ASI).
- Positionnez les câbles système et les câbles d'alimentation avec soin. Acheminez les câbles de manière à ce qu'ils ne puissent pas être piétinés ou trébuchés. Veillez à ce que rien ne repose sur les câbles.
- Ne modifiez pas les câbles ou les fiches d'alimentation. Contactez un électricien qualifié ou la compagnie d'électricité si des modifications sur site sont nécessaires. Respectez toujours la règlementation locale ou nationale en matière de câblage.

Lors de la connexion ou de la déconnexion de l'alimentation vers et depuis des blocs d'alimentation enfichables à

chaud, respectez les consignes suivantes :

- Installez l'alimentation avant d'y brancher le câble d'alimentation.
- Débranchez le câble d'alimentation avant de couper l'alimentation.
- Si le système possède plusieurs sources d'alimentation, mettez-le hors tension en débranchant tous les câbles d'alimentation des prises.
- Déplacez les appareils avec précaution et assurez-vous que les roulettes et/ou que les pieds stabilisateurs sont bien fixés au système. Évitez les arrêts brusques et les surfaces inégales.

Pour éviter d'endommager le système, assurez-vous que le commutateur de sélection de tension de l'alimentation est réglé sur l'alimentation disponible à l'emplacement du commutateur :

- 115 V/60 Hz est principalement utilisé en Amérique du Nord et du Sud, ainsi que dans des pays d'Extrême-Orient tels que la Corée du Sud et Taïwan.
- 100 V/50 Hz est utilisé principalement dans l'est du Japon et 100 V/ 60 Hz dans l'ouest du Japon.
- 230 V/50 Hz est principalement utilisé en Europe, au Moyen-Orient, en Afrique et en Extrême-Orient.

General Precautions for Rack-Mountable Products

Please pay careful attention to the following precautions concerning rack stability and safety. Systems are considered to be components in a rack. Thus, a component refers to any system, as well as to various peripherals or supporting hardware:

CAUTION: Installing systems in a rack without the front and side stabilizers installed could cause the rack to tip over, potentially resulting in bodily injury under certain circumstances. Therefore, always install the stabilizers before installing components in the rack. After installing system/components in a rack, never pull more than one component out of the rack on its slide assemblies at one time. The weight of more than one extended component could cause the rack to tip over and may result in serious injury.

ATTENTION: Le montage de systèmes sur un rack dépourvu de pieds stabilisateurs avant et latéraux peut faire basculer le rack, pouvant causer des dommages corporels dans certains cas. Par conséquent, installez toujours les pieds stabilisateurs avant de monter des composants sur le rack. Après l'installation d'un système ou de composants dans un rack, ne sortez jamais plus d'un composant à la fois hors du rack sur ses glissières. Le poids de plusieurs composants sur les glissières en extension peut faire basculer le rack, pouvant causer de graves dommages corporels.

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a component from the rack.
- Use caution when pressing the component rail release latches and sliding a component into or out of a rack; the slide rails can pinch your fingers.
- After a component is inserted into the rack, carefully extend the rail into a locking position, and then slide the component into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Ensure that proper airflow is provided to components in the rack.
- Do not step on or stand on any component when servicing other components in a rack.

CAUTION: Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if uncertain that suitable grounding is available.

ATTENTION: Ne neutralisez jamais le conducteur de masse et ne faites jamais fonctionner le matériel en l'absence de conducteur de masse dûment installé. Contactez l'organisme de contrôle en électricité approprié ou un électricien qualifié si vous n'êtes pas sûr qu'un système de mise à la masse adéquat soit disponible.

CAUTION: The system chassis must be positively grounded to the rack cabinet frame. Do not attempt to connect power to the system until grounding cables are connected. Completed power and safety ground wiring must be inspected by a qualified electrical inspector. An energy hazard will exist if the safety ground cable is omitted or disconnected.

ATTENTION: La carcasse du système doit être positivement reliée à la masse du cadre du rack. N'essayez pas de mettre le système sous tension si les câbles de mise à la masse ne sont pas raccordés. Le câblage de l'alimentation et de la mise à la masse de sécurité doit être inspecté par un inspecteur qualifié en électricité. Un risque électrique existe si le câble de mise à la masse de sécurité est omis ou débranché.

Protecting Against Electrostatic Discharge

Static electricity can harm delicate components inside the system. To prevent static damage, discharge static electricity from your body before touching any of the electronic components, such as the microprocessor. This can be done by periodically touching an unpainted metal surface on the chassis.

The following steps can also be taken to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until ready to install the component in the system. Just before unwrapping the antistatic packaging, be sure to discharge static electricity from your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads, workbench pads and an antistatic grounding strap.

Table of Contents

1. Introduction

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Switch Description

The D-Link DMS-3130 Series is a high-performance member of the D-Link Layer 3 switch family. Designed to connect end-users in a secure enterprise or metro Ethernet access network, the switch family has been future proof to provide high-performance switching capability with advanced fault tolerance, port density and robust security to suit your modern network environment.

The DMS-3130 Series has PoE and non-PoE models to support multi-speed Gigabit Ethernet and SFP network connection options. The PoE model supports Perpetual POE which continues to supply power to connected devices even during system booting process and it can be automatically disabled when power consumption exceeds the limit. They provide an affordable solution for administrators to respond to the demand for high-speed Gigabit connections ranging from 2.5BASE-T to 10GBASE-T to 25G fiber connectivity, which also makes the DMS-3130 Series suitable as an access solution for large enterprises. The comprehensive security functions including advanced ACL and Storm Control and IP-MAC-Port Binding (IMPB) with DHCP Snooping on the Switch to extend the network security coverage from access to edge. The advanced robust features such as redundant power supply and 6 kV surge protection increase overall reliability, serviceability, and availability.

This series of switches has 10 Gbps RJ45 ports and 25 Gbps SFP28 ports. The Small Form-factor Portable Pluggable 28 (SFP28 or optional SFP+) ports are used with fiber-optical transceiver cabling to uplink various other networking devices for a 10 or 25 gigabit link that may span great distances. Furthermore, the SFP28 ports may be used to physically stack the Switch with other switches in this series.

The D-Link DMS-3130 Series includes the following switches:
- **DMS-3130-30TS** supports twenty-four 2.5 Gigabit RJ45 ports (100 Megabit/1 Gigabit/2.5 Gigabit), two 10 Gigabit RJ45 ports (100 Megabit/1 Gigabit/2.5 Gigabit/5 Gigabit/10 Gigabit), and four SFP28 ports (10/25 Gigabit).
- **DMS-3130-30PS** supports sixteen 2.5 Gigabit PoE RJ45 ports (100 Megabit/1 Gigabit/2.5 Gigabit), eight 5 Gigabit PoE RJ45 ports (100 Megabit/1 Gigabit/2.5 Gigabit/5 Gigabit), two 10 Gigabit RJ45 ports (100 Megabit/1 Gigabit/2.5 Gigabit/5 Gigabit/10 Gigabit), and four SFP28 ports (10/25 Gigabit).

Package Contents

Open the shipping carton of the Switch and carefully unpack its contents. The carton should contain the following items:
- One DMS-3130 Series switch.
- One Quick Installation Guide.
- One AC power cord.
- One console cable (RJ45 to RS-232).
- One rack mounting kit (two brackets and screws for DMS-3130-30TS and four brackets and screws for DMS-3130-30PS).
- Four rubber feet with adhesive backing (only available for DMS-3130-30TS).
- One power cord retainer set (only available for DMS-3130-30TS).

If any item is missing or damaged, please contact your local D-Link reseller for replacement.

Features

This switch is packed with an abundance of networking features that span inside and outside of the traditional Layer 3 framework. The list below highlights the significant protocols and features supported by this switch.

Features that can be found on this switch are:

- Virtual Stacking. D-Link Single IP Management (SIM)
- Physical Stacking, using the 10GBase-T and/or SFP28 (SFP+) ports with 80G or 200G (full-duplex) in Chain or Ring topology
- Jumbo Frames (9K Bytes)
- Spanning Tree Protocol (STP, RSTP, and MSTP)
- Ethernet Ring Protection Switching (ERPS)
- Link Aggregation
- Mirroring (Port Mirroring, VLAN Mirroring, Flow-based (ACL) Mirroring, and RSPAN)
- Loopback Detection (LBD)
- L2 Protocol Tunneling
- IGMP Snooping (Version 1, 2, and 3)
- MLD Snooping (Version 1 and 2)
- 802.1Q VLAN, Port-based VLAN, 802.1v Protocol-based VLAN , MAC-based VLAN, Voice VLAN, Surveillance VLAN, Private VLAN, Asymmetric VLAN, VLAN Trunking, and GVRP
- Double VLAN (Q-in-Q), Selective Q-in-Q, and VLAN Translation
- ISM VLAN (Multicast VLAN)
- Gratuitous ARP
- ARP Proxy
- IPv6 Neighbor Discovery (ND)
- Virtual Router Redundancy Protocol (VRRPv2/VRRPv3[1])
- Equal-Cost Multi-Path Route (ECMP)
- Policy-based Route (PBR)
- Route Preference Setting
- Route Redistribution
- Routing Information Protocol (RIPv1/RIPv2), and RIPng
- Class of Service (CoS)
- Two-rate Three-color Marker (trTCM)
- Policy Map (Remark 802.1p priority, Remark ToS/DSCP, Rate Limiting, and Time-based QoS)
- Queue Handling: Strict Priority Queue (SPQ), Weighted Round Robin (WRR), and Weight Deficit Round Robin (WDRR)
- Congestion Control: Weighted Random Early Detection (WRED), Simple Random Early Detection (SRED), Port-based Bandwidth Control, Flow-based bandwidth Control, and Queue-based Bandwidth Control
- Access Control List (ACL): IP Access List, IPv6 Access List, Time-based ACL, and CPU Interface Filtering
- Secure Shell (SSHv2) IPv4/IPv6
- Secure Sockets Layer for IPv4/IPv6
- Port Security
- Broadcast, Multicast, and Unicast Storm Control
- Traffic Segmentation
- IP-MAC-Port Binding (IMPB)
- IP Source Guard (IPv4/IPv6)
- DHCP Snooping
- IPv6 Snooping
- Dynamic ARP Inspection (DAI)
- DHCPv6 Guard
- IPv6 Route Advertisement (RA) Guard
- IPv6 ND Inspection
- D-Link Safeguard Engine
- Layer 3 Control Packet Filtering
- NetBIOS/NetBEUI Filtering
- DHCP Server Screening (IPv4/IPv6)
- DHCP Client Filtering
- ARP Spoofing Prevention
- BPDU Attack Protection
- DoS Attack Prevention
- Authentication, Authorization, and Accounting (AAA)
- RADIUS/TACACS+ Accounting (IPv4/IPv6)
- 802.1X Network Access Control
- Web-based Access Control (WAC)
- MAC-based Access Control (MAC)
- Compound Authentication
- Guest VLAN
- Microsoft® NAP Support (IPv4/IPv6)
- Cable Diagnostics
- 802.3ah Ethernet Link OAM
- 802.1ag Connectivity Fault Management (CFM)
- Y.1731 OAM
- Optical Transceiver Digital Diagnostic Monitoring (DDM)
- D-Link Unidirectional Link Detection (DULD)

- Network Time Protocol (NTP) IPv4/IPv6
- Simple Network Time Protocol (SNTP) IPv4/IPv6
- Link Layer Discovery Protocol (LLDP), and LLDP-MED
- User Account Privilege for Management Access
- Command Line Interface (CLI)
- Simple Network Management Protocol (SNMPv1/SNMPv2c/SNMPv3) IPv4/IPv6
- Remote Network Monitoring (RMONv1/RMONv2)
- SNMP Trap
- Web User Interface (Web UI)
- D-Link Discover Protocol (DDP)
- DHCP Server and Client, and DHCP Auto-configuration (IPv4/IPv6)
- DHCP Relay (IPv4/IPv6)
- Telnet Server and Client
- TFTP Client (IPv4/IPv6)
- Secured FTP (SFTP) Server (IPv4/IPv6)
- System Log and Command Logging
- SMTP (IPv4/IPv6)
- Multiple Image and Configuration, and Flash File System (FFS)
- Password Recovery and Encryption
- Debug Command
- CPU and Port Utilization Monitoring, and Packets Counter
- Trap and Log Severity Control
- Traceroute and Ping (IPv4/IPv6)
- Microsoft® Network Load Balancing (NLB)
- sFlow (IPv4/IPv6)

2. Hardware Components

This chapter describes the front, rear, and side panel components of all switches in the series.

> *DMS-3130-30TS Switch*
> *DMS-3130-30PS Switch*

DMS-3130-30TS Switch

Front Panel Components

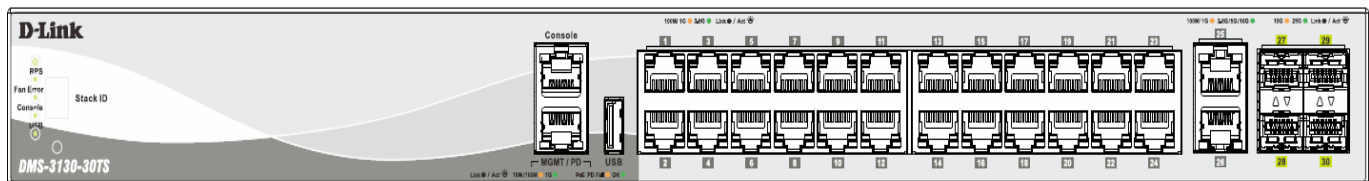The front panel of DMS-3130-30TS features a variety of LED indicators and ports.

Figure 2-1 Front panel view of the DMS-3130-30TS

Ports that can be found on the front panel of this switch are listed in the table below.

Port	Description
USB	Inserting a flash drive into the USB 2.0 Type-A port provides an additional storage space for portable firmware images and configuration files that can be copied to and from the NVRAM of the Switch.
MGMT	The RJ45 Management (MGMT) port is an IP-based, Out-Of-Band (OOB) port for Telnet, web, or SNMP management that operates at 10/100/1000 Mbps wire-speed. This port can be used to configure the Switch without being connected to the network. The MGMT port can also be used to supply the Switch with 90W DC power using Power over Ethernet (PoE). This can be used as the main power source or as the secondary power source to the Switch.
Console (RJ45)	The RJ45 console port can be used to connect to the Command Line Interface (CLI) of the Switch for configuration, management, and monitoring. This port uses a special console cable (included in this package) with a RJ45-to-Serial interface to connect the Switch and the serial port (COM) of the PC.
2.5GBASE-T RJ45 Ports	The Switch is equipped with 24 RJ45 Ethernet ports. These ports can operate at 100 Mbps, 1 Gbps, or 2.5 Gbps wire-speed.
10GBASE-T RJ45 Ports	The Switch is equipped with 2 RJ45 Ethernet ports. These ports can operate at 100 Mbps, 1 Gbps, 2.5 Gbps, 5 Gbps, or 10 Gbps wire-speed.
25 Gigabit SFP28 Ports	The Switch is equipped with 4 SFP28 (or optional SFP+) ports. These ports can operate at 10 Gbps or 25 Gbps wire-speed and support a wide collection of SFP+ or SFP28 transceivers.

For a complete list of SFP transceivers that are compatible with this switch, refer to the **Port Functions** sections in **Appendix A - Technical Specifications**.

LED Indicators

Located on the front panel of this switch are LED indicators: Power, Console, RPS, Fan Err, USB, Link/Act indicators for all the ports, and Stack ID.
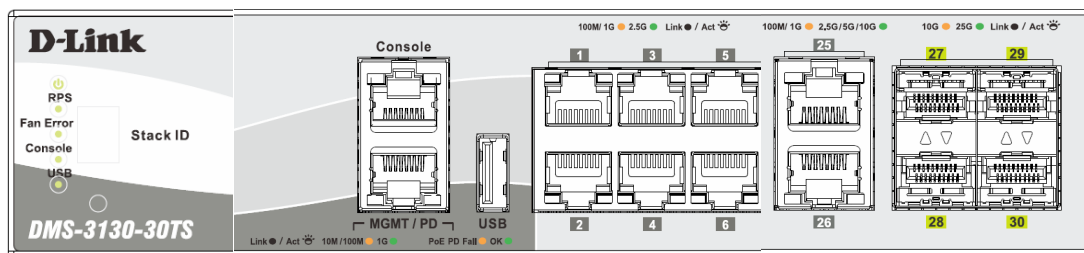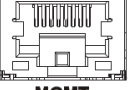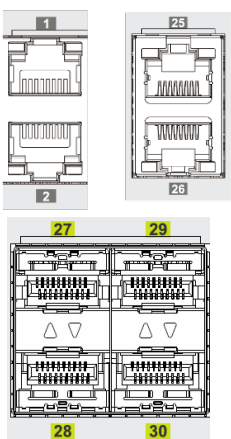
Figure 2-2 LED indicators for the DMS-3130-30TS

LED	Description
⏻	This LED will light solid green after the Switch has been powered on successfully. This LED will be off when the Switch is no longer receiving power (i.e. powered off).
Console	This LED will light solid green when the console port is active. This LED will be off when the console port is not active.
MGMT	The Left LED indicates the status of MGMT port. This LED will light solid green (1000 Mbps) or amber (10/100Mbps) after a link to the MGMT port was successfully established. This LED will blink when activity on this port is taking place. This LED will be off when MGMT port is not active. The Right LED indicates the status of receiving power from a PSE. The LED will light solid green when it is receiving power from a PSE. The LED will light solid amber when power supply is in an error state. The LED is off when there is no PSE connected to the port.
RPS	This LED will light green when the Redundant Powers Supply is in use. This LED will be off when the RPS is not in use.
Fan Error	This LED will light solid red when the fan fails. This LED will be off when the fan is operating normally.
USB	This LED will light solid green if a USB flash drive is plugged in. This LED will blink green when the Switch is reading or writing data to and from the USB drive. This LED will be off when no USB drive is plugged into the USB port.
Link/Act/Speed LEDs	The Switch has LED indicators for Link and Activity. **2.5G RJ45 Ports (No.1~24):** The LED at the left side indicates the Link/Act/Speed status of 2.5G RJ45 ports. This LED will light solid green when there is a connection (or link) to a 2.5 Gbps Ethernet device or solid amber when there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the RJ45 ports. The LED will blink green when a 2.5 Gbps port is active or blink amber when a 100/1000 Mbps port is active. The LED will be off when there is no link or activity. The LED at the right side has no LED notification. **10G RJ45 Ports (No. 25~26):** The left LED will light solid green when there is a connection (or link) to a 2.5/5/10 Gbps Ethernet device; the right LED will light solid amber when there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the RJ45 ports. The left LED will blink green when a 2.5/5/10 Gbps port is active; the right LED will blink amber when a 100/1000 Mbps port is active. The LED will be off when there is no link or activity. **SFP28 Ports (No. 27~30):** The triangle LED indicates the Link/Act/Speed status of 25G SFP28 ports. This LED will light solid green when there is a connection (or link) to a 25 Gbps Ethernet device or solid amber when there is a connection (or link) to a 10 Gbps Ethernet device on any of the SFP28 ports. The LED will blink

LED	Description
	green when a 25 Gbps port is active or blink amber when a 10 Gbps port is active. The LED will be off when there is no link or activity.
Stack ID	This 7-segment LED can display numbers from 1 to 9 and the following letters H, h, E, and G. The stacking ID (1 to 9) can be assigned manually by the user or automatically by the system.
	The letter '**H**' will be displayed if this switch is the **master switch** in the stack.
	The letter '**h**' will be displayed if this switch is the **backup master switch** in the stack.
	The letter '**E**' will be displayed if there was an error in the system's self-test.
	The letter '**G**' will be displayed when the **Safeguard** engine entered the **exhausted mode**.

Please refer to the "**LED Indicators**" section in the **Appendix A** - Technical Specifications for more LED information.

Rear Panel Components

The rear panel of this switch features a security lock, a GND, an AC power connector, a power cord retainer hole, and an outlet for an external redundant power supply.
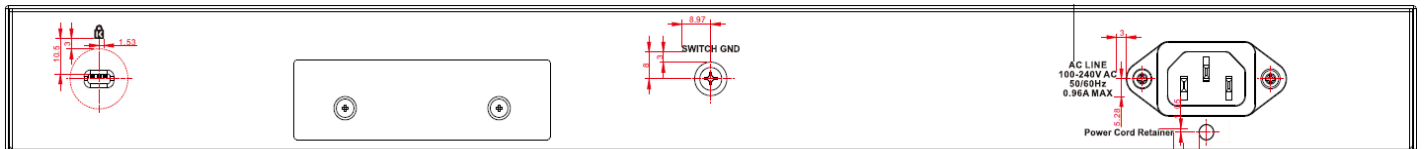

Figure 2-3 Rear panel view of the DMS-3130-30TS

Components that can be found on the rear panel of this switch are listed in the table below.

Component	Description
Security Lock	Provide a Kensington-compatible security lock to be able to connect to a secure immovable device. Insert the lock into the notch and turn the key to secure the lock. The lock-and-cable apparatus should be purchased separately.
Switch GND	Use an electrical grounding wire and connect one end of the wire to the Switch GND and the other end of the wire to an electrical grounding point most commonly found on the Switch mounting rack itself.
AC Power Connector	The AC power cord with a three-pronged AC power connector can be plugged into this receptacle to supply the Switch with 100-240 VAC power at 50-60 Hz.
Power Cord Retainer Hole	The power cord retainer hole is used to insert the power cord retainer to secure the AC power cord.
Redundant Power Supply	An optional external RPS can be plugged into the RPS port found on the rear panel. When the internal power fails, this optional external RPS will supply power to the Switch immediately and automatically. The metal cover plate should be mounted if there's no RPS be plugged.

Side Panel Components

The side panels of this switch contain heat vents, fans, and rack-mounting screw holes. The heat vents are used to dissipate internal heat and facilitate internal air circulation. Do not block these openings. Leave at least 4 inches of space at the sides of the Switch for proper ventilation. Without proper heat dissipation and air circulation, system components might overheat which could lead to system failure or even severely damaged components.
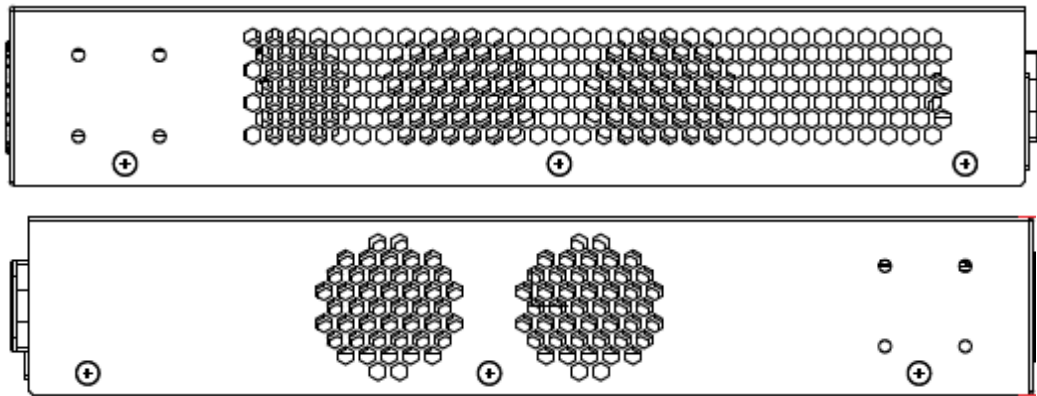
Figure 2-4 Side panels of the DMS-3130-30TS

DMS-3130-30PS Switch

Front Panel Components

The front panel of DMS-3130-30PS features a variety of LED indicators and ports.
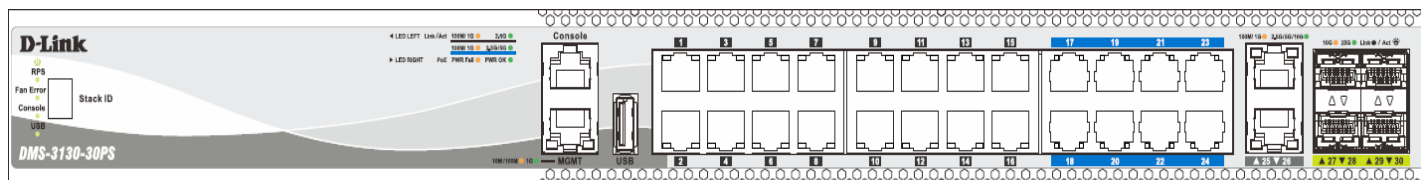

Figure 2-5 Front panel view of the DMS-3130-30PS

Ports that can be found on the front panel of this switch are listed in the table below.

Port	Description
USB	Inserting a flash drive into the USB 2.0 Type-A port provides an additional storage space for portable firmware images and configuration files that can be copied to and from the NVRAM of the Switch.
MGMT	The RJ45 Management (MGMT) port is an IP-based, Out-Of-Band (OOB) port for Telnet, web, or SNMP management that operates at 10/100/1000 Mbps wire-speed. This port can be used to configure the Switch without being connected to the network.
Console (RJ45)	The RJ45 console port can be used to connect to the Command Line Interface (CLI) of the Switch for configuration, management, and monitoring. This port uses a special console cable (included in this package) with a RJ45-to-Serial interface to connect the Switch and the serial port (COM) of a PC.
2.5GBASE-T RJ45 PoE Ports	The Switch is equipped with 16 RJ45 Ethernet ports. These ports can operate at 100 Mbps, 1 Gbps, or 2.5 Gbps wire-speed. These PoE ports are compliant to IEEE802.3af and IEEE802.3at.
5GBASE-T RJ45 PoE Ports	The Switch is equipped with 8 RJ45 Ethernet ports. These ports can operate at 100 Mbps, 1 Gbps, 2.5 Gbps, or 5 Gbps wire-speed. These PoE ports are compliant to IEEE802.3af, IEEE802.3at, and IEEE802.3bt.
10GBASE-T RJ45 Ports	The Switch is equipped with 2 RJ45 Ethernet ports. These ports can operate at 100 Mbps, 1 Gbps, 2.5 Gbps, 5 Gbps, or 10 Gbps wire-speed.
25 Gigabit SFP28 Ports	The Switch is equipped with 4 SFP28 (or optional SFP+) ports. These ports can operate at 10 Gbps or 25 Gbps wire-speeds and support a wide collection of SFP+ or SFP28 transceivers.

For a complete list of SFP transceivers that are compatible with this switch, refer to **Port Functions** in **Appendix A - Technical Specifications**.

LED Indicators

Located on the front panel of this switch are LED indicators: Power, Console, RPS, Fan Err, USB, Link/Act indicators for all the ports, and Stack ID.
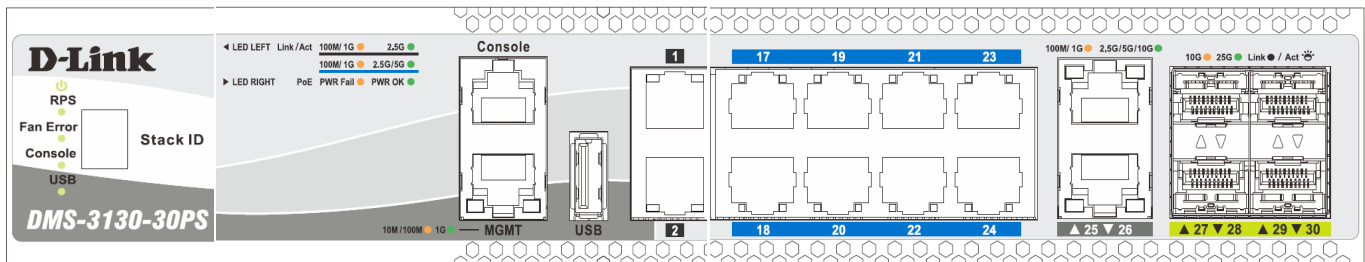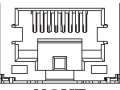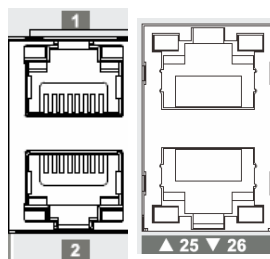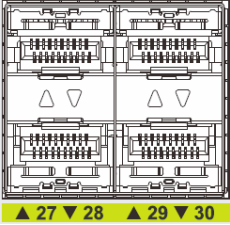

Figure 2-6 LED indicators for the DMS-3130-30PS

LED	Description
Power	This LED will light solid green after the Switch has been powered on successfully.
	This LED will be off when the Switch is no longer receiving power (i.e. powered off).
Console	This LED will light solid green when the console port is active.
	This LED will be off when the console port is not active.
MGMT	The LED at the left side indicates the status of MGMT port.
	This LED will light solid green (1000 Mbps) or amber (10/100Mbps) after a link to the MGMT port was successfully established.
	This LED will blink when activity on this port is taking place.
	This LED will be off when MGMT port is not active.
	The LED at the right side has no LED notification.
RPS	This LED will light green when the Redundant Powers Supply is in use.
	This LED will be off when the RPS is not in use.
Fan Error	This LED will light solid red when the fan fails.
	This LED will be off when the fan is operating normally.
USB	This LED will light solid green if a USB flash drive is plugged in.
	This LED will blink green when the Switch is reading or writing data to and from the USB drive.
	This LED will be off when no USB drive is plugged into the USB port.
Link/Act/Speed LEDs & PoE LEDs	The Switch has LED indicators for Link and Activity.
	2.5G RJ45 Ports (No. 1~16): The left LED indicates the Link/Act/Speed status of 2.5G RJ45 ports. This LED will light solid green when there is a connection (or link) to a 2.5 Gbps Ethernet device or solid amber when there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the RJ45 ports. The LED will blink green when a 2.5 Gbps port is active or blink amber when a 100/1000 Mbps port is active. The LED will be off when there is no link or activity.
	5G RJ45 Ports (No. 17~24): The left LED indicates the Link/Act/Speed status of 5G RJ45 ports. This LED will light solid green when there is a connection (or link) to a 2.5 or 5 Gbps Ethernet device or solid amber when there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the RJ45 ports. The LED will blink green when a 2.5/5 Gbps port is

LED	Description
	active or blink amber when a 100/1000 Mbps port is active. The LED will be off when there is no link or activity. **PoE LED (No. 1~24):** The right LEDs of the above ports indicate power supply status. This LED will light solid green when there is a PoE device connected to the port and is receiving power from the port. This LED will light amber to indicate an error state in power supply. The LED is off when there is no PD connected to the port. **10G RJ45 Ports (No. 25~26):** The left LED will light solid green when there is a connection (or link) to a 2.5/5/10 Gbps Ethernet device; the right LED will light solid amber when there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the RJ45 ports. The left LED will blink green when a 2.5/5/10 Gbps port is active; the right LED will blink amber when a 100/1000 Mbps port is active. The LED will be off when there is no link or activity. **SFP28 Ports (N0. 27~30):** The triangle LED indicates the Link/Act/Speed status of 25G SFP28 ports. This LED will light solid green when there is a connection (or link) to a 25 Gbps Ethernet device or solid amber when there is a connection (or link) to a 10 Gbps Ethernet device on any of the SFP28 ports. The LED will blink green when a 25 Gbps port is active or blink amber when a 10 Gbps port is active. The LED will be off when there is no link or activity.
Stack ID	This 7-segment LED can display numbers from 1 to 9 and the following letters H, h, E, and G. The stacking ID (1 to 9) can be assigned manually by the user or automatically by the system. The letter '**H**' will be displayed if this switch is the **master switch** in the stack. The letter '**h**' will be displayed if this switch is the **backup master switch** in the stack. The letter '**E**' will be displayed if there was an error in the system's self-test. The letter '**G**' will be displayed when the **Safeguard** engine entered the **exhausted mode**.

Please refer to the "**LED Indicators**" section in the **Appendix A** - Technical Specifications for more LED information.

Rear Panel Components

The rear panel of this switch features a GND and two hot-pluggable power supplies.
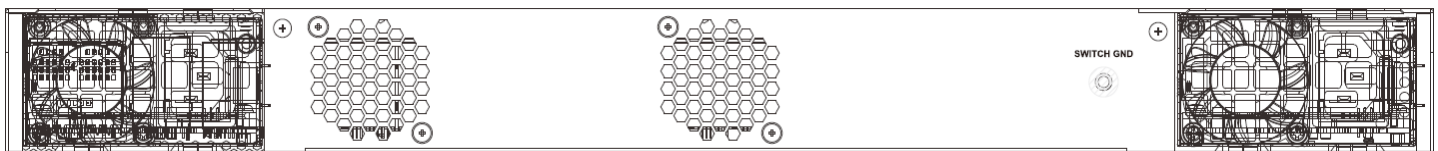

Figure 2-7 Rear panel view of the DMS-3130-30PS

Components that can be found on the rear panel of this switch are listed in the table below.

Component	Description
Switch GND	Use an electrical grounding wire and connect one end of the wire to the Switch GND and the other end of the wire to an electrical grounding point most commonly found on the Switch mounting rack itself.
Redundant Power Supply	A hot-pluggable RPS can be plugged into the RPS port found on the rear panel of the Switch. When one of the two RPS units fails, the other one will supply power to the Switch immediately and automatically.
RPS LED	**RPS LED:** The hot-pluggable RPS carries a LED which stays green or red. When it is solid green, it shows that the power unit is working. When it is flashing green, it indicates the power is at 12Vsb. When it is solid amber, it indicates that RPS stops working due to lost power input. It can also indicate critical events such as fan failure or over-current protection. When it is flashing amber, it shows that RPS is still working but requires maintenance due to high temperature or high current or fan in slow speed.
AC Power Connector	AC Power Connector: The AC power cord with a three-pronged AC power connector can be plugged into this receptacle of the RPS to supply the Switch with 100-240 VAC power at 47-63 Hz.

Side Panel Components

The side panels of this switch contain heat vents, fans, and rack-mounting screw holes. The heat vents are used to dissipate internal heat and facilitate internal air circulation. Do not block these openings. Leave at least 4 inches of space at the sides of the Switch for proper ventilation. Without proper heat dissipation and air circulation, system components might overheat which could lead to system failure or even severely damaged components.
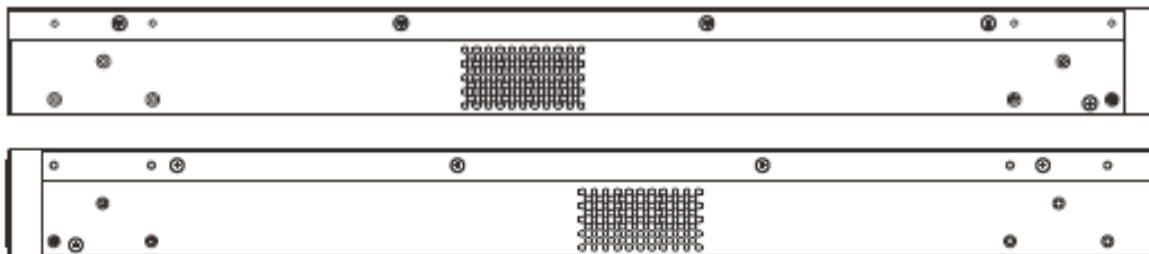

Figure 2-8 Side panels of the DMS-3130-30PS

3. Installation

Installation Guidelines
Installing the Switch without a Rack
Installing the Switch in a Standard 19" Rack
Installing Transceivers into the Transceiver Ports
Power On (AC Power)
Installing the Redundant Power Supply (RPS)
Installing the RPS into a Rack-mount Chassis

Installation Guidelines

This section will discuss the hardware installation guidelines that the user must follow in order to properly and safely install this switch into the appropriate environment.

- Visually inspect the power cord and see that it is fully secured to both the power connector, on the Switch, and the electrical outlet that supplies power.
- Install the Switch in a cool and dry place within the acceptable operating temperature and humidity ranges. For more information about the acceptable operating temperature and humidity ranges, refer to the Physical and Environmental section.
- Install the Switch in a site free from strong electromagnetic field generators such as motors, vibration, dust, and direct exposure to sunlight.

Installing the Switch without a Rack

This section is used to guide the user through installing the Switch in an area other than a switch rack. Attach the included rubber feet to the bottom of the Switch. Take note that there should be marked blocks on the bottom of the Switch to indicate where to attach the rubber feet. These markings are usually found in each corner on the bottom of the device. The rubber feet cushion the Switch, protecting the casing from scratches and preventing it from scratching other surfaces.
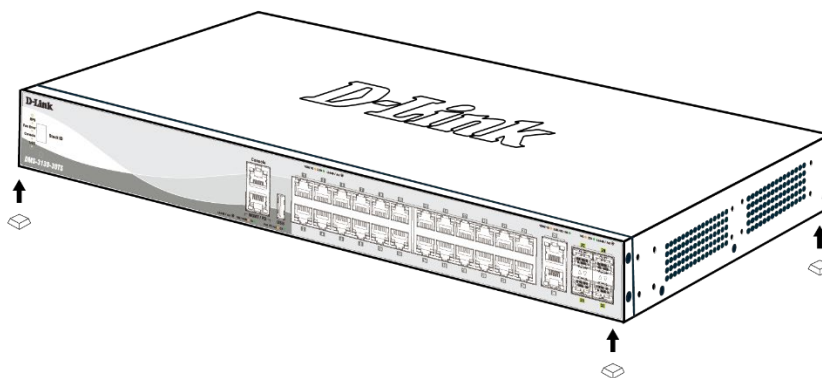
Figure 3-1 Attaching rubber feet to the Switch DMS-3130-30TS

Install the Switch on a sturdy, level surface that can support the weight of the Switch (see the **Weight** section in **Appendix A - Technical Specifications**.). Do not place any heavy objects on the Switch. The power outlet should be within 1.82 meters (6 feet) of the Switch. Make sure that there is proper heat dissipation from and adequate ventilation around the Switch. Leave at least 10 cm (4 inches) of space at the front, sides, and rear of the Switch for ventilation.

Installing the Switch in a Standard 19" Rack

This section is used to guide the user through installing the Switch into a switch rack. The Switch can be mounted in a standard 19"(1U) rack using the provided mounting brackets.

1. Fasten the mounting brackets to the sides of the Switch using the screws provided.
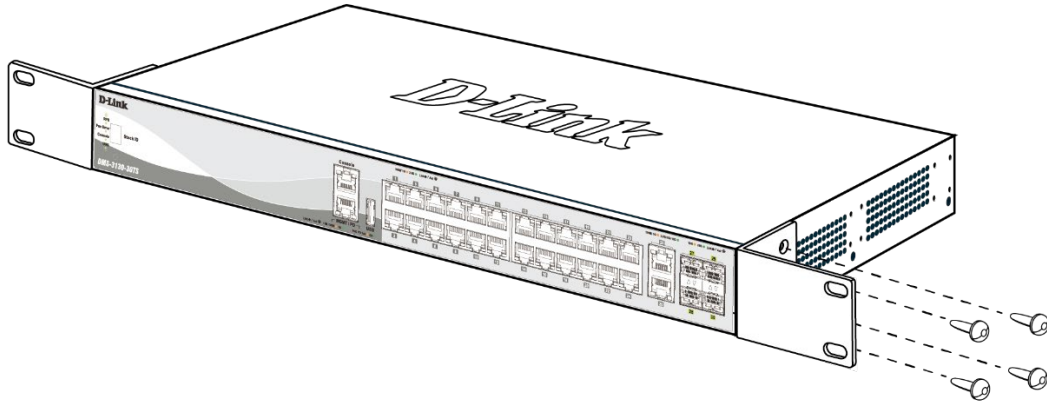
Figure 3-2 Attaching rack-mount brackets to the Switch

2. Fasten the mounting brackets in any available open space in the rack using the screws provided.
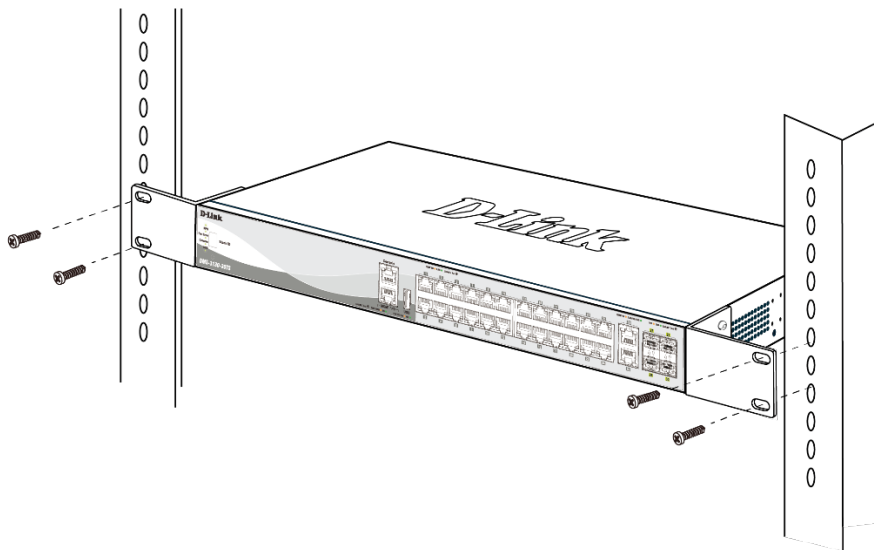
Figure 3-3 Installing the Switch in a Rack

Make sure that there is adequate space around the Switch to allow for proper air flow, ventilation, and cooling.

Installing Transceivers into the Transceiver Ports

The Switch is equipped with Small Form-factor Pluggable (SFP28/SFP+) ports that can be used to connect various other networking devices to this switch that do not support the standard RJ45 wiring connection. These ports are generally used to connect this switch to optical fiber connections and can be used to connect devices to the Switch over great distances. The maximum distance that the RJ45 wiring connection can reach is 100 meters. Fiber optic connections can span several kilometers.

The figure below illustrates how to properly insert SFP28 transceivers into the Switch's SFP28 ports.
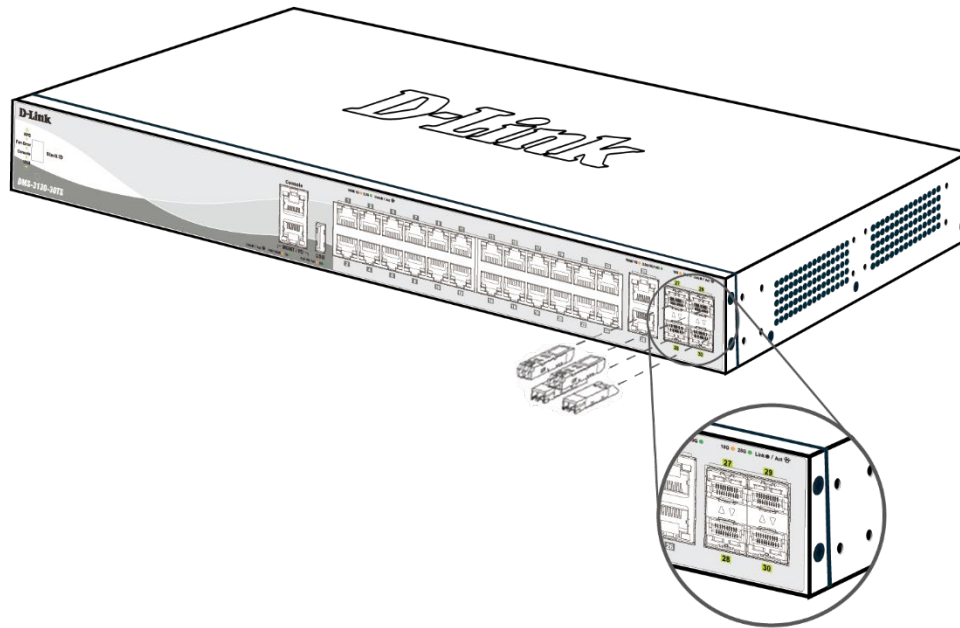
Figure 3-4 Inserting transceivers into the transceiver ports

The SFP28 ports support transceiver form factors: **SFP28** and **SFP+**. A complete list of SFP transceivers compatible with this switch, can be found in **Port Functions** in **Appendix A - Technical Specifications** at the end of this document.

Power On (AC Power)

Plug one end of the AC power cord into the power socket of the Switch and the other end into the local power source outlet. After the system is powered on, the power LED will light up green to indicate that the system has been powered up.

Power Failure (AC Power)

In the event of a power failure, just as a precaution, unplug the power cord from the Switch. After the power returns, plug the power cord back into the power socket of the Switch.

Installing Power Cord Retainer

To prevent accidental removal of the AC power cord, it is recommended to install the power cord retainer together with the power cord. Note that this section only applies to DMS-3130-30TS.

1. With the rough side facing down, insert the tie wrap into the hole below the power socket.
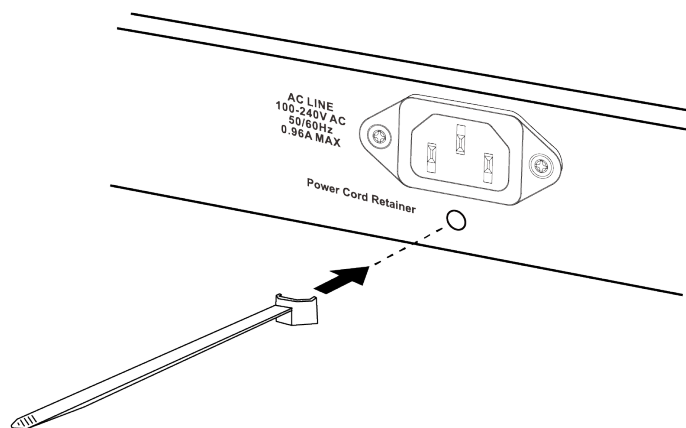
Figure 3-5 Insert Tie Wrap into the Switch

2. Plug the AC power cord into the power socket of the Switch.
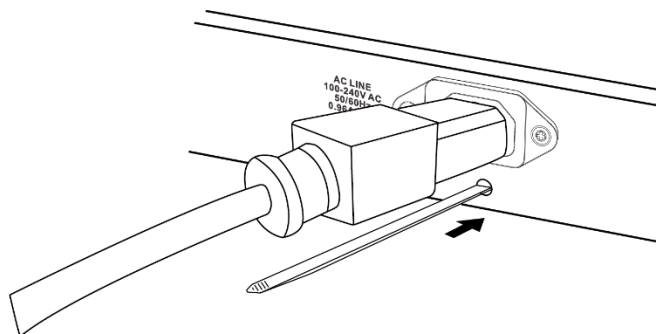
Figure 3-6 Connect the power cord to the Switch

3. Slide the retainer through the tie wrap until the end of the cord.
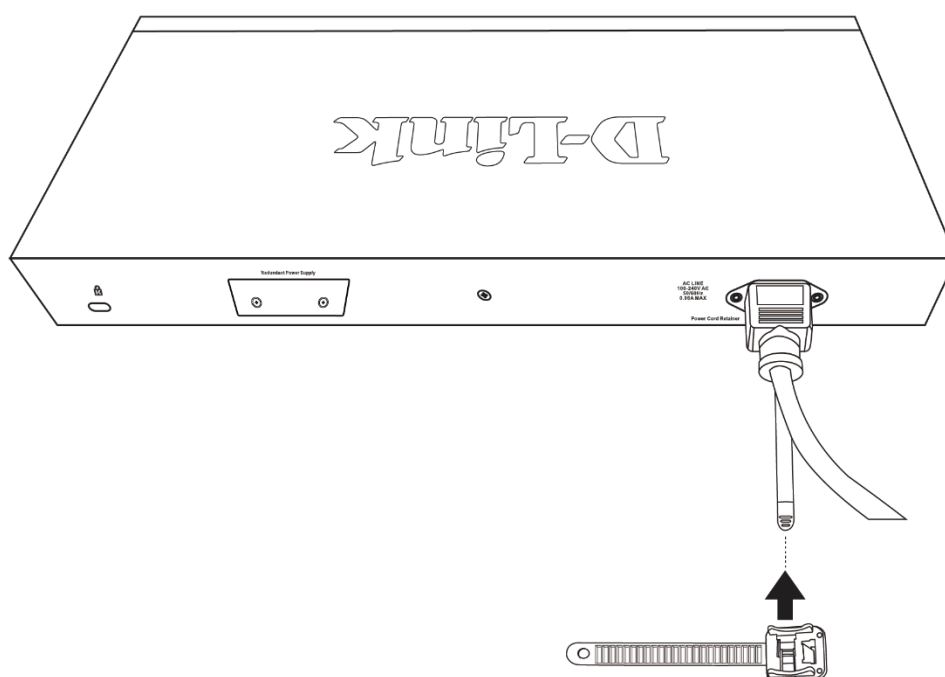
Figure 3-7 Slide the Retainer through the Tie Wrap

4. Circle the tie of the retainer around the power cord and into the locker of the retainer.
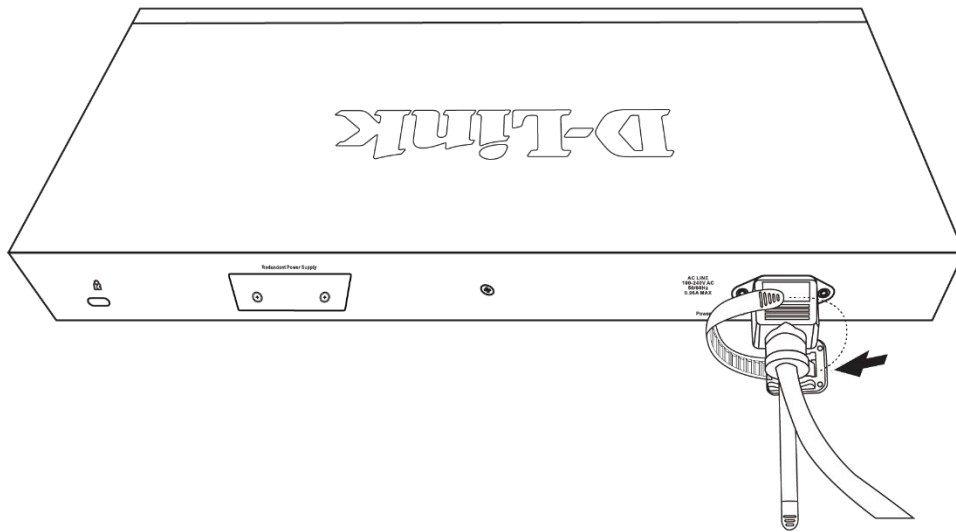
Figure 3-8 Circle around the power cord

5. Fasten the tie of the retainer until the power cord is secured.
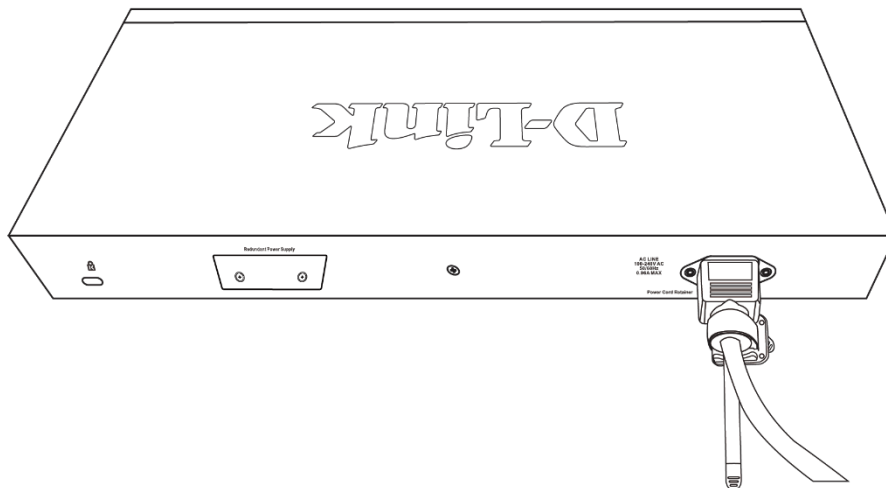
Figure 3-9 Secure the power cord

Installing the Redundant Power Supply (RPS)

The Redundant Power Supply (RPS) is designed to conform to the wattage requirements of D-Link's Ethernet and Gigabit switches. The external RPS unit should be enclosed in solid metal case with sockets to connect AC or DC power sources on one end, and to connect to a switch's internal power supply on the other end. The RPS provides an affordable cost, simple solution to the problem of an inadvertent failure of the internal power supply of an Ethernet switch, which can result in the shutdown of that switch, the devices attached to its ports, or an entire network.

CAUTION: Do not connect the RPS to AC power before the DC power cable is connected. This might damage the internal power supply.

CAUTION: Leave at least 15 cm (6 inches) of space at the rear of the Switch when an RPS is installed to prevent cable damage.

CAUTION: This unit has redundant power sources. Please disconnect all the power cords before servicing.

DPS-500A Series Redundant Power Supply Unit

This RPS (**DPS-500A**) can be connected to the Switch's RPS port using a 14-pin DC power cable. A standard, three-pronged AC power cable connects the RPS to the main power source. Note this section only applies to DMS-3130-30TS.
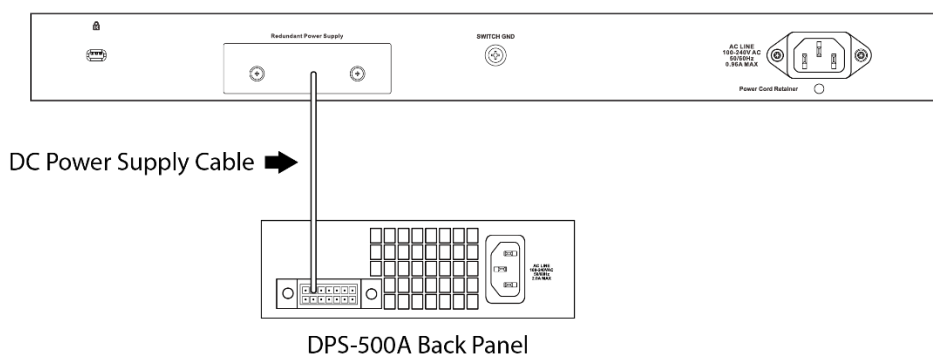
Figure 3–10 Connecting a DMS-3130-30TS Series Switch to the DPS-500A

Remove the AC power cord from the AC power port of the Switch. Insert one end of the 14-pin DC power cable into the port on the switch and the other end into the RPS. Using a standard AC power cable, connect the RPS to the main AC power source. A green LED on the front of the RPS will glow to indicate a successful connection. Reconnect the AC power cord to the AC power port of the Switch. The RPS LED indicator on the front panel of the Switch will indicate that an RPS is present and now in operation. No software configuration is required.

NOTE: See the DPS-500A/DPS-500DC documentation for more information.

CAUTION: This equipment is to be connected only to PoE networks without routing to the outside plant.

Installing the RPS into a Rack-mount Chassis

DPS-800 Rack-mount Chassis

The DPS-800 is a standard-size (1 standard unit in height) rack-mountable unit designed to hold up to two RPS units.

NOTE: This rack-mount chassis supports the following RPS units: **DPS-500A/DPS-500DC**.

The following diagram illustrates how a DPS-500A is installed into a DPS-800.
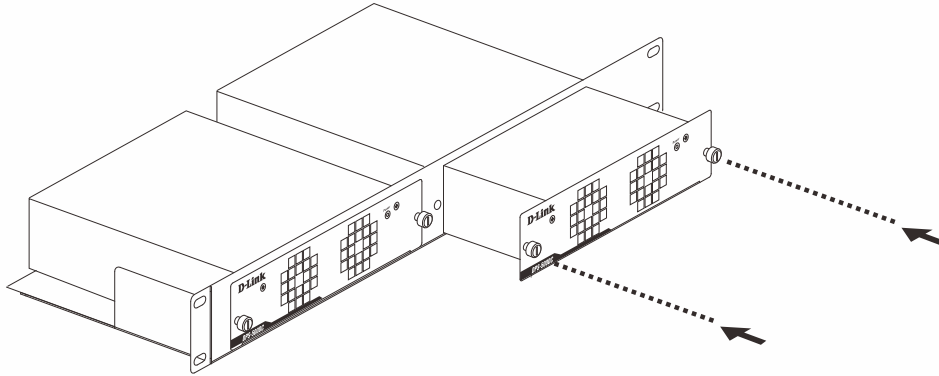
Figure 3–11 Install the DPS-500A in the DPS-800

The DPS-800 can be mounted into a standard 19" rack, as shown below.
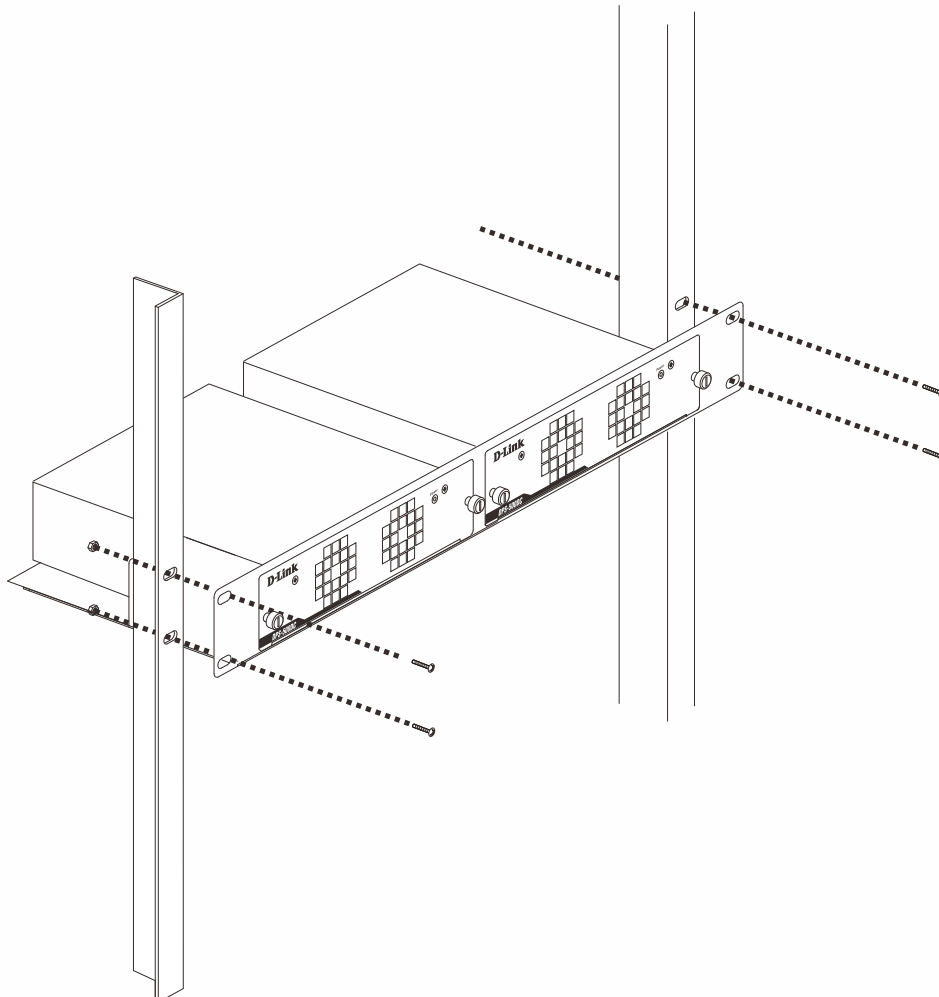
Figure 3–12 Install the DPS-800 in an Equipment Rack

CAUTION: This equipment is only to be connected to PoE networks without routing to outside plant.

4. Switch Connections

Switch to an End Node
Switch to Another Switch
Switch Stacking
Switch to a Server

Switch to an End Node

An end node is a generic name for edge networking devices that will be connected to this switch. Typical examples of end nodes are Personal Computers (PCs), Notebooks, Access Points, Print Servers, VoIP Phones and more. Each end node should be fitted with a RJ45 networking port. Normally, end nodes will connect to this switch by using a standard twisted-pair UTP/STP network cable. When a successful connection is established, the corresponding port light will illuminate and blink to indicate that network activity is taking place on that port.

The diagram below displays a typical end node connected to the Switch.

RJ-45 Connector
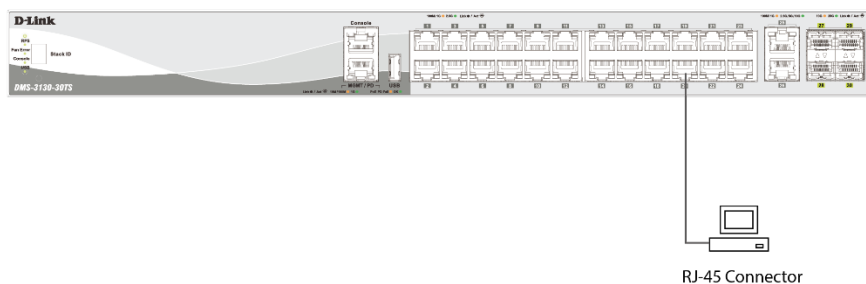
Figure 4-1 Connecting the Switch to an End Node

Switch to Another Switch

The Switch can be used to connect to any other switch or hub in the network. This network topology is used when the Switch does not have enough ports to cater for all the end nodes in the network.

There is a great deal of flexibility on how connections are made using the appropriate cabling.

- Connect a 100BASE-TX switch port to the Switch via a twisted-pair Category 5 UTP/STP cable.
- Connect a 1000BASE-T switch port to the Switch via a twisted pair Category 5e UTP/STP cable.
- Connect a 2.5GBASE-T/5GBASE-T/10GBASE-T switch port to the Switch via a twisted pair Category 6/6a/7 UTP/STP cable.
- Connect a fiber, uplink, switch port supporting an optical fiber uplink to the Switch's SFP28 ports via fiber optical cabling.
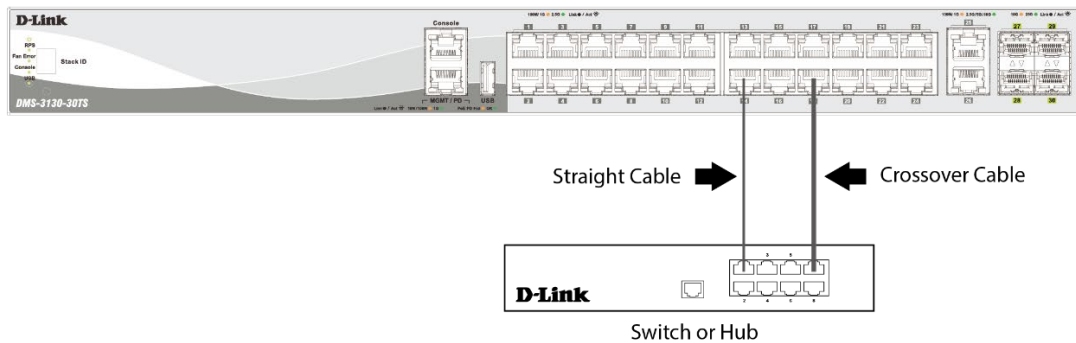
Figure 4-2 Connecting the Switch to another switch/hub

Switch Stacking

The DMS-3130 series supports stacking up to 9 switches together while being managed through one console connection on the master switch, or by an IP address through the MGMT port, or by multiple IP addresses through any one of the ports using Telnet, the Web UI, and SNMP. This cost-effective switch provides an affordable solution for administrators to upgrade their networks using the SFP28 ports to scale and stack the Switches. This increases overall reliability, serviceability, and availability.

- **Duplex Chain** – The Duplex Chain topology stacks switches together in a chain-link format. Using this method, data transfer is only possible in one direction. If there is a break in the chain, then data transfer will be affected.
- **Duplex Ring** – The Duplex Ring stacks switches in a ring or circle format where data can be transferred in two directions. This topology is very resilient due to the fact that, if there is a break in the ring, data can still be transferred through the stacking cables between switches in the stack using the alternate path.

Switches in the series can be physically stacked using optical fiber cables or Direct Attached Cables (DAC) connected to SFP28 transceivers. Only the last 4 ports on the Switch can be used for physical stacking.

Physical stacking needs to be enabled and can be configured to support either a **2-port** or a **4-port** stacking configuration. When the **2-port** stacking configuration is used through the 25G SFP28 ports, a full-duplex speed of up to 100 Gbps will be used between two switches. On the other hand, when the **4-port** stacking configuration is used through the 25G SFP28 ports, a full-duplex speed of up to 200 Gbps will be used between two switches.

- **Stacking Limit** – Physical stacking number in a stack is limited by the maximum stacking device number. In DMS-3130 series, the maximum stacking device number is 9.

Note: Modules with 10G SFP+ transceivers such as 10GBASE-SR/10GBASE-LRM Multi-mode and 10GBASE-LR/10GBASE-ER/10GBASE-ZR Single-mode cannot be used for stacking.

The figures below illustrate how switches can be stacked in a **Duplex Chain** formation using optical fiber cables connected to SFP28 transceivers or DAC with SFP28 connectors where the **2-port** or **4-port** stacking configuration is used.

Figure 4-3 2-Port Duplex Chain stacking topology (SFP28 ports)

Figure 4-4 4-Port Duplex Chain stacking topology (SFP28 ports)

The figures below illustrate how switches can be stacked in a **Duplex Ring** formation using optical fiber cables connected to SFP28 transceivers or DAC with SFP28 connectors where the **2-port** or **4-port** stacking configuration is used.
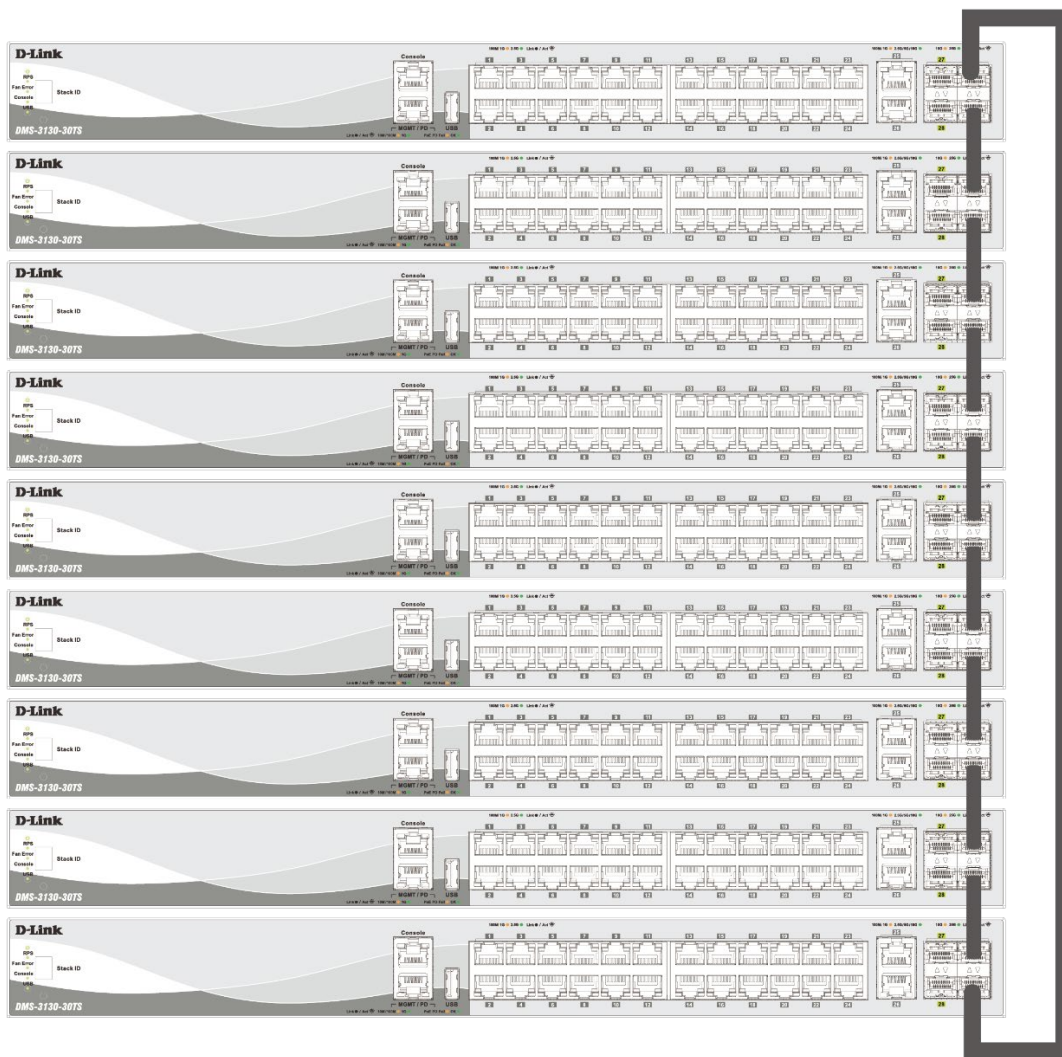
Figure 4-5 2-port Duplex Ring stacking topology (SFP28 ports)

Figure 4-6 4-port Duplex Ring stacking topology (SFP28 ports)
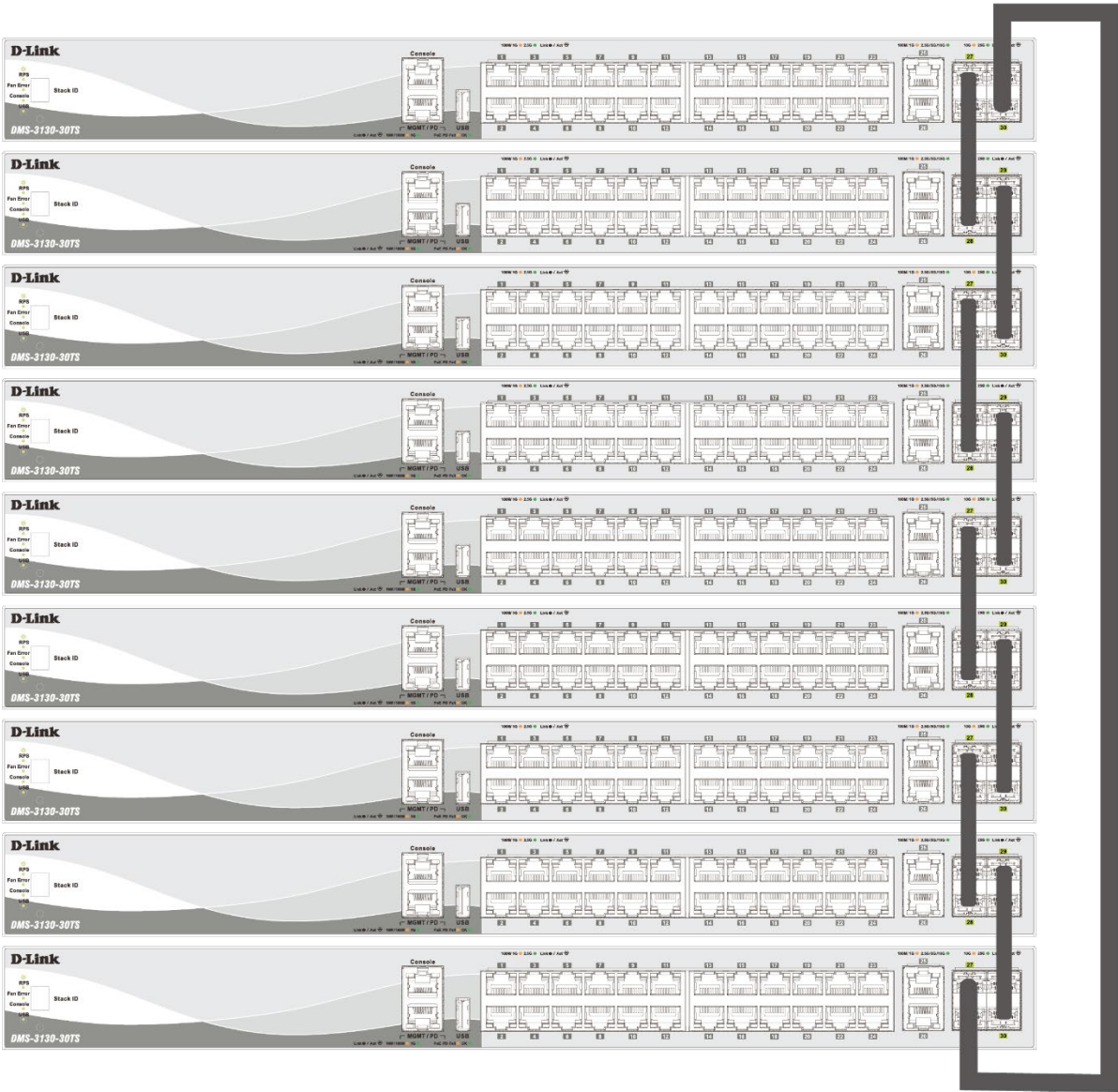
Switch to a Server

The Switch is ideal for connecting to a network backbone, server, or server farm. The RJ45 ports operate at a speed of 100/1000 Mbps up to 2.5, 5, or 10 Gbps depending on the model. The SFP28/SFP+ ports operate at a speed of 10 or 25 Gbps.
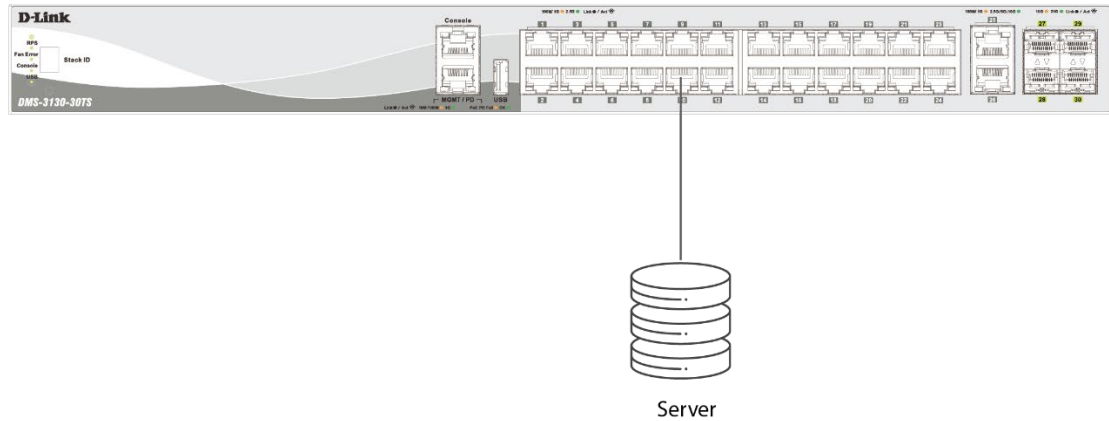
Server

Figure 4-7 Connecting the Switch to a server

5. Switch Management

Management Options

Connecting to the Console Port
Connecting to the MGMT Port
Connecting using SNMP

Management Options

This switch provides multiple access platforms that can be used to configure, manage, and monitor networking features available on this switch. Currently there are three management platforms available which are described below.

Command Line Interface (CLI)

This switch can be managed, out-of-band, by using the console port or the MGMT port on the front/rear panel of the Switch. Alternatively, the Switch can also be managed, in-band, by using a Telnet connection to any of the LAN ports on the Switch. The command line interface provides complete access to all switch management features.

For more detailed information about the CLI, refer to the *DMS-3130 Series CLI Reference Guide*.

SNMP-based Management

The Switch can be managed with a SNMP-compatible console program. The Switch supports SNMP v1, SNMPv2c and SNMPv3. The SNMP agent decodes the incoming SNMP messages and responds to requests with MIB objects stored in the database. The SNMP agent updates the MIB objects to generate statistics and counters.

Web User Interface (Web UI)

The Web UI can be accessed from any computer running web browsing software from its MGMT port, or LAN port when it is connected to any of the RJ45 or SFP28 ports. The Web UI on the Switch can also be accessed using an HTTPS (SSL) connection.

This management interface is a more graphical representation of the features that can be viewed and configured on this Switch. Most of the features available through the CLI can be accessed through the Web UI. Web browsers like Microsoft's Internet Explorer, Mozilla Firefox, or Google Chrome can be used.

For more detailed information about the Web UI, refer to the *DMS-3130 Series Web UI Reference Guide*.

Connecting to the Console Port

The front panel of the Switch provides an RJ45 console port to connect a remote system for monitoring and configuring the Switch. This port requires an RJ45-to-DB9 cable included with the Switch, to establish the physical connection.

Connecting to the RJ45 Console Port

To use the RJ45 console port, the following equipment is needed:

- A terminal or a computer with both an RS-232 serial port and terminal emulation software.
- A console cable with a female DB9 connector on one end and an RJ45 connection on the other. This cable should be included with the Switch. It establishes the physical connection to the console port.

To connect the RJ45 console port on the Switch to the computer:

- Connect the DB9 connector on the console cable to the RS-232 serial port on the computer running terminal emulation software then insert the RJ45 connector into the RJ45 console port on the front of the Switch.

To configure the terminal emulation software with the following settings:

- Select the appropriate serial port (COM1 or COM2).
- Set the data rate to 115200 baud.
- Set the data format to 8 data bits, 1 stop bit, and no parity.
- Set flow control to none.

To be able to view the boot procedure, the Switch needs to be rebooted. The simplest way, at this stage, to reboot the Switch is to unplug and re-insert the power cable from and into the power receptacle on the back of the Switch.

After correctly configuring the terminal settings and re-inserting the power cable, the boot procedure will appear in the terminal.

```
Boot Procedure                                       V5.00.001
-------------------------------------------------------------------------

Power On Self Test ........................................  100 %

MAC Address    : F0-7D-68-36-30-00
H/W Version    : A1

Please Wait, Loading 1.00.B009 Runtime Image ...............  100 %
UART init ...................................................  100 %
Starting runtime image
Device Discovery ..........................................  100 %
Configuration init ........................................  100 %
```

After the boot sequence has been completed, the console login screen will be displayed.

Connecting to the Switch for the First Time

The Switch supports user-based security that can prevent unauthorized users from accessing the Switch or changing its configuration. This section will explain how to log into the Switch's Command Line Interface via the out-of-band console connection.

Upon initial connection to the Switch, the login screen appears (see example below).

```
                    DMS-3130-30TS Gigabit Ethernet Switch

                           Command Line Interface
                         Firmware: Build 1.00.B009
            Copyright(C) 2018 D-Link Corporation. All rights reserved.
Switch>
```

By default, there is no **Username** and **Password** configured in the account settings of this switch for console connection. This will allow the user to simply connect to this Switch for the first time by pressing the '**Enter**' key. After pressing **Enter**, access will be given to enter commands after the command prompt (**Switch>**) appears.

NOTE: The first user automatically gets Administrator level privileges. At least one Administrator-level user account must be created for the Switch.

NOTE: It is highly recommended to create a user account containing a username and a password on the Switch to prevent unauthorized access to the management interface.

Creating a User Account

One of the first and most important tasks will be to create user accounts. Logging in using a predefined administrator-level username will give the user privileged access to the Switch's management software. Also this will prevent unauthorized access to the Switch and record the passwords for future reference.

An example to create an administrator-level account for the Switch called 'NewUser':

```
Switch#enable
Switch#configure terminal
Switch(config)#username NewUser password 12345
Switch(config)#username NewUser privilege 15
Switch(config)#line console
Switch(config-line)#login local
Switch(config-line)#end
Switch#
```

In the example above:
1. At the CLI command prompt, enter the **enable** command to enter the **Privileged EXEC Mode**. Press **Enter**.
2. Enter the **configure terminal** command to enter the **Global Configuration Mode**. Press **Enter**.
3. Enter the **username NewUser password 12345** command. Press **Enter**. This will create a user account with the username of NewUser and a password of 12345.
4. Enter the **username NewUser privilege 15** command. Press **Enter**. This will configure this user account to have **Administrative** (**15**) privileges.
5. Enter the **line console** command to enter the **Line Configuration Mode**. Press **Enter**.
6. Enter the **login local** command. Press **Enter**. This specifies that the local line requires login credentials.
7. Enter the **end** command to exit back to the **Privileged EXEC Mode**.

> **NOTE:** Passwords are case sensitive. Usernames can be up to 32 characters in length. Passwords can be up to 32 plain-text characters.

Configuring the IP Address

Each switch must be assigned its own in-band IP Address, which is used for communication with an SNMP network manager or other TCP/IP applications. The Switch's default IP address is 10.90.90.90 with a subnet mask of 255.0.0.0. You can change the IP address of the Switch to meet the specification of your networking address scheme.

The IP address of the Switch must be configured before it can be managed, by the user, via the Web UI.

An example to change the IP address of the Switch to '10.50.50.50', using a subnet mask of '255.0.0.0':

```
Switch>enable
Switch#configure terminal
Switch(config)#interface vlan 1
Switch(config-if)#ip address 10.50.50.50 255.0.0.0
Switch(config-if)#
```

In the above example,
1. We accessed the **Privileged EXEC Mode** by entering the command **enable**.
2. Then we entered the **Global Configuration Mode** by entering the command, **configure terminal**.
3. Then we entered the **VLAN Configuration Mode** of the default VLAN, which is VLAN 1, by entering the command, **interface vlan 1**.
4. Then we changed the IP address of the Switch to 10.50.50.50 and the subnet mask to 255.0.0.0 by entering the command **ip address 10.50.50.50 255.0.0.0**.

The Switch can now be accessed and configured through Telnet or the Web UI. The Switch's IP address can also automatically be obtained by using the DHCP protocol.

Connecting to the MGMT Port

The front panel of the Switch features an Out-Of-Band (OOB) RJ45 MGMT port which can be used to connect to a computer using a standard Ethernet cable. A web browser or Telnet client can be used to connect to the Switch using the MGMT port.

Note: The Telnet method requires a password to log in to the CLI by default. After logging in to the Web UI, go to **Management > Login Method**. Create a password for telnet in the **Login Password** section (refer to the following chapter: **Web-based Switch Configuration** for access through a web browser).

To use the MGMT port, connect one end of an Ethernet cable to a computer and the other end to the Switch. The default IP address of the MGMT port is 192.168.0.1 and the subnet mask is 255.255.255.0. Make sure that the computer being used for the switch management has a non-conflicting IP address in the 192.168.0.0/24 network.

The following screen should be displayed after a successful connection:

```
            DMS-3130-30TS Gigabit Ethernet Switch

                 Command Line Interface
                   Firmware: 1.00.B009
        Copyright(C) 2018 D-Link Corporation. All rights reserved.

User Verification Access


Password:*****

Switch>
```

To view the IP settings of the MGMT port, use the following command through the console port.:

```
Switch#show ip interface mgmt 0

mgmt_ipif 0 is enabled, Link status is up
  IP address is 192.168.0.1/24
  Gateway is 0.0.0.0

Switch#
```

The IP settings or enabled status of the MGMT port can be changed through the console port. For example, to change the IP address of the MGMT port, use the following commands:

```
Switch#configure terminal
Switch(config)#interface mgmt 0
Switch(config-if)#ip address 192.168.1.1 255.255.255.0
Switch(config-if)#
```

Connecting using SNMP

The Simple Network Management Protocol (SNMP) is an OSI Layer 7 (Application Layer) protocol designed specifically for managing and monitoring network devices. SNMP enables network management stations to read and modify the settings of gateways, routers, switches, and other network devices. Use SNMP to configure system features for proper operation, monitor performance, and detect potential problems in the Switch, switch group, or network.

Managed devices that support SNMP include software (referred to as an agent), which runs locally on the device. A defined set of variables (managed objects) is maintained by the SNMP agent and used to manage the device. These objects are defined in a Management Information Base (MIB), which provides a standard presentation of the information controlled by the on-board SNMP agent. SNMP defines both the format of the MIB specifications and the protocol used to access this information over the network.

The Switch supports SNMPv1, SMNPv2c, and SNMPv3. The administrator may specify which SNMP version to use to monitor and control the Switch. The three SNMP versions vary in the level of security provided between the management station and the network device.

In SNMPv1 and SNMPv2c, user authentication is accomplished using 'community strings', which function like passwords. The remote user SNMP application and the Switch SNMP must use the same community string. SNMP packets from any station that has not been authenticated are ignored (dropped).

The default community strings for the Switch used for SNMPv1 and SNMPv2c management access are:
- **public** - Allows authorized management stations to retrieve MIB objects.
- **private** - Allows authorized management stations to retrieve and modify MIB objects.

SNMPv3 uses a more sophisticated authentication process that is separated into two parts. The first part is to maintain a list of users and their attributes that are allowed to act as SNMP managers. The second part describes what each user on that list can do as an SNMP manager.

The Switch allows groups of users to be listed and configured with a shared set of privileges. The SNMP version may also be set for a listed group of SNMP managers. Thus, a group of SNMP managers can be created to view read-only information or receive traps using SNMPv1 while assigning a higher level of security to another group, granting read/write privileges using SNMPv3.

Using SNMPv3 individual users or groups of SNMP managers can be allowed to perform or be restricted from performing specific SNMP management functions. The functions that have been allowed or restricted are defined using the Object Identifier (OID) associated with a specific MIB. An additional layer of security is available for SNMPv3 in that SNMP messages may be encrypted.

Traps

Traps are messages that are sent by an SNMP-enabled device to the NMS, and can be used to alert network personnel of events that occur on the Switch. The events can be as serious as a reboot (someone accidentally turned off the Switch), or less serious like a port status change. The Switch generates traps and sends them to a pre-configured IP address, usually an NMS. Typical traps include trap messages for Authentication Failure and Topology Change.

Management Information Base (MIB)

A Management Information Base (MIB) stores management and counter information. The Switch uses the standard MIB-II Management Information Base module. Consequently, values for MIB objects can be retrieved from any SNMP-based network management software. In addition to the standard MIB-II, the Switch also supports its own proprietary enterprise MIB as an extended Management Information Base. The proprietary MIB may also be retrieved by specifying the MIB Object Identifier. MIB values can be either read-only or read-write.

Web-based Switch Configuration

Introduction
Logging into the Web UI
Web User Interface (Web UI)

Introduction

Most software functions of the Switch can be managed, configured, and monitored via the embedded HTML Web UI. Management can be done on the Switch from remote stations anywhere on the network through a standard web browser. The web browser acts as a universal access tool and can communicate directly with the Switch using the HTTP or HTTPS (SSL) protocol.

The following web browsers are supported:

- Internet Explorer
- Firefox
- Google Chrome
- Safari

Logging into the Web UI

To access the Web UI, open a standard web browser, enter the Switch's IP address into the address bar of the browser, and press the ENTER key. By default, the MGMT port, located just below the RJ45 console port, can be accessed using the IP address of 192.168.0.1. To access the Web UI from normal LAN ports, the default IP address is 10.90.90.90.

NOTE: To configure the IP address of the Switch, refer to the **Configuring the IP Address** section.

After pressing the ENTER key, the following authentication window should appear, as shown below.

Figure 0-1 Web UI Login Window

When connecting to the Web UI of the Switch for the first time, leave the **User Name** and **Password** fields *blank* and click **Login** since there are no login user accounts created by default on this switch.

NOTE: After a user account was created, login credentials will be required to access the Web UI. During the sending and receiving of the login password to and from the Switch, this information will be protected using a strong encryption algorithm to prevent attackers from snooping this information to gain unauthorized access to the Switch.

Web User Interface (Web UI)

The Web UI provides access to various Switch configuration and management windows. It allows the user to view performance statistics, and permits graphical monitoring of the system's status.

Areas of the Web UI

After logging into the Switch's Web UI, the following page will be displayed. The Web UI can be divided into four distinct areas that are described in more detail in the table below.

Figure 0-2 Main Web UI Window

Four main areas are displayed in the window.

Area Number	Function
AREA 1	This area displays a graphical, near real-time image of the front panel of the Switch. This area displays the Switch's ports and expansion modules. It also shows port activity based on a specific mode. Some management functions, including port monitoring, are accessible from here. Click the D-Link logo to go to the D-Link website.
AREA 2	This area displays a file explorer-type menu tree with all configurable options. Select the folder or window to display. Open folders and click the hyperlinked window buttons and subfolders contained within them to display information pertaining to that category.
AREA 3	This area displays a toolbar used to access **Save** and **Tools** menus.
AREA 4	This area displays graphical, real-time monitoring gauges of **Device Information**, **CPU Usage**, and **Memory Usage**.

Web Pages

In area 2, mentioned above, the following main folders will be available for selecting.

Folder Name	Description
System	Features regarding the Switch's configuration can be viewed and configured in this folder.
Management	Features regarding the Switch's management can be viewed and configured in this folder.
L2 Features	Features regarding the Layer 2 functionality of the Switch can be viewed and configured in this folder.
L3 Features	Features regarding the Layer 3 functionality of the Switch can be viewed and configured in this folder.
QoS	Features regarding the Quality of Service functionality of the Switch can be viewed and configured in this folder.
ACL	Features regarding the Access Control List functionality of the Switch can be viewed and configured in this folder.
Security	Features regarding the Switch's security can be viewed and configured in this folder.
OAM	Features regarding the Switch's Operations, Administration and Maintenance (OAM) can be viewed and configured in this folder.
Monitoring	The Switch's configuration and statistics can be viewed and configured in this folder.
Green	Features regarding the D-Link Green Technology can be viewed and configured in this folder.

Appendix A - Technical Specifications

General

Feature	Description	
Data Transfer Rates	Standards	Full-duplex
	Ethernet	20 Mbps
	Fast Ethernet	200 Mbps
	Gigabit Ethernet	2 Gbps
	2.5 Gigabit Ethernet	5 Gbps
	5 Gigabit Ethernet	10 Gbps
	10 Gigabit Ethernet	20 Gbps
	25 Gigabit Ethernet	50 Gbps
Physical Stacking	**Stacking Topology:** Duplex Chain, Duplex Ring	
	Stacking Bandwidth: Up to 200 Gbps (depending on the topology)	
	Stacking Units: Up to 9 switches in a stack	
	Backup Master Support: Yes	
Network Cables	UTP/STP Category 3, 4, 5 for 10BASE-T UTP/STP Category 5, 5e for 100BASE-TX UTP/STP Category 5e for 1000BASE-T UTP/STP Category 7/6/6a for 2.5GBASE-T/5GBASE-T/10GBASE-T EIA/TIA-568 100-ohm screened twisted-pair (STP) (100 m) 10GBASE-SR Multi-mode, 10GBASE-LR Single-mode, 10GBASE-ER Single-mode, 10GBASE-ZR Single-mode, 10GBASE-LRM Multi-Mode, 1 m/3m/7m 10G SFP+ Direct Attach Cable (DAC), 1 m 25G SFP28 Direct Attach Cable (DAC)	

Physical and Environmental

Feature	Description
Internal Power Supply	AC Input: 100~240 VAC, 50~60 Hz
Optional Redundant Power Supply	Available on DMS-3130-30TS only. One connector in back to install optional external RPS. When internal power fails, the optional external RPS will take over all the power supply immediately and automatically. This product is intended to be supplied by UL Listed Power source.
Hot-swappable Redundant Power Supply	Available on DMS-3130-30PS only. Two hot-swappable RPS in the back to back up each other. When one power unit fails, the other will take over the power supply immediately and automatically.
Security Lock	Available on DMS-3130-30TS only. Provides a Kensington-compatible security lock, on the rear panel of the Switch, to be able to connect to a secure immovable device. Insert the lock into the notch and turn the key to secure the lock. The lock-and-cable apparatus should be purchased separately
Real Time Clock (RTC)	Be able to maintain the time setting when the device power is off
Fans	The IC Sensor detects the temperature on the switch automatically and adjusts the speed

Feature	Description
USB Slot	Supports a USB 2.0 Type-A flash drive with a maximum current of 1 A. This slot only supports FAT16 and FAT32 file system architectures
Power Consumption	**DMS-3130-30TS:** 74.26W (Max.), 43.84W (Standby)
	DMS-3130-30PS: 1211.5W (PoE on)/87.3W (PoE off), 58.3W (Standby)
Temperature	**Operating:** 0 °C to 50 °C (32 °F to 122 °F)
	Storage: -40 °C to 70 °C (-40 °F to 158 °F)
Humidity	**Operating:** 10 % to 90 % RH (non-condensing)
	Storage: 5 % to 90 % RH (non-condensing)
Heat Dissipation	**DMS-3130-30TS:** 253,38 BTU/Hr. (Max.)
	DMS-3130-30PS: 4137.73 BTU/Hr. (Max.)
Dimensions	**DMS-3130-30TS:** 440 mm (W) x 250 mm (D) x 44 mm (H), 19-inch, 1 U Rack-mount size
	DMS-3130-30PS: 440 mm (W) x 470 mm (D) x 44 mm (H), 19-inch, 1 U Rack-mount size
Weight	**DMS-3130-30TS:** 3.63Kg (8 lbs)
	DMS-3130-30PS: 6.54Kg (14.41 lbs)
MTBF	**DMS-3130-30TS:** 270,340.81 Hours
	DMS-3130-30PS: 277,222.63 Hours
EMC Certifications	CE Class A, FCC Class A, VCCI Class A, RCM, BSMI
Safety Certifications	UL/cUL, CB, BSMI

Performance

Feature	Description
Transmission Method	Store-and-forward
Packet Buffer	**DMS-3130-30TS:** 4 MBytes per device
	DMS-3130-30PS: 4 MBytes per device
Jumbo Frame Size	9K Bytes (9216 Bytes)
Switching Capacity	**DMS-3130-30TS:** 360 Gbps
	DMS-3130-30PS: 400 Gbps
Maximum Packet Forwarding Rate	**DMS-3130-30TS:** 125 Mpps
	DMS-3130-30PS: 161 Mpps
Priority Queues	8 Priority Queues per port.
MAC Address Table	Supports 32K (32,768) MAC addresses
IP Routing Tables	**IPv4 and IPv6:** Max.1024 entries
Virtual Stacking / Clustering	Supports D-Link Single IP Management version 2.01
	Manages up to 32 devices in a virtual stack with a single IP address

LED Indicators

Location	LED	Color	Status	Description
Per Device	Power	Green	Light on (Solid)	Power on

Location	LED	Color	Status	Description
		Off	Light off	Power off
	Console	Green	Light on (Solid)	RJ45 console port is active
		Off	Light off	Console off
	Fan Err	Red	Light on (Solid)	Fan fail
		Off	Light off	Operating normally
	RPS	Green	Light on (Solid)	RPS in use
			Light off	RPS off
	USB	Green	Light on (Solid)	USB plugged in
			Light blinking	Busy reading/writing
		Off	Light off	No USB plugged in
	Stacking ID (7-segment LED)	Green	Light on (1-9)	Stacking number displayed
			Light on (H)	Stacking Master
			Light on (h)	Stacking Backup Master
			Light on (E)	System self-test error
			Light on (G)	Safeguard Engine in exhausted mode
LED Per 10/100/1000 Mbps Port	**Link/Act/Speed**	Green	Light on (Solid)	When there is a connection (or link) to a 1000 Mbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 1000 Mbps
		Amber	Light on (Solid)	When there is a connection (or link) to a 10/100 Mbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 10/100 Mbps
		Off	Light off	Link down or no link
LED Per 2.5 Gbps Port	**Link/Act/Speed**	Green	Light on (Solid)	When there is a connection (or link) to a 2.5 Gbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 2.5 Gbps
		Amber	Light on (Solid)	When there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 100/1000 Mbps
		Off	Light off	Link down or no link
	PSE (for DMS-3130-30PS only)	Green	Light on (Solid)	Supplying power to Powered Devices
		Amber	Light on (Solid)	Error condition
		Off	Light off	Link down or no link
LED Per 5 Gbps Port (for DMS-3130-30PS only)	**Link/Act/Speed**	Green	Light on (Solid)	When there is a connection (or link) to a 2.5 or 5 Gbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 2.5 or 5 Gbps

Location	LED	Color	Status	Description
		Amber	Light on (Solid)	When there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 100/1000 Mbps
		Off	Light off	Link down or no link
	PSE	Green	Light on (Solid)	Supplying power to Powered Devices.
		Amber	Light on (Solid)	Error condition
		Off	Light off	Link down or no link
LED Per 10 Gbps Port	**Link/Act/Speed**	Green	Light on (Solid)	When there is a connection (or link) to a 2.5/5/10 Gbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 2.5/5/10 Gbps
		Amber	Light on (Solid)	When there is a connection (or link) to a 100/1000 Mbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at 100/1000 Mbps
		Off	Light off	Link down or no link
LED per SFP28/SFP+ Port	**Link/Act/Speed**	Green	Light on (Solid)	When there is a connection (or link) to a 25 Gbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at a 25 Gbps port
		Amber	Light on (Solid)	When there is a connection (or link) to a 10 Gbps Ethernet device on any of the ports
			Light blinking	When there is reception or transmission of data occurring at a 10 Gbps port
		Off	Light off	Link down or no link

Port Functions

Feature	Description
RJ45 Ports	Compliant with the following standards: • IEEE 802.3 compliance • IEEE 802.3u compliance • IEEE 802.3ab compliance • IEEE 802.3an compliance • IEEE 802.3az compliance (Energy Efficient Ethernet) • IEEE 802.3bz compliance • IEEE 802.3af compliance • IEEE 802.3at compliance • IEEE 802.3bt compliance
	Support Full-Duplex operations • IEEE 802.3x Flow Control support for Full-Duplex mode

Feature	Description
SFP+ Ports	Compliant with the following standards: • IEEE 802.3ae compliance
	SFP+ Transceivers Supported: • DEM-431XT: 10GBASE-SR Multi-mode, OM1:33M/OM2:82M/OM3:300M (w/o DDM) • DEM-432XT: 10GBASE-LR Single-mode, 10 km (w/o DDM) • DEM-433XT: 10GBASE-ER Single-mode, 40 km (w/o DDM) • DEM-434XT: 10GBASE-ZR Single-mode, 80 km (w/o DDM) • DEM-435XT: 10GBASE-LRM Multi-Mode, 200M (w/o DDM) • DEM-436XT-BXD: 10GBASE-LR Single-mode, 20 km (TX-1330/RX-1270 nm) (w/o DDM) • DEM-436XT-BXU: 10GBASE-LR Single-mode, 20 km (TX-1270/RX-1310 nm) (w/o DDM) • DEM-410T: 10G copper CAT6A, 30m
	SFP+ Direct Attached Cables (DAC) Supported: • DEM-CB100S: 1 m 10G SFP+ Direct Attach Cable (DAC) • DEM-CB300S: 3 m 10G SFP+ Direct Attach Cable (DAC) • DEM-CB700S: 7 m 10G SFP+ Direct Attach Cable (DAC)
SFP28 Ports	Compliant with the following standards: • IEEE 802.3ae compliance • IEEE 802.3by compliance
	SFP28 Transceivers Supported: • DEM-S2801SR: 25G SFP28 Multi-Mode 100 m transceiver • DEM-S2810LR: 25G SFP28 Single-Mode 10 km transceiver
	SFP28 Direct Attached Cables (DAC) Supported: • DEM-CB100S28: 1 m 25G SFP28 Direct Attach Cable (DAC)

Appendix B - Cables and Connectors

Ethernet Cable

When connecting the Switch to another switch, a bridge or hub, a straight-through Cat5/5e/6a/7 cable is necessary. Please review these products for matching cable pin assignment.

The following diagrams and tables show the standard RJ45 receptacle/connector and their pin assignments.
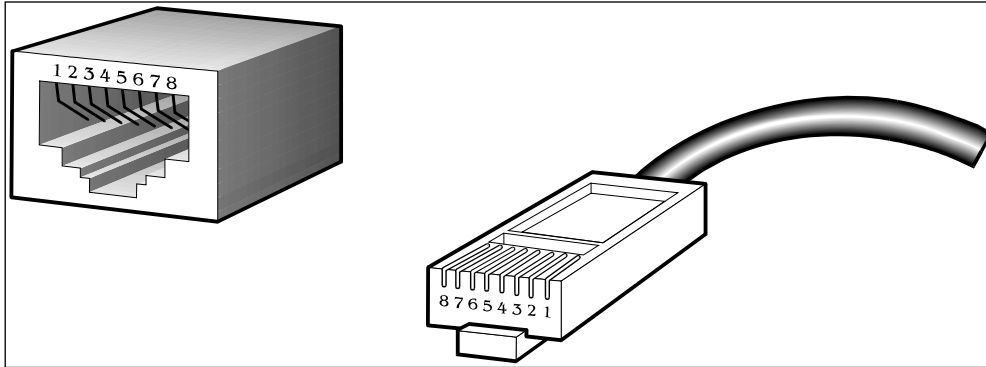

Figure B-1 Standard RJ45 port and connector

RJ45 Pin Assignment

Contact	MDI-X Port	MDI-II Port
1	RD+ (receive)	TD+ (transmit)
2	RD - (receive)	TD - (transmit)
3	TD+ (transmit)	RD+ (receive)
4	1000BASE-T	1000BASE-T
5	1000BASE-T	1000BASE-T
6	TD - (transmit)	RD - (receive)
7	1000BASE-T	1000BASE-T
8	1000BASE-T	1000BASE-T

Console Cable (RJ45 to RS-232)

A console cable is used to connect to the RJ45 console port of the Switch to access the command line interface. The following diagram and table show the standard RJ45 to RS-232 cable and pin assignments.
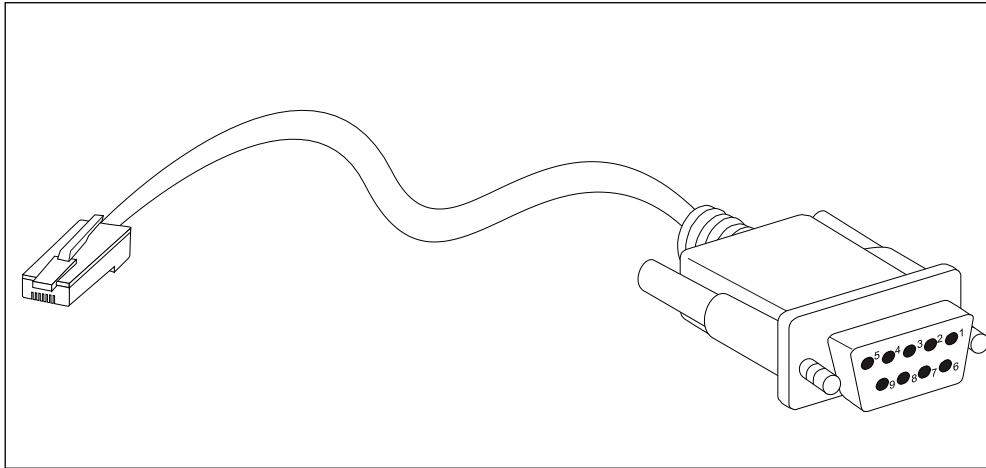

Figure B-2 Console to RJ45 Cable

Contact	Console (DB9/RS232)	RJ45
1	Not Used	Not Used
2	RXD	Not Used
3	TXD	TXD
4	Not Used	GND
5	GND (shared)	GND
6	Not Used	RXD
7	Not Used	Not Used
8	Not Used	Not Used

Redundant Power Supply (RPS) Cable

When connecting the Switch to an external Redundant Power Supply, an RPS cable is necessary. Please review this product for matching cable pins. The following diagram and table show the standard RPS connector and its pin assignments.
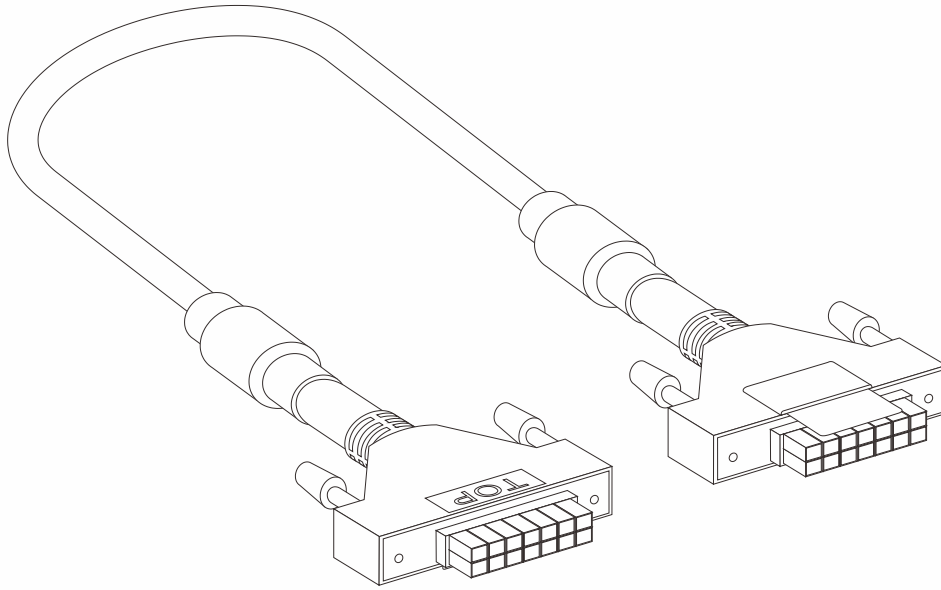
Figure B-3 RPS Cable for DPS-500A (14-pin Power Cable)

RPS Cable – 14 PIN Assignments:

Pin	Device	DPS-500A
1	Not Connected	GND
2	GND	N/C
3	GND	+12V
4	GND	+12V
5	GND	+12V
6	+12V	+12V
7	+12V	GND
8	+12V	N/C
9	Not Connected	N/C
10	Not Connected	RPS Power
11	RPS_Present	N/C
12	RPS_Power Good	N/C
13	Not Connected	PWR-Good
14	+12V	GND

CE RED Compliance Statement

Hereby, D-Link Corporation declares that the radio equipment type DWP-1010 is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address: http://www.dlink.com/uk/en/support/cedoc

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment.

CE

Name of manufacturer:	D-Link Corporation
Address:	No.289, Xinhu 3rd Rd, Neihu District
Zip code & City:	Taipei City 114
Country:	Taiwan
Telephone number:	886-2-6600-0123

Additional Notice

This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Technical Support

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