

# SUPERMICRO®

**SSE-X3348S  
SSE-X3348SR  
48-Port 10G  
Top-of-Rack Switch**



## **Installation Manual**

Revision 1.0

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Manual Revision 1.0

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# Preface

## About this Manual

This manual is written for professional system integrators, Information Technology professionals, service personnel, technicians and network administrators who are responsible for installing and setting up network equipment; consequently, it assumes a basic working knowledge of LANs (Local Area Networks). It provides information for the installation and use of the Supermicro's SSE-X3348S/SSE-X3348SR switches. Installation and maintenance should be performed by experienced professionals only.

## Manual Organization

### Chapter 1: Introduction

The first chapter provides a checklist of the main components included with the switch and describes its main features.

### Chapter 2: System Safety

You should familiarize yourself with this chapter for a general overview of safety precautions that should be followed when installing and servicing the switch.

### Chapter 3: Network Planning

Refer here for details on network planning for the switch.

### Chapter 4: Installation

This chapter describes how to install the switch.

### Chapter 5: Connecting

This chapter covers how to connect the switches to PCs and servers, as well as to other switches and hubs.

### Chapter 6: Hardware Specifications

This chapter lists and describes hardware specifications for the switch.

### Chapter 7: Switch Management

This chapter lists and describes switch management software for the switch.

### Chapter 8: Troubleshooting

This chapter covers troubleshooting issues for the switch.

## Glossary

Glossary Term	Description
10BASE-T	IEEE 802.3 specification for 10 Mbps Ethernet over two pairs of Category 3, 4, or 5 UTP cable.
100BASE-FX	IEEE 802.3 specification for 100 Mbps Ethernet over two strands of 50/125, 62.5/125 micron, or 9/125 micron core fiber cable.
100BASE-TX	IEEE 802.3u specification for 100 Mbps Ethernet over two pairs of Category 5 UTP cable.
1000BASE-LX	IEEE 802.3z specification for Gigabit Ethernet over two strands of 50/125, 62.5/125 or 9/125 micron core fiber cable.
1000BASE-LH	Specification for long-haul Gigabit Ethernet over two strands of 9/125 micron core fiber cable.
1000BASE-SX	IEEE 802.3z specification for Gigabit Ethernet over two strands of 50/125 or 62.5/125 micron core fiber cable.
1000BASE-T	IEEE 802.3ab specification for Gigabit Ethernet over 100-ohm Category 5, 5e or 6 twisted-pair cable (using all four wire pairs).
10GBASE-T	IEEE 802.3an-2006 specification for 10-Gigabit Ethernet over 100-ohm category 6 or 6A twisted pair cable (using all four wire pairs) over distances of up to 100 meters (330-ft.).
Auto-Negotiation	Signalling method allowing each node to select its optimum operational mode (e.g., speed and duplex mode) based on the capabilities of the node to which it is connected.
Bandwidth	The difference between the highest and lowest frequencies available for network signals. Also synonymous with wire speed, the actual speed of the data transmission along the cable.
Collision Domain	Single CSMA/CD LAN segment.
CSMA/CD	CSMA/CD (Carrier Sense Multiple Access/Collision Detect) is the communication method employed by Ethernet, Fast Ethernet, and Gigabit Ethernet.
End Station	A workstation, server, or other device that does not forward traffic.
Ethernet	A network communication system developed and standardized by DEC, Intel, and Xerox, using baseband transmission, CSMA/CD access, logical bus topology, and coaxial cable. The successor IEEE 802.3 standard provides for integration into the OSI model and extends the physical layer and media with repeaters and implementations that operate on fiber, thin coax and twisted-pair cable.
Fast Ethernet	A 100 Mbps network communication system based on Ethernet and the CSMA/CD access method.
Full Duplex	Transmission method that allows two network devices to transmit and receive concurrently, effectively doubling the bandwidth of that link.
Gigabit Ethernet	A 1000 Mbps network communication system based on Ethernet and the CSMA/CD access method.
IEEE	Institute of Electrical and Electronic Engineers.

<b>Glossary Term</b>	<b>Description</b>
IEEE 802.3	Defines carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications.
IEEE 802.3ab	Defines CSMA/CD access method and physical layer specifications for 1000BASE-T Gigabit Ethernet. (Now incorporated in IEEE 802.3-2005.)
IEEE 802.3az	Defines the IEEE 8023az specification for enhancing the twisted-pair and backplane Ethernet standards that allows for less power consumption during periods of low data activity.
IEEE 802.3u	Defines CSMA/CD access method and physical layer specifications for 100BASE-TX Fast Ethernet. (Now incorporated in IEEE 802.3-2005.)
IEEE 802.3x	Defines Ethernet frame start/stop requests and timers used for flow control on full-duplex links. (Now incorporated in IEEE 802.3-2005.)
IEEE 802.3z	Defines CSMA/CD access method and physical layer specifications for 1000BASE Gigabit Ethernet. (Now incorporated in IEEE 802.3-2005.)
LAN Segment	Separate LAN or collision domain.
LED	Light emitting diode used for monitoring a device or network condition.
Local Area Network (LAN)	A group of interconnected computer and support devices.
Media Access Control (MAC)	A portion of the networking protocol that governs access to the transmission medium, facilitating the exchange of data between network nodes.
MIB	An acronym for Management Information Base. It is a set of database objects that contains information about the device.
RJ-45 Connector	A connector for twisted-pair wiring.
STP	Shielded Twisted Pair.
SMPS	Switching Mode Power Supply.
Switched Ports	Ports that are on separate collision domains or LAN segments.
TIA	Telecommunications Industry Association
UTP	Un-shielded twisted-pair cable.
Virtual LAN (VLAN)	A Virtual LAN is a collection of network nodes that share the same collision domain regardless of their physical location or connection point in the network. A VLAN serves as a logical workgroup with no physical barriers, allowing users to share information and resources as though located on the same LAN.

## Notes

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# Chapter 1

## Introduction

### 1-1 Overview

The SSE-X3348S/SSE-X3348SR switch is a high-performance top-of-rack switch, designed for data center operating environments. The switch provides 48 10G Small Form Factor Pluggable Plus (SFP+) ports, four 40G Quad SFP+ (QSFP+) ports, and two 1G RJ-45 ports (see [Figure 1-1](#) below). The switch also includes replaceable dual power supply units and a fan tray module.

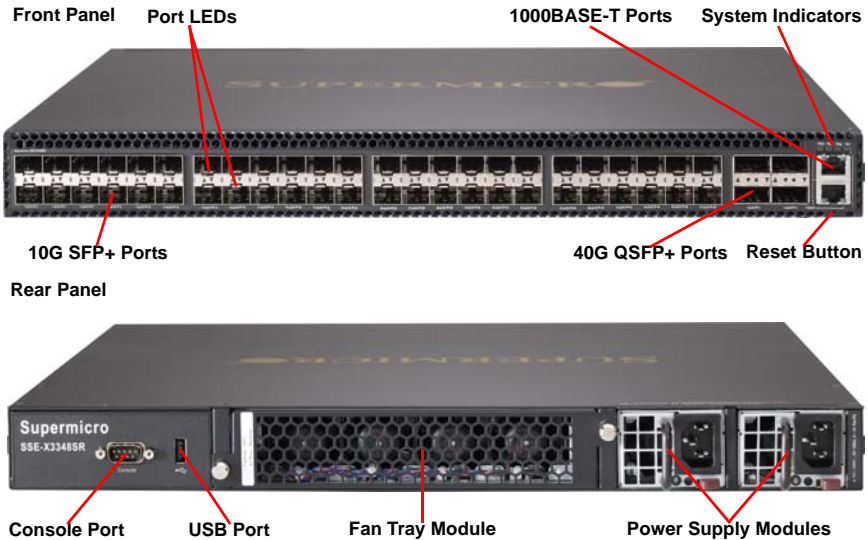
The switch supports a full set of Layer 2 switching, data center bridging, and Layer 3 routing features. The switch can be deployed as a top-of-rack (TOR) or distributed spine switch to form a network fabric that can reduce infrastructure expenses and power consumption in the data center. This network fabric can be used to interconnect tens of thousands of servers delivering cloud computing services.

The SSE-X3348S switch provides front-to-back (F2B) airflow cooling. The companion product, SSE-X3348SR, provides a “reverse” airflow – back-to-front (B2F). The airflow options enable flexibility on rack deployment with servers or other switches, allowing cool aisles to be maintained without creating “hot loops.”

## 1-2 Key Hardware Components

The switch consists of several key hardware components (Figure 1-1). This manual describes each specific component, or related components, together with their installation requirements and procedures in each chapter. To understand each component in detail, refer to the relevant section.

Figure 1-1. Front and Rear Panels



### 10G SFP+ Slots

The switch contains 48 Small Form Factor Pluggable Plus (SFP+) transceiver slots that support 10G Ethernet SFP+ transceivers, or Gigabit Ethernet SFP transceivers. For more information, see [Section 5-5: "How to Connect to SFP/SFP+ Fiber Optic Ports" on page 5-9](#).

### 40G QSFP+ Slots

The switch contains four Quad Small Form Factor Pluggable Plus (QSFP+) transceiver slots that operate up to 40 Gbps full duplex. For more information, see [Section 5-6: "How to Connect to QSFP+ Fiber Optic Ports" on page 5-11](#).

### 1000BASE-T RJ-45 Ports

The switch includes two 1000BASE-T RJ-45 ports. For more information, see [Section 5-4: "How to Connect to Twisted-Pair Copper Ports" on page 5-5](#).

## Reset Button

Pressing the reset button on the front panel causes the switch to preform a hard reset. For more information, see ["Section 7-3: "How to Reset the Switch" on page 7-4.](#)

## System LEDs

For information on system status LED indicators, see [Section 7-1: "Understanding the System Status LEDs" on page 7-1.](#)

## Port LEDs

For information on port status LED indicators, see [Section 5-2: "Understanding the Port Status LEDs" on page 5-2.](#)

## Console Port

The DB-9 connector on the rear panel labeled "Console" provides an out-of-band serial connection to a terminal or a PC running terminal emulation software. The port can be used for performing switch monitoring and configuration. For more information, see [Section 7-2: "How to Connect to the Console Port" on page 7-2.](#)

## USB Port

The USB port on the switch rear panel is reserved for future use.

## Fan Tray Module

The fan tray module provides air cooling for the switch system. For more information, see [Section : "Switch Cooling Requirements" on page 4-2.](#)

## Power Supply Modules

The switch supports dual hot-swappable AC power supply units (PSUs). You can install up to two PSUs with matching airflow direction in the switch. For more information on the switch power supplies, how to intall them, and how to power-on the switch, see [Section 4-3: "Switch Installation Tasks" on page 4-4.](#)

## Notes

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# Chapter 2

## Standardized Warning Statements

### 2-1 About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our web site at [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm).

#### Warning Definition



#### Warning!

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

#### 警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危險。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

## Warnung

### WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

### INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

### IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

### תקנתן הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

تحذير! هذا الرمز يعني خطر انك في حالة يمكن أن تتسبب في اصابة جسدية .  
قبل أن تعمل على أي معدات، كن على علم بالمخاطر الناجمة عن الدوائر  
الكهربائية

وكن على دراية بالممارسات الوقائية لمنع وقوع أي حوادث  
استخدم رقم البيان المنصوص في نهاية كل تحذير للعثور ترجمتها

안전을 위한 주의사항

경고!



이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험 요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

### **BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

### **Installation Instructions**



#### **Warning!**

Read the installation instructions before connecting the system to the power source.

#### **設置手順書**

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前，请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

#### **Warnung**

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

#### **¡Advertencia!**

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

#### **Attention**

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة  
시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

### Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

### Circuit Breaker



#### Warning!

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が 250 V、20 A を超えないことを確認下さい。

#### 警告

此产品的短路（过载电流）保护由建筑物的供电系统提供，确保短路保护设备的额定电流不大于 250V, 20A。

#### 警告

此產品的短路（過載電流）保護由建築物的供電系統提供，確保短路保護設備的額定電流不大於 250V, 20A。

#### Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

#### ¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

#### Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי  
המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250 V, 20 A

هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة التي تم تثبيتها في  
المبنى  
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من: 20A, 250V

경고!

이 제품은 전원의 단락 (과전류) 방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

### Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw elektrische installatie. Controleer of het beveiligde apparaat niet groter gedimensioneerd is dan 220V, 20A.

### Power Disconnection Warning



#### Warning!

The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components.

#### 電源切斷の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセスするには、

システムの電源はすべてのソースから切斷され、電源コードは電源モジュールから取り外す必要があります。

#### 警告

在你打开机箱并安装或移除内部器件前，必須將系統完全斷電，并移除電源線。

#### 警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

### Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

**¡Advertencia!**

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

**Attention**

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du châssis pour installer ou enlever des composants de système.

**אזהרה מפני ניתוק חשמלי**

**!אזהרה!**

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים.

يجب فصل النظام من جميع مصادر الطاقة وإزالة سلك الكهرباء من وحدة امداد الطاقة قبل

الوصول إلى المناطق الداخلية للهيكल لتثبيت أو إزالة مكونات الجهاز

경고 !

시스템에 부품들을 장착하거나 제거하기 위해서는 채시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

**Waarschuwing**

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen.

**Equipment Installation**



**Warning!**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

**機器の設置**

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

**警告**

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

**警告**

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

**Warnung**

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

**¡Advertencia!**

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

**Attention**

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

**אזהרה!**

צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.

يجب أن يسمح فقط للموظفين المؤهلين والمدربين لتثبيت واستبدال أو خدمة هذا الجهاز  
경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

**Waarschuwing**

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

**Restricted Area**



**Warning!**

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

**アクセス制限区域**

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

**警告**

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

**警告**

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

### Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

### ¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

### Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

### אזור עם גישה מוגבלת

#### אזהרה!

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת כלי אבטחה בלבד (מפתח, מנעול וכד').

تم تخصيص هذه الوحدة لتركيبها في مناطق محظورة .  
يمكن الوصول إلى منطقة محظورة فقط من خلال استخدام أداة خاصة،  
قفل ومفتاح أو أي وسيلة أخرى للأمان

경고 !

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

### Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

## Battery Handling



### Warning!

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

### 電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

### 警告

電池更換不當會有爆炸危險。請只使用同類電池或製造商推薦的功能相當的電池更換原有電池。請按製造商的說明處理廢舊電池。

### 警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

### Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

### Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

### ¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

### אזהרה!

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة استبدال البطارية بطريقة غير صحيحة فعليك استبدال البطارية

فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة تخلص من البطاريات المستعملة وفقا لتعليمات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

### Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

## Redundant Power Supplies



### Warning!

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

### 冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

### 警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

### 警告

此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

### Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein Strom zugeführt wird, müssen alle Verbindungen entfernt werden.

### ¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

### Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

**אם קיים יותר מספק אחד**

**אזהרה!**

ליחידה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.



قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة.  
يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء

경고 !

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

### Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken

### Backplane Voltage



#### Warning!

Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際にはご注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

### Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

### ¡Advertencia!

Quando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

### Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

מתח בפנל האחורי

אזהרה !

קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך העבודה.

هناك خطر من التيار الكهربائي أو الطاقة الموجودة على اللوحة  
عندما يكون النظام يعمل كن حذرا عند خدمة هذا الجهاز

경고 !

시스템이 동작 중일 때 후면판 (Backplane) 에는 위험한 전압이나 에너지가 발생 합니다. 서비스 작업 시 주의하십시오 .

### Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

## Comply with Local and National Electrical Codes



### Warning!

Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

### Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

### ¡Advertencia!

La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

### Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

## תיאום חוקי החשמל הארצי

אזהרה !

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والوطنية المتعلقة  
بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

### Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

## Product Disposal



### Warning!

Ultimate disposal of this product should be handled according to all national laws and regulations.

### 製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

### 警告

本产品的废弃处理应根据所有国家的法律和规章进行。

### 警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

### Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

### ¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

### Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

## סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

### Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

## Hot Swap Fan Warning



### Warning!

The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

### ファン・ホットスワップの警告

シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

### 警告

当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇。

### 警告

當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

### Warnung

Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

### ¡Advertencia!

Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

### Attention

Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

! אזהרה

כאשר מסירים את חלקי המאוורר מהמארו, יתכן והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

من الممكن أن المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고 !

새시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조립품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

### Waarschuwing

Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

## Power Cable and AC Adapter



### Warning!

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by Supermicro only.

### 電源コードと AC アダプター

製品を設置する場合、提供または指定された接続ケーブル、電源コードと AC アダプターを使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。電気用品安全法は、UL または CSA 認定のケーブル (UL/CSE マークがコードに表記) を Supermicro が指定する製品以外に使用することを禁止しています。

### 警告

安装此产品时,请使用本身提供的或指定的连接线,电源线和电源适配器.使用其它线材或适配器可能会引起故障或火灾。除了 Supermicro 所指定的产品,电气用品和材料安全法律规定禁止使用未经 UL 或 CSA 认证的线材。(线材上会显示 UL/CSA 符号)。

### 警告

安裝此產品時,請使用本身提供的或指定的連接線,電源線和電源適配器.使用其它線材或適配器可能會引起故障或火災。除了 Supermicro 所指定的產品,電氣用品和材料安全法律規定禁止使用未經 UL 或 CSA 認證的線材。(線材上會顯示 UL/CSA 符號)。

### Warnung

Bei der Installation des Produkts, die zur Verfügung gestellten oder benannt Anschlusskabel, Stromkabel und Netzteile. Verwendung anderer Kabel und Adapter kann zu einer Fehlfunktion oder ein Brand entstehen. Elektrische Geräte und Material Safety Law verbietet die Verwendung von UL-oder CSA-zertifizierte Kabel, UL oder CSA auf der Code für alle anderen elektrischen Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

### ¡Advertencia!

Al instalar el producto, utilice los cables de conexión previstos o designados, los cables y adaptadores de CA. La utilización de otros cables y adaptadores podría ocasionar un mal funcionamiento o un incendio. Aparatos Eléctricos y la Ley de Seguridad del Material prohíbe el uso de UL o CSA cables certificados que tienen UL o CSA se muestra en el código de otros dispositivos eléctricos que los productos designados por Supermicro solamente.

### Attention

Lors de l'installation du produit, utilisez les bables de connection fournis ou désigné. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et de loi sur la sécurité Matériel interdit l'utilisation de UL ou CSA câbles certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

### חשמליים ומתאמי AC

אזהרה!

כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים AC אשר נועדו וסופקו לשם כך. שימוש בכל כבל או מתאם אחר יכול לגרום לתקלה או קצר חשמלי. על פי חוקי שימוש במכשירי חשמל וחוקי בטיחות, קיים איסור להשתמש בכבלים המוסמכים ב- UL או ב- CSA (כשאר מופיע עליהם קוד של UL/CSA) עבור כל מוצר חשמלי אחר שלא צוין על ידי סופרקמיקרו בלבד.

عند تركيب الجهاز يجب استخدام كابلات التوصيل، والكابلات الكهربائية ومحولات التيار المتردد التي . أن استخدام أي كابلات ومحولات أخرى يتسبب في حدوث عطل أو حريق. تم توفيرها لك مع المنتج الأجهزة الكهربائية ومواد قانون السلامة يحظر استخدام الكابلات UL أو CSA معتمدة من قبل لأي أجهزة كهربائية أخرى غير المنتجات المعينة من قبل Supermicro (التي تحمل علامة UL/CSA)

### 경고 !

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC 어댑터를 사용해야 합니다. 그 밖의 다른 케이블들이나 어댑터들은 고장 또는 화재의 원인이 될 수 있습니다. 전기용품안전법 (Electrical Appliance and Material Safety Law) 은 슈퍼마이크로에서 지정한 제품들 외에는 그 밖의 다른 전기 장치들을 위한 UL 또는 CSA 에서 인증한 케이블 (전선 위에 UL/CSA 가 표시) 들의 사용을 금지합니다.

### **Waarschuwing**

Bij het installeren van het product, gebruik de meegeleverde of aangewezen kabels, stroomkabels en adapters. Het gebruik van andere kabels en adapters kan leiden tot een storing of een brand. Elektrisch apparaat en veiligheidsinformatiebladen wet verbiedt het gebruik van UL of CSA gecertificeerde kabels die UL of CSA die op de code voor andere elektrische apparaten dan de producten die door Supermicro alleen.

## Notes



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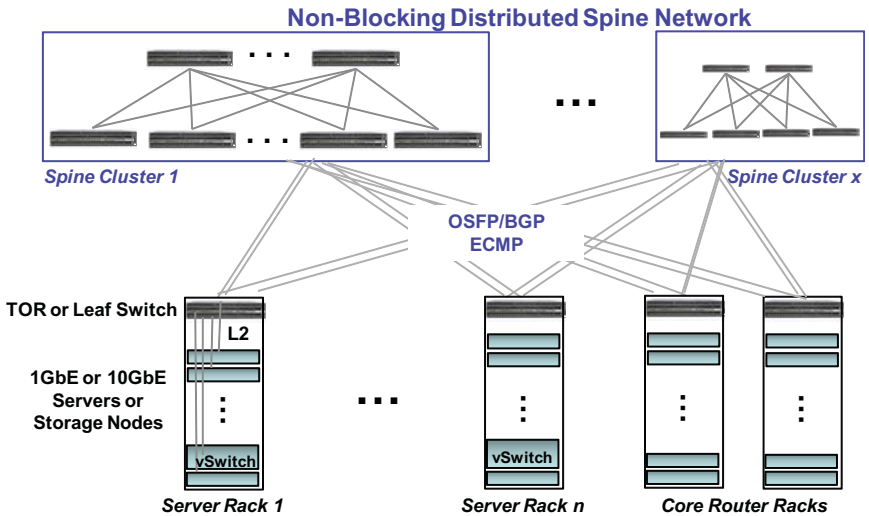
# Chapter 3

## Network Planning

### 3-1 Data Center Deployment

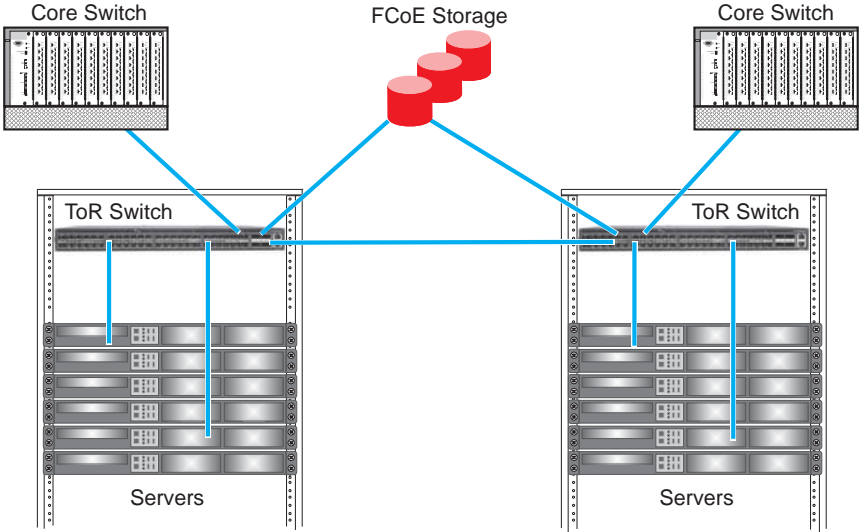
The SSE-X3348S/SSE-X3348SR switch is designed for use in high-availability data center environments with a high port density (Figure 3-1). The switch includes redundant, hot-swappable, load-sharing AC PSUs, a fan tray with redundant fans, and port-to-power and power-to-port and power-to-port airflow direction options. Meeting the network scaling requirements of enterprise and cloud data centers, the switch can be deployed as a top-of-rack switch or as part of a distributed spine network, providing full line-rate switching at Layer 2 or Layer 3 across all ports.

Figure 3-1. Cloud Data Center Deployment



In many data center configurations, Ethernet connections link servers and data networks, and Fibre Channel connections link servers to storage networks. This switch enables the creation of a converged network, which employs loss-less Ethernet connections between FCOE storage, servers, and other data network switches (Figure 3-2).

**Figure 3-2. Converged Ethernet Data Center Deployment**

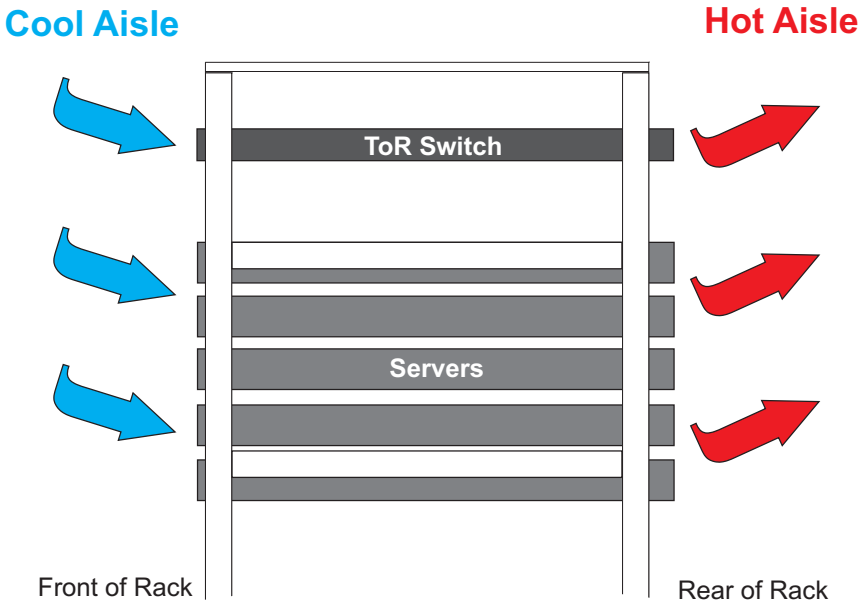


## 3-2 Rack Cooling

The SSE-X3348S/SSE-X3348SR top-of-rack switch is a high-performance, high-density unit that generates a substantial amount of heat. When mounted in a rack with other equipment, it is important that the switch has the same airflow direction to avoid “hot loops” in the data center aisles. Hot loops increase cooling requirements since warm air is drawn into rack devices instead of cool air.

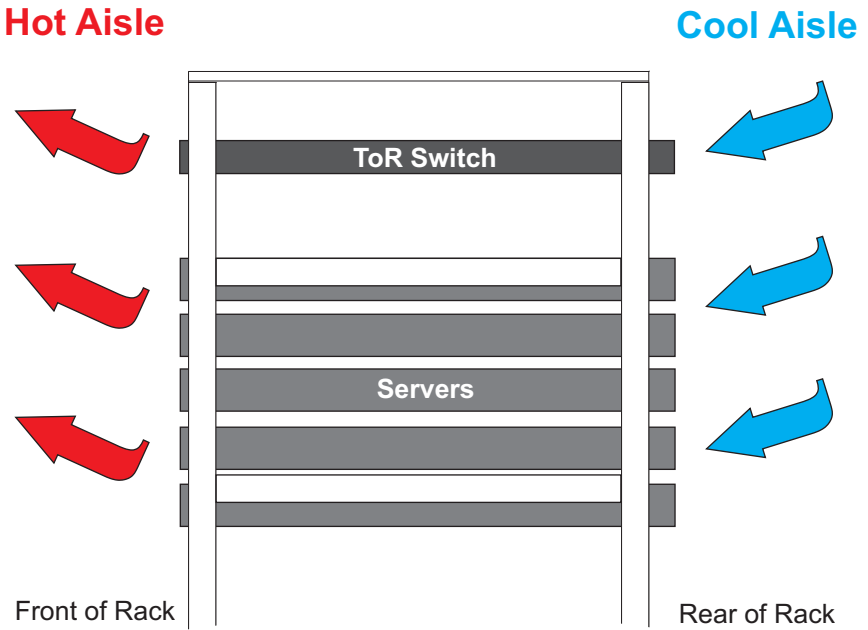
Most rack-mounted servers draw cool air from the front and expel hot air at the rear. The SSE-X3348S top-of-rack switch includes power supply units and a fan tray module that have a front-to-back (F2B) airflow direction that maintains cool aisles in the data center (Figure 3-3).

Figure 3-3. F2B Airflow Cooling



When mounted in a rack with other network equipment that may have a back-to-front (B2F) airflow direction, the SSE-X3348SR top-of-rack switch includes power supply and fan tray modules that reverse the airflow direction through the switch (Figure 3-4). This enables various deployment options for the switch in the data center.

Figure 3-4. B2F Airflow Cooling



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# Chapter 4

## Installing the Switch

This chapter covers the installation of the SSE-X3348S/SSE-X3348SR switch.

### 4-1 Package Contents

After unpacking the switch, check the contents to be sure you have received all the additional accessories.

- Bracket Mounting Kit containing two brackets and eight screws for attaching the brackets to the switch
- Power cord (two)
- Console cable (DB-9 to DB-9)

### 4-2 Switch Chassis

The SSE-X3348S/SSE-X3348SR switch is designed to be installed in a standard 19-inch equipment rack. Before continuing with switch installation, first review the general guidelines and switch cooling requirements in this chapter.

#### General Installation Guidelines

Be sure to follow the guidelines below when choosing a location.

- The installation location should:
  - be able to maintain its temperature within 0 to 47 °C (32 to 126 °F) and its humidity within 5% to 95%, non-condensing.
  - provide adequate space (approximately five centimeters or two inches) on all sides for proper air flow.
  - be accessible for installing, cabling and maintaining the device.
  - allow the status LEDs to be clearly visible.
- Make sure twisted-pair cable is always routed away from power lines, fluorescent lighting fixtures and other sources of electrical interference, such as radios and transmitters.
- Make sure that the unit is connected to a separate grounded power outlet within 2 m (6.6 feet) of each device and is powered from an independent circuit breaker. As with any equipment, using a filter or surge suppressor is recommended. Verify that the external power requirements for the switch can be met as listed under "[Power Supply Modules](#)" on page 4-10.

## How to Install the Switch in a Rack

When rack mounting the switch, pay particular attention to the following factors:

- **Rack Types:** You can use any standard EIA 19-inch equipment rack with either two or four posts. The bracket hole pattern should be spaced 1U (1.75 in. or 4.45 cm) apart.
- **Rack Stability:** Whenever possible, secure the rack to the building ceiling or floor, particularly if you are located in a region where earthquakes are common.
- **Rack Planning:** When installing equipment in a rack, first plan how units can be best arranged. Try to always mount the heaviest equipment at the bottom of the rack.
- **Temperature:** Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range. See "[Switch Cooling Requirements](#)" on page 4-2.
- **Mechanical Loading:** Do not place any equipment on top of a rack-mounted unit.
- **Circuit Overloading:** Be sure that the supply circuit to the rack assembly is not overloaded.
- **Grounding:** Rack-mounted equipment should be properly grounded.

### *Rack-Mounting Items*

Before you start to rack-mount the switch, be sure to have the following items available:

- Four mounting screws for each device you plan to install in a rack—these are not included. Be sure to use the rack mounting screws that are supplied with the rack.
- A screwdriver (Phillips or flathead, depending on the type of screws used).

### *Rack-Mount Procedure*

The switch can be mounted in a rack using the included mounting brackets or optional mounting rails. Due to the weight of the switch, it is strongly recommended that it be supported by a rack shelf or by using Supermicro mounting rails (part number CSE-PT052L).

## Switch Cooling Requirements

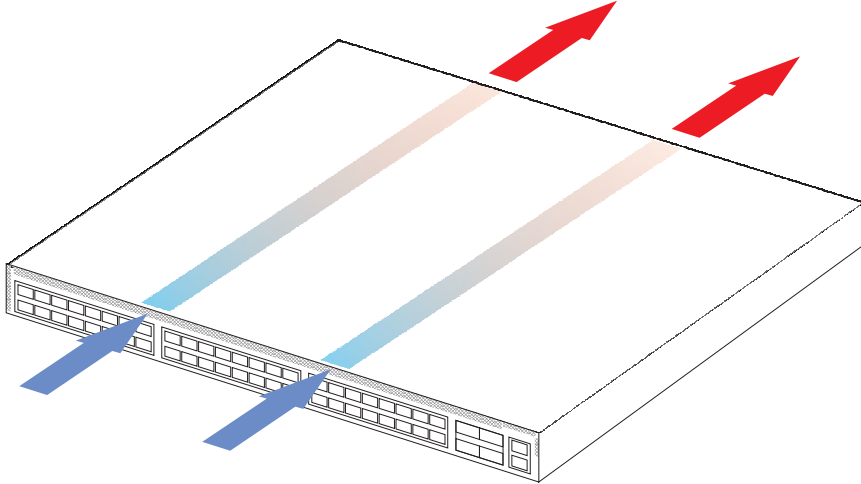
Wherever the switch is located, be sure to pay close attention to switch cooling requirements. The location should be well ventilated and provide unrestricted air flow at the front, back, and sides of the switch. If the air flow is insufficient, it may cause the switch to overheat and possibly fail.

The switch includes a fan tray module located in the rear of the switch. The switch may have either a front-to-back (F2B) airflow direction (SSE-X3348S) or a back-to-front (B2F) airflow direction (SSE-X3348SR). The switch's plug-in power supply modules also include a fan, which can be either F2B or B2F airflow direction. For proper switch cooling, all installed modules must have a matching airflow direction.

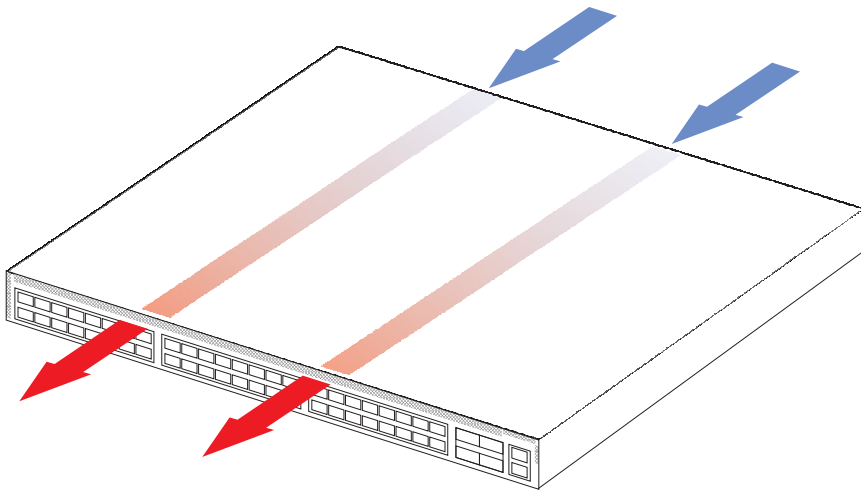
[Figure 4-1](#) shows the airflow types through the switch.

Figure 4-1. Switch Cooling

F2B Airflow – SSE-X3348S



B2F Airflow – SSE-X3348SR



### ***Rack Cooling***

When mounting the switch in an enclosed rack or cabinet, be sure to check the following guidelines to prevent overheating:

- Make sure that enough cool air can flow into the enclosure for the equipment it contains.
- Check that the rack or cabinet allows the hot air to exit the enclosure (normally from the top) without circulating back into equipment.
- If the enclosure has sides or doors with ventilation holes, make sure they are not blocked by cables or other obstructions.
- Route cables within the rack or cabinet to maximize the air flow.
- When possible, do not completely fill the rack or cabinet with equipment, allow some unused space within the enclosure for better air flow.

### ***Fan Tray Module***

The fan tray module is an important part of the switch air cooling system. A fan tray module must be installed in the switch at all times. If a fan should fail, the switch must be replaced as soon as possible.

**CAUTION:** The switch includes plug-in power supply and fan tray modules that are installed into its chassis. All installed modules must have a matching airflow direction. That is, all modules must have a front-to-back (F2B) airflow direction, or all modules must have a back-to-front (B2F) airflow direction. The airflow direction of PSUs and fan trays is indicated by labels on the modules.

The fan tray, located in the rear of the switch, includes four fixed fans and supports fan speed control. The fan speed is dynamically controlled as a function of temperature: the higher the internal temperature, the faster the speed of the fans. The fan tray module does not include LED indicators.

## **4-3 Switch Installation Tasks**

Follow these tasks to install the SSE-X3348S switch in your network. For full details on each task, go to the relevant chapter or section by clicking on the link.

**CAUTION:** Before installing your switch, first review all the safety statements and guidelines in the Regulatory and Safety Information document.

### **Task 1: Unpack package and check contents**

Unpack your switch and check the package contents to be sure you have received all the items. See [Section 4-1: "Package Contents" on page 4-1](#).

### **Task 2: Install the Chassis**

The switch is designed to be installed in a standard 19-inch equipment rack. Plan your rack installation and install the switch chassis in the rack. Be sure to take into account switch cooling requirements.



The switch can be mounted in a rack using the included mounting brackets or optional mounting rails. Due to the weight of the switch, it is strongly recommended that it be supported by a rack shelf or by using Supermicro mounting rails (part number CSE-PT052L).

For detailed instructions on rack mounting the switch, refer to the *Quick Installation Guide*.

For general rack installation information, see the chapter [Section 4-2: "Switch Chassis" on page 4-1](#).

### **Task 3: Install Power Modules and Power On**

Install power modules, connect the power cord, then power on. The switch supports up to two PSUs that have a matching airflow direction as the installed fan tray ([Figure 4-2](#)).

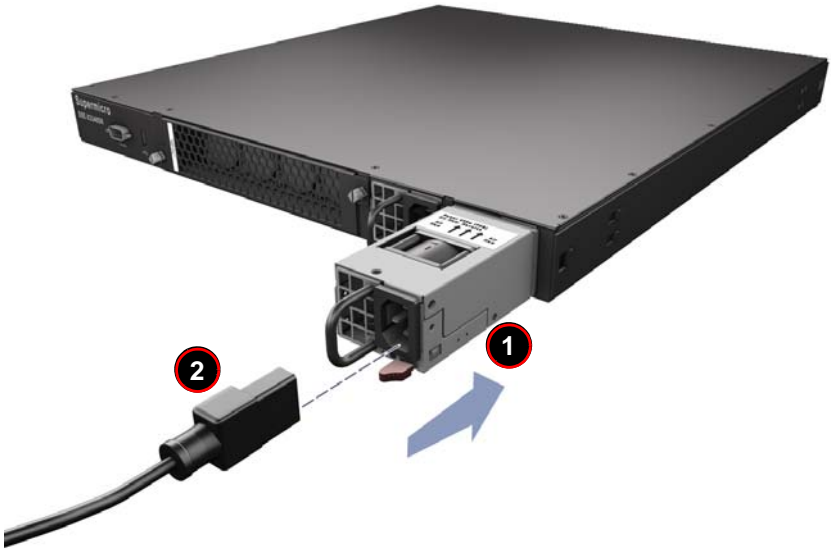
#### ***Installing the Power Modules and Powering On***

1. If not already present, install one or two universal AC power modules in the switch.
2. Connect an external AC power source to the modules.

**CAUTION:** The switch includes plug-in power supply and fan tray modules that are installed into its chassis. All installed modules must have a matching airflow direction. That is, all modules must have a front-to-back (F2B) airflow direction, or all modules must have a back-to-front (B2F) airflow direction. The airflow direction of PSUs and fan trays is indicated by labels on the modules.

Go to the chapter [Section 4-4: "Power and Grounding" on page 4-10](#).

Figure 4-2. Connecting AC Power



### Task 4: Verify Switch Operation

Verify basic switch operation by checking the system LEDs (Figure 4-3).

When operating normally, the PSU1/PSU2, Diag, and Fan LEDs should all be on green. If any of the LEDs are on amber, see [Section 8-1: "Diagnosing LED Indicators" on page 8-1](#).

Go to the section [Section 7-1: "Understanding the System Status LEDs" on page 7-1](#).

Figure 4-3. System LEDs



## Task 5: Make Initial Configuration Changes

At this point you may need to make a few basic switch configuration changes before connecting to the network. It is suggested to connect to the switch console port to perform this task.

The serial port's configuration requirements are as follows: 9600 bps, 8 characters, no parity, one stop bit, 8 data bits, and no flow control.

You can log in to the command-line interface (CLI) using default settings: User "ADMIN", password "ADMIN".

Go to [Section 7-2: "How to Connect to the Console Port" on page 7-2](#).

**Figure 4-4. Console Port**



For information on initial switch configuration refer to the *1/10 and 10-Gigabit Layer 2/3 Ethernet Switches User's Manual*.

## Task 6: Install Transceivers and Connect Cables

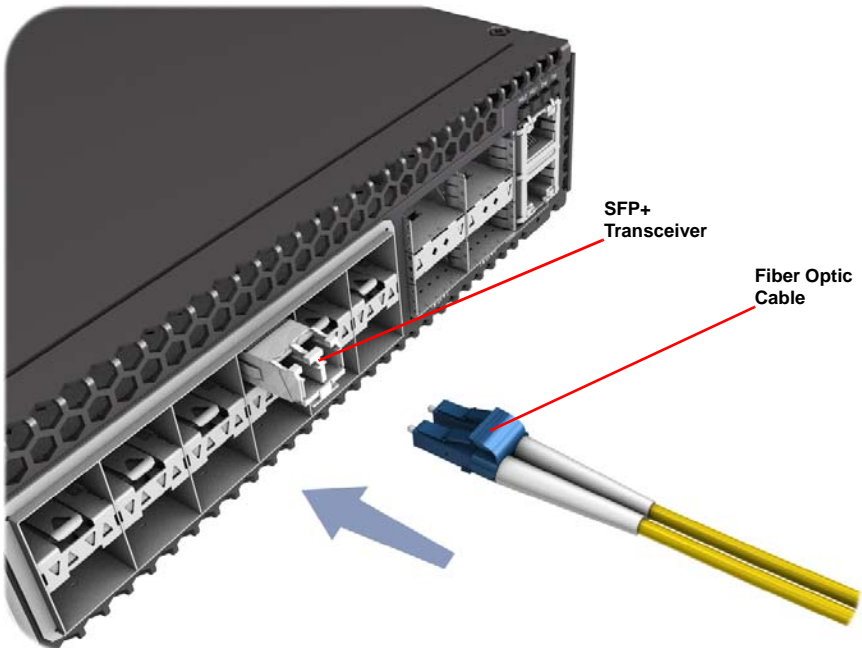
Connect the network cables to their respective port interfaces:

- Connect DAC cables to the SFP+/QSFP+ slots, or first install SFP+/QSFP+ transceivers and then connect fiber optic cabling to the transceiver ports.
- For RJ-45 ports, connect using 100-ohm Category 5, 5e or better cable for 1000BASE-T connections.

As connections are made, check the port status LEDs to be sure the links are valid.

Go to [Chapter 5](#) for further details.

**Figure 4-5. Making a Connection to an SFP+ Port**



## 4-4 Power and Grounding

This section focuses on the switch power supplies, how to install them, and how to power-on the switch. Connecting the switch to ground is also covered.

### Power Supply Modules

The switch supports hot-swappable power supply units (PSUs). You can install up to two PSUs with matching airflow direction in the switch. The PSUs operate in a load-sharing mode and provide 1+1 redundancy.

**NOTE:** 1+1 redundancy is a system where a switch power supply is backed up by another switch power supply in a load-sharing mode. If one power supply fails, the other power supply takes over the full load of the switch.

**CAUTION:** The switch includes plug-in power supply and fan tray modules that are installed into its chassis. All installed modules must have a matching airflow direction. That is either all modules must have a front-to-back (F2B) airflow direction, or all modules must have a back-to-front (B2F) airflow direction. The airflow direction of PSUs and fan trays is indicated by labels on the modules.

The AC Power Supply Modules require power from an external AC power supply that can provide 100 to 240 VAC, 50-60 Hz. A standard AC power socket is located on the rear panel of the PSU. The power socket is for the AC power cord.

**WARNING:** Disconnect the power cord from all power sources to completely remove power from the device.

**WARNING:** If the installation requires a different power cord than the one supplied with the device, make sure you use a power cord displaying the mark of the safety agency that defines the regulations for power cords in your country. The mark is your assurance that the power cord can be used safely with the device.

Figure 4-6. AC Power Supply Module

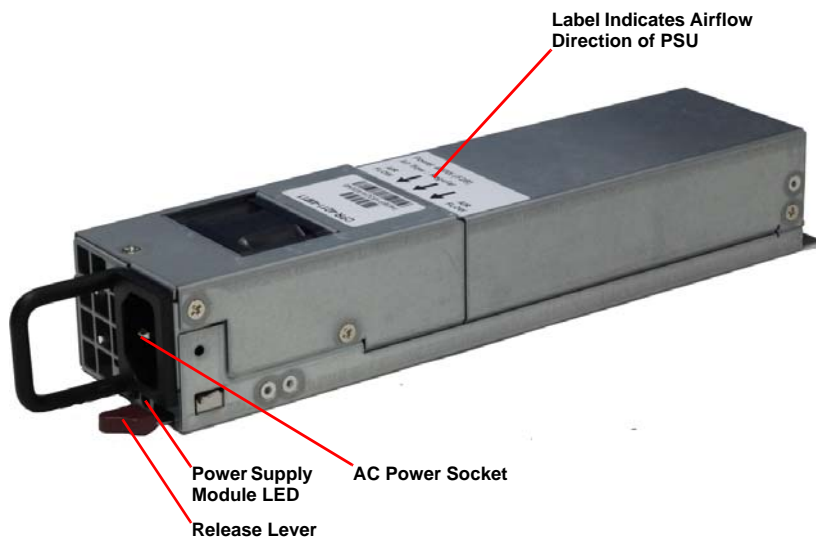


Table 4-1. AC Power Supply Module Specifications

Item	Description
AC Input	100-240 VAC, 50-60 Hz, 6-3 A
DC Output	5 VDC @ 3 A 12 VDC @ 33 A
Power Supply	100-240 VAC, 50-60 Hz, auto-sensing; hot pluggable 400 Watts @ 220V/110V per module
Power Consumption	325.9 Watts maximum
Maximum Current	6 A @ 100 VAC 3 A @ 240 VAC
Size	W x D x H: 220 x 54.5 x 40.25 mm (8.66 x 2.15 x 1.58 inches)

The PSU also includes an AC power status LED. This LED is described in the following table.

Table 4-2. Power Supply Module LED

LED	Condition	Status
AC	Green	External AC power is connected to the module.
	Off	External power is not connected or has failed.

## Grounding the Chassis

The switch chassis must be connected to ground to ensure proper operation and to meet electromagnetic interference (EMI) and safety requirements.

The switch chassis is connected internally to 0 V, which is then grounded through an installed AC PSU when it is connected to a grounded AC power outlet by an AC power cord.

There are no grounding points on the switch that require a connection to a rack ground or other earth ground.

## How to Connect to AC Power

To supply AC power to the switch, first verify that the external AC power supply can provide 100 to 240 VAC, 50-60 Hz, 3 A minimum.

**NOTE:** For electrical safety purposes, please pay attention to the following warning notices, printed on the switch unit.



### CAUTION

CAUTION: TO DISCONNECT POWER, REMOVE BOTH POWER CORDS FROM UNIT.

ATTENTION: DÉBRANCHER LES DEUX CORDONS D'ALIMENTATION POUR DÉCONNECTER L'UNITÉ DU SECTEUR.

注意：電源を切る場合は、二本の電源コードを本装置から抜いてください。

注意：如要切断电源，请将两根电源线都从机器上拔掉。

当心：如要切断电源，请将两根电源线都从机器上拔掉。

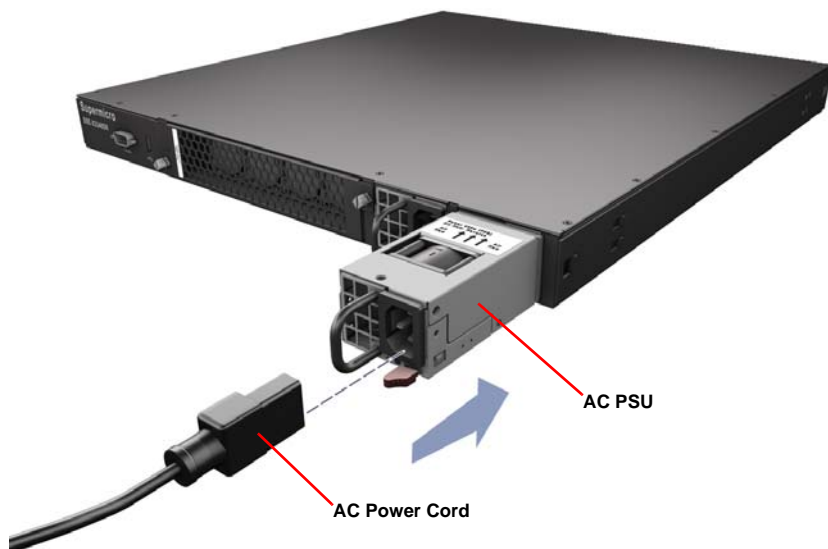
▲ 100–240V~, 50–60Hz, 6–3A Per PS



### **Connecting the Switch to a Power Source**

1. If not already present, install one or two AC PSU modules. Slide them into the PSU slots at the rear of the switch until they click into place. (Push the red release lever to remove a module from the switch.)

**Table 4-3. AC PSU and Power Socket**



2. Plug the power cord into a grounded, 3-pin, AC power source.

**NOTE:** For international use, you may need to change the AC power cord. You must use a cord set that has been approved for the socket type in your country.

3. Insert the plug on the other end of the power cord directly into the socket on the AC PSU.
4. Check the LED indicators on the PSU and switch front panel as the unit is powered on to verify that power is being received. If not, recheck the PSU and power cord connections at the AC supply source and PSU.
5. If you have installed a second PSU, repeat steps 2 to 4.

## Notes

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# Chapter 5

## Making Network Connections

This chapter focuses on making connections to switch network interfaces, including how to install optional transceivers, and details on network cable specifications.

The SSE-X3348S/SSE-X3348SR switch features 48 10G SFP+ slots, four 40G QSFP+ transceiver slots, and two 1G RJ-45 ports. The sections that follow describe these interfaces.

### 5-1 Cable Labeling and Connection Records

When planning a network installation, it is essential to label the opposing ends of cables and to record where each cable is connected. Doing so will enable you to easily locate inter-connected devices, isolate faults and change your topology without need for unnecessary time consumption.

To best manage the physical implementations of your network, follow these guidelines:

- Clearly label the opposing ends of each cable.
- Using your building's floor plans, draw a map of the location of all network-connected equipment. For each piece of equipment, identify the devices to which it is connected.
- Note the length of each cable and the maximum cable length supported by the switch ports.
- For ease of understanding, use a location-based key when assigning prefixes to your cable labeling.
- Use sequential numbers for cables that originate from the same equipment.
- Differentiate between racks by naming accordingly.
- Label each separate piece of equipment.
- Display a copy of your equipment map, including keys to all abbreviations at each equipment rack.

## 5-2 Understanding the Port Status LEDs

The switch includes LED indicators for each port to indicate link status and network activity. The port LEDs are shown below and described in the following table.

Figure 5-1. Port Status LEDs

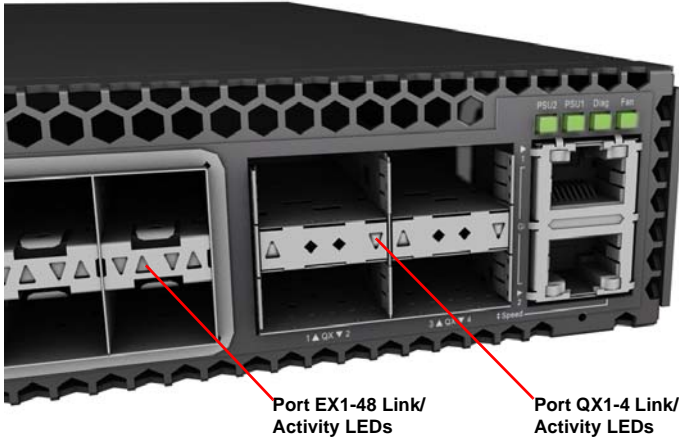


Table 5-1. Port Status LEDs

LED	Condition	Status
<b>10G SFP+ Ports (EX1-48)</b>		
Link/Activity	On/Flashing Green	Port has a valid 10G link. Flashing indicates activity on the port.
	On/Flashing Amber	Port has a valid 1G link. Flashing indicates activity on the port.
	Off	The link is down.
<b>40G QSFP+ Ports (QX1-4)</b>		
Link/Activity	On/Flashing Green	Port has a valid 40G link. Flashing indicates activity on the port.
	Off	The link is down.
<b>1G RJ-45 Ports (G1-2)</b>		
Link/Speed	On Green	Port has a valid 1000 Mbps link.
	On Amber	Port has a valid 10/100 Mbps link.
	Off	The link is down.
Activity	Flashing Green	Flashing indicates activity on the port.

## 5-3 How to Install an SFP/SFP+/QSFP+ Transceiver

The switch provides slots for optional SFP, SFP+, and QSFP+ transceivers. The supported transceiver types are listed below:

- 40 Gbps Ethernet QSFP+ transceivers
  - 40GBASE-CR4
  - 40GBASE-SR4
- 10 Gbps Ethernet SFP+ transceivers
  - 10GBASE-CR
  - 10GBASE-SR
- 1000 Mbps Ethernet SFP transceivers
  - 1000BASE-SX
  - 1000BASE-LX

**NOTE:** SFP/SFP+/QSFP+ transceivers are hot-swappable. The switch does not need to be powered off before installing or removing a transceiver.

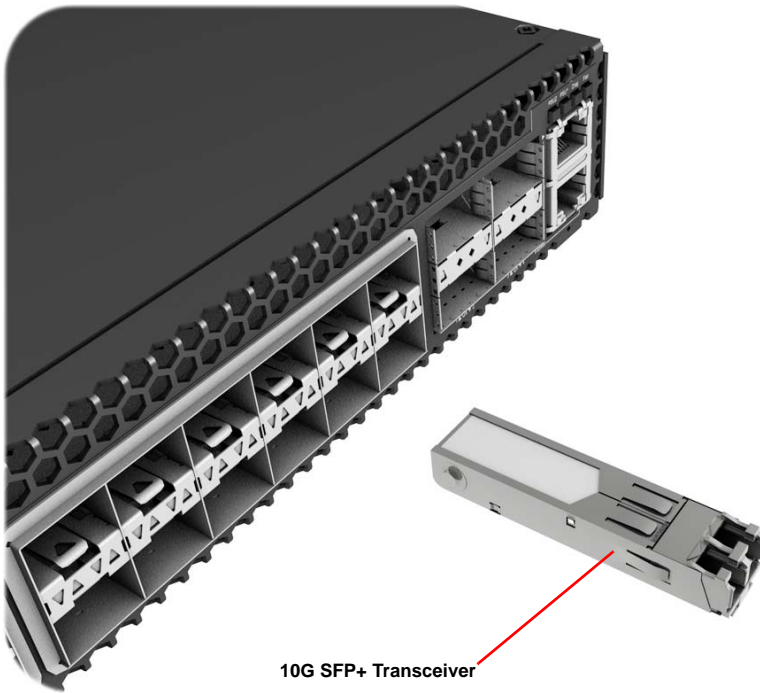
**NOTE:** SFP/SFP+/QSFP+ transceivers are not provided in the switch package.

### *Installing an SFP/SFP+/QSFP+ Transceiver*

1. Consider network and cabling requirements to select an appropriate transceiver type that is also compatible with the switch transceiver support.
2. If the SFP/SFP+/QSFP+ slot is covered with a rubber protective cap, remove the cap and keep it for later replacement.
3. Insert the transceiver with the optical connector facing outward and the slot connector facing down. Note that SFP/SFP+/QSFP+ transceivers are keyed so they can only be installed in the correct orientation.
4. Slide the transceiver into the slot until it clicks into place. If you do not immediately connect a cable to the port, use a rubber protective cap to keep the transceiver optics clean.

**NOTE:** To uninstall a transceiver: First disconnect the network cable, then release and pull the wire bail to remove the transceiver from the slot.

**Figure 5-2. Inserting an SFP+ Transceiver into a Slot**



## 5-4 How to Connect to Twisted-Pair Copper Ports

The RJ-45 management port on the switch supports automatic MDI/MDI-X pinout configuration, so you can use standard straight-through twisted-pair cables to connect to any other network device (PCs, servers, switches, routers, or hubs).

The connection requires an unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable with RJ-45 connectors at both ends.

**Table 5-2.**

Cable Type	Maximum Cable Length	Connector
<b>1000BASE-T</b>		
Category 5, 5e, or 6 100-ohm UTP or STP	100 m (328 ft)	RJ-45
<b>100BASE-TX</b>		
Category 5 or better 100-ohm UTP or STP	100 m (328 ft)	RJ-45
<b>10BASE-T</b>		
Category 3 or better 100-ohm UTP	100 m (328 ft)	RJ-45

### Copper Cabling Guidelines

To ensure proper operation when installing the switch into a network, make sure that the current cables are suitable for 10BASE-T, 100BASE-TX, or 1000BASE-T, operation. Check the following criteria against the current network installation:

- Cable type: Un-shielded twisted pair (UTP) or shielded twisted pair (STP) cables with RJ-45 connectors; Category 5, 5e or better cable for 1000BASE-T connections, Category 5 or better for 100BASE-TX connections, and Category 3 or better for 10BASE-T connections
- Protection from radio frequency interference emissions
- Electrical surge suppression
- Separation of electrical wires (switch related or other) and electromagnetic fields from data based network wiring
- Safe connections with no damaged cables, connectors or shields

## 10/100BASE-TX Pin Assignments

All 100BASE-TX RJ-45 ports support automatic MDI/MDI-X operation, so you can use straight-through or crossover cables for all network connections to PCs, switches, or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3, and 6 at the other end of the cable.

Figure 5-3. RJ-45 Connector

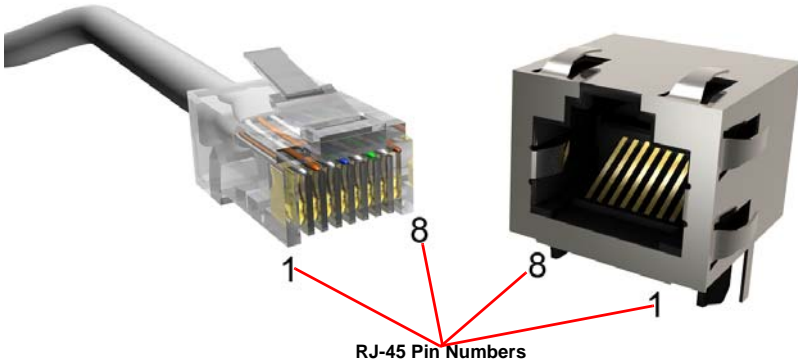


Table 5-3. 10/100BASE-TX MDI and MDI-X Port Pinouts

Pin	MDI Signal Name <sup>a</sup>	MDI-X Signal Name
1	Transmit Data plus (TD+)	Receive Data plus (RD+)
2	Transmit Data minus (TD-)	Receive Data minus (RD-)
3	Receive Data plus (RD+)	Transmit Data plus (TD+)
6	Receive Data minus (RD-)	Transmit Data minus (TD-)
4,5,7,8	Not used	Not used

- a. The "+" and "-" signs represent the polarity of the wires that make up each wire pair.



## 1000BASE-T Pin Assignments

All 1000BASE-T ports support automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs, servers, or switches.

The table below shows the 1000BASE-T MDI and MDI-X port pinouts. These ports require that all four pairs of wires be connected. Note that for 1000BASE-T operation, all four pairs of wires are used for both transmit and receive.

**Table 5-4. 1000BASE-T MDI and MDI-X Port Pinouts**

Pin	MDI Signal Name	MDI-X Signal Name
1	Bi-directional Pair A Plus (BI_DA+)	Bi-directional Pair B Plus (BI_DB+)
2	Bi-directional Pair A Minus (BI_DA-)	Bi-directional Pair B Minus (BI_DB-)
3	Bi-directional Pair B Plus (BI_DB+)	Bi-directional Pair A Plus (BI_DA+)
4	Bi-directional Pair C Plus (BI_DC+)	Bi-directional Pair D Plus (BI_DD+)
5	Bi-directional Pair C Minus (BI_DC-)	Bi-directional Pair D Minus (BI_DD-)
6	Bi-directional Pair B Minus (BI_DB-)	Bi-directional Pair A Minus (BI_DA-)
7	Bi-directional Pair D Plus (BI_DD+)	Bi-directional Pair C Plus (BI_DC+)
8	Bi-directional Pair D Minus (BI_DD-)	Bi-directional Pair C Minus (BI_DC-)

### *1000BASE-T Cable Requirements*

All Category 5 UTP cables that are used for 100BASE-TX connections should also work for 1000BASE-T, providing that all four wire pairs are connected. However, it is recommended that for all critical connections, or any new cable installations, Category 5e (enhanced Category 5) or Category 6 cable should be used. The Category 5e and 6 specifications include test parameters that are only recommendations for Category 5. Therefore, the first step in preparing existing Category 5 cabling for running 1000BASE-T is a simple test of the cable installation to be sure that it complies with the IEEE 802.3-2008 standards.

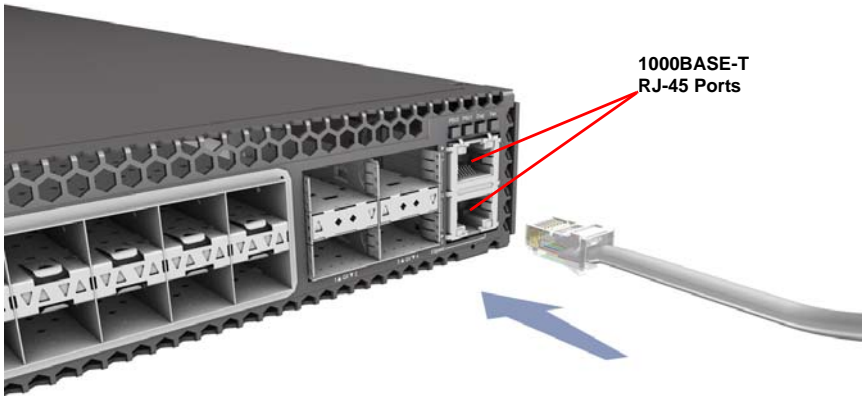
## Connection Procedure

Follow the procedure below to connect cables to 1000BASE-T RJ-45 twisted-pair copper ports.

### ***Connecting Cables to 1000BASE-T RJ-45 Twisted Pair Copper Ports***

1. Attach one end of a twisted-pair cable segment to the device's RJ-45 connector.

**Figure 5-4. Making Twisted-Pair Connections**



2. Attach the other end to an available port on the switch.  
Make sure each twisted pair cable does not exceed 100 meters (328-ft) in length.
3. As each connection is made, the Link LED (on the switch) corresponding to each port will turn on green to indicate that the connection is valid.

## 5-5 How to Connect to SFP/SFP+ Fiber Optic Ports

The switch provides 48 slots for SFP/SFP+ fiber-optic transceivers. Note that all 10G SFP+ fiber optic ports operate at 10 Gbps full duplex. All 1000 Mbps SFP fiber optic ports operate at 1 Gbps full duplex.

**Table 5-5. Maximum 10 Gigabit Ethernet Fiber Cable Lengths**

Fiber Size	Fiber Bandwidth	Maximum Cable Length	Connector
<b>10GBASE-SR</b>			
62.5/125 micron multimode	160 MHz/km	2-26 m (7-85 ft.)	LC
62.5/125 micron multimode	200 MHz/km	2-33 m (7-108 ft.)	LC
50/125 micron multimode	400 MHz/km	2-66 m (7-216 ft.)	LC
50/125 micron multimode	500 MHz/km	2-82 m (7-269 ft.)	LC
50/125 micron multimode	2000 MHz/km	2-300 m (7-984 ft.)	LC

**Table 5-6. Maximum Gigabit Ethernet Fiber Cable Lengths**

Cable Type	Fiber Bandwidth	Maximum Cable Length	Connector
<b>1000BASE-SX</b>			
62.5/125 micron multimode	160 MHz/km	2-220 m (7-722 ft)	LC
	200 MHz/km	2-275 m (7-902 ft)	LC
50/125 micron multimode	400 MHz/km	2-500 m (7-1641 ft)	LC
	500 MHz/km	2-550 m (7-1805 ft)	LC
<b>1000BASE-LX</b>			
9/125 micron single-mode	N/A	2 m - 10 km (7 ft - 6.2 miles)	LC

**NOTE:** The length of fiber optic cable for a single switched link should not exceed the relevant standards specified in this section. However, power budget constraints should also be considered when calculating the maximum fiber optic cable length for a particular link.

### Connection Procedure

Follow the procedure below to connect cables to SFP/SFP+ transceiver ports.

**WARNING:** This switch uses lasers to transmit signals over fiber optic cable. The lasers are compliant with the requirements of a Class 1 Laser Product and are inherently eye safe in normal operation. However, you should never look directly at a transmit port when it is powered on.

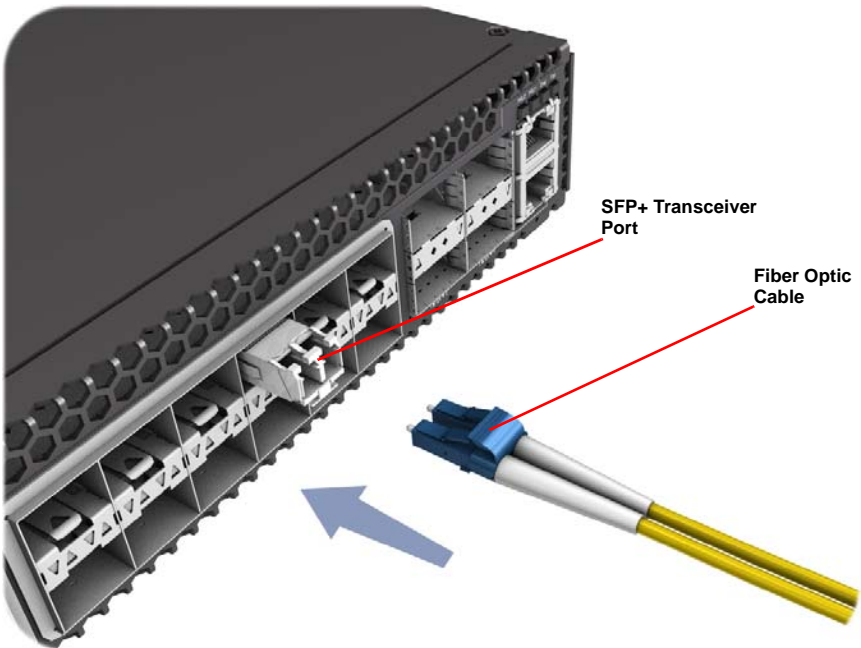
**WARNING:** When selecting a fiber SFP/SFP+ device, considering safety, please make sure that it can function at a temperature that is not less than the recommended maximum

operational temperature of the product. You must also use an approved Laser Class 1 SFP/SFP+ transceiver.

**Connecting Cables to SFP/SFP+ Transceiver Ports**

1. Remove and keep the fiber port's rubber cover. When not connected to a fiber cable, the rubber cover should be replaced to protect the optics.
2. Check that the fiber terminators are clean. You can clean the cable plugs by wiping them gently with a clean tissue or cotton ball moistened with a little ethanol. Dirty fiber terminators on fiber cables will impair the quality of the light transmitted through the cable and lead to degraded performance on the port.
3. Connect one end of the cable to the LC connector on one of the switch's SFP transceivers and the other end to the LC port on the other device. Since both LC connectors are keyed, the cable can only be attached in the correct orientation.

**Figure 5-5. Making a Connection to an SFP+ Transceiver**



4. As a connection is made, check the Link LED on the switch corresponding to the port to be sure that the connection is valid.

**NOTE:** Be sure to secure cables properly and route them away from the switch without exceeding the minimum bending radius for fiber cables (typically a few inches). Use cable ties to bundle cables together and secure coiled loops of excess cable. Do not let cables hang free supporting their own weight or pull in any way that puts stress on the connectors.

## 5-6 How to Connect to QSFP+ Fiber Optic Ports

The switch includes four slots for 40 Gigabit Ethernet QSFP+ fiber-optic transceivers.

**Table 5-7. Maximum 40 Gigabit Ethernet Fiber Cable Lengths**

Fiber Size	Fiber Bandwidth	Maximum Cable Length	Connector
<b>40GBASE-SR4</b>			
62.5/125 micron multimode	160 MHz/km	2-26 m (7-85 ft.)	LC
62.5/125 micron multimode	200 MHz/km	2-33 m (7-108 ft.)	LC
50/125 micron multimode	400 MHz/km	2-66 m (7-216 ft.)	LC
50/125 micron multimode	500 MHz/km	2-82 m (7-269 ft.)	LC
50/125 micron multimode	2000 MHz/km	2-300 m (7-984 ft.)	LC

**NOTE:** The length of fiber optic cable for a single switched link should not exceed the relevant standards specified in this section. However, power budget constraints should also be considered when calculating the maximum fiber optic cable length for a particular link.

### Connection Procedure

Follow the procedure below to connect cables to QSFP+ transceiver ports.

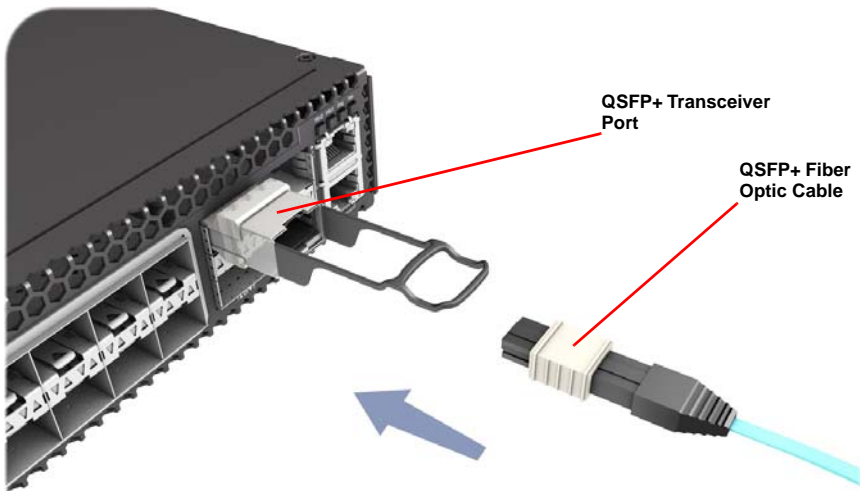
**WARNING:** This switch uses lasers to transmit signals over fiber optic cable. The lasers are compliant with the requirements of a Class 1 Laser Product and are inherently eye safe in normal operation. However, you should never look directly at a transmit port when it is powered on.

**WARNING:** When selecting a fiber QSFP+ device, considering safety, please make sure that it can function at a temperature that is not less than the recommended maximum operational temperature of the product. You must also use an approved Laser Class 1 QSFP+ transceiver.

#### **Connecting Cables to QSFP+ Transceiver Ports**

1. Remove and keep the port's protective cover. When not connected to a fiber cable, the cover should be replaced to protect the optics.
2. Check that the fiber terminators are clean. You can clean the cable plugs by wiping them gently with a clean tissue or cotton ball moistened with a little ethanol. Dirty fiber terminators on fiber cables will impair the quality of the light transmitted through the cable and lead to degraded performance on the port.
3. Connect one end of the cable to the QSFP+ port on the switch and the other end to the QSFP+ port on the other device. Since QSFP+ connectors are keyed, the cable can only be attached in the correct orientation.

Figure 5-6. Making a Connection to a QSFP+ Port



4. As a connection is made, check the Link LED on the switch to be sure that the connection is valid.

**NOTE:** Be sure to secure cables properly and route them away from the switch without exceeding the minimum bending radius for fiber cables (typically a few inches). Use cable ties to bundle cables together and secure coiled loops of excess cable. Do not let cables hang free supporting their own weight or pull in any way that puts stress on the connectors.

## 5-7 DAC Connections

Direct Attach Cable (DAC) is a method of connecting two SFP+/QSFP+ interfaces without using optics and fiber cable. A fixed length of twinax copper cable is terminated at each end with physically-compliant SFP+/QSFP+ transceivers that do not include all their normal electronic and optical components. The result is a low cost, low-latency, 10G/40G Ethernet solution for short distances, ideal for connections within the data center.

A 10G DAC connection is also known as twinax copper or 10GBASE-CR. DAC copper cables are available in pre-terminated lengths up to 10 m (32.8 ft).

For 40G DAC, or 40GBASE-CR4, copper cables are also available in pre-terminated lengths up to 10 m (30 ft).

**Table 5-8. Maximum 10GBASE-CR 10 Gigabit Ethernet Cable Lengths**

Cable Type	Cable Lengths	Connector
Pre-terminated Direct Attach Cable (DAC) — (twinax copper cable)	1 m (3.28 ft) 2 m (6.56 ft) 3 m (9.8 ft) 5 m (16.4 ft) 10 m (32.8 ft)	SFP+

**Table 5-9. Maximum 40GBASE-CR4 40 Gigabit Ethernet Cable Lengths**

Cable Type	Cable Lengths	Connector
Pre-terminated Direct Attach Cable (DAC) — (twinax copper cable)	1 m (3.28 ft) 2 m (6.56 ft) 3 m (9.8 ft) 5 m (16.4 ft) 7 m (22.9 ft)	QSFP+

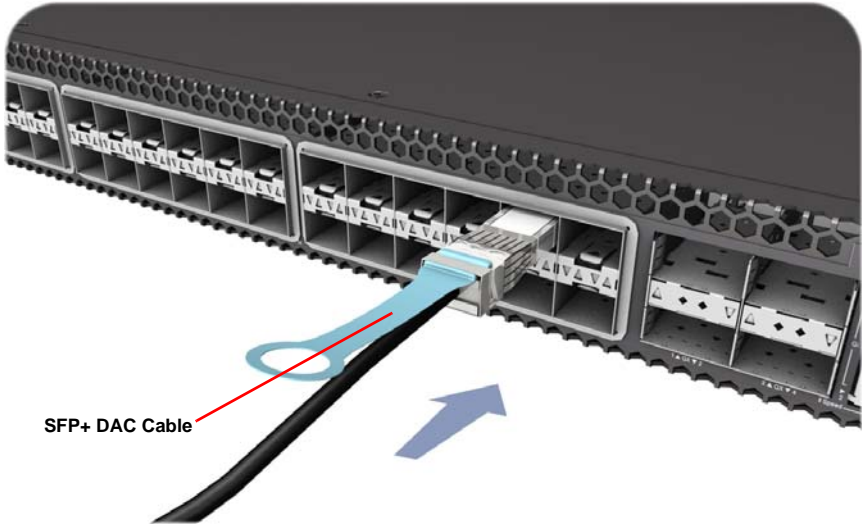
## Making DAC Connections

To make DAC connections, follow the procedure below.

### ***Making DAC Connections***

1. Plug the SFP+/QSFP+ transceiver connector on one end of a twinax copper cable segment into an SFP+/QSFP+ slot on the link device.

**Figure 5-7. Making DAC Connections**



2. Plug the other end of the twinax cable into an SFP+/QSFP+ slot on the switch.
3. Check that the Link LED on the switch turns on green to indicate that the connection is valid.

**NOTE:** Connecting a 40G QSFP+ port to four 10G SFP+ ports requires the use of a breakout DAC cable.



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# Chapter 6

## Hardware Specifications

This chapter lists and describes hardware specifications for the SSE-X3348S/ SSE-X3348SR switches.

### 6-1 Physical Characteristics

Physical characteristic specifications for the switches are shown below:

#### Ports

48 10-Gbps SFP+ transceiver slots, 4 40-Gbps QSFP+ transceiver slots and 2 10/100/1000-Mbps RJ-45 ports

#### Network Interface

Ports EX1~48: SFP+

- 10 Gbps SFP+ transceivers: 10GBASE-CR, 10GBASE-SR
- 1 Gbps SFP transceivers: 1000BASE-SX, 1000BASE-LX

Ports QX1~4: QSFP+

- 40 Gbps QSFP+ transceivers: 40GBASE-CR4, 40GBASE-SR4

Ports Gi1~2: RJ-45

- 10/100/1000BASE-T, RJ-45 connector

Maximum Cable Length - 100 m (328 ft)

#### Buffer Architecture

9 MB packet buffer

#### Aggregate Bandwidth

1280 Gbps

#### Switching Database

128K MAC address entries

#### LEDs

System: PS1, PS2, Diag (Diagnostic)

Fan Ports 1~52: Status (link/activity and speed)

RJ-45 Ports: Status (link/activity)

#### Weight

8.2 kg (18.07 lb), with two installed power supply modules

#### Size

(W x D x H): 438.4 x 473 x 43.6 mm (17.25 x 18.62 x 1.71 inches)

**Temperature**

Operating: 0 °C to 47 °C (32 °F to 116 °F)  
Storage: -40 °C to 70 °C (-40 °F to 158 °F)

**Humidity**

Operating: 5% to 95% (non-condensing)

**AC Input**

SSE-X3348S:  
AC 100-240V, 50-60Hz, 1A

**Power Supply**

100-240 VAC, 50-60 Hz, auto-sensing; hot pluggable 400 Watts@ 220V/110V per module

**Power Consumption**

325.9 Watts maximum

## 6-2 Switch Features

Switch feature specifications are shown below:

**Forwarding Mode**

Store-and-forward

**Throughput**

Wire speed

**Flow Control**

Full Duplex: IEEE 802.3x  
Half Duplex: Back pressure

## 6-3 Management Features

Management feature specifications are shown below:

**In-Band Management**

SSH, Telnet, SNMP, or HTTP

**Out-of-Band-Management**

RS-232 DB-9 console port

**Software Loading**

HTTP, FTP/TFTP in-band

## 6-4 Standards

Applicable standards for the switches are shown below:

- IEEE 802.3-2005
  - Ethernet, Fast Ethernet, Gigabit Ethernet
  - Full-duplex flow control
  - Link Aggregation Control Protocol
- IEEE 802.1Q
- IEEE 802.1P
- ISO/IEC 8802-3

## 6-5 Compliances

Switch compliances are shown below:

### **Emissions**

EN55022 (CISPR 22) Class A

EN 61000-3-2/3

FCC Class A

CE Mark

C-Tick Mark

### **Immunity**

EN 61000-4-2/3/4/5/6/8/11

### **Safety**

UL/cUL (CSA 22.2 NO 60950-1 & UL 60950-1)

CB (IEC/EN60950-1)

Additional compliance certificates are pending.

## Notes

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# Chapter 7

## Switch Management

The SSE-X3348S/SSE-X3348SR switch includes a management agent that allows you to configure or monitor the switch using its embedded management software. To manage the switch, you can make a direct connection to the console port (out-of-band), or you can manage it through a network connection (in-band) using Telnet, Secure Shell (SSH), a web browser, or SNMP-based network management software.

### 7-1 Understanding the System Status LEDs

The switch includes a display panel of key system LED indicators (Figure 7-1). The LEDs, which are located on the front panel, are shown below and described in the following table.

Figure 7-1. System Status LEDs



Table 7-1. System Status LEDs

LED	Condition	Status
PSU1/PSU2	On Green	Power supply 1/2 is installed and operating normally.
	On Amber	The power supply has detected a fault.
	Off	The power supply unit is not installed.
Diag	On Green	The system diagnostic test has completed successfully.
	On Amber	The system self-diagnostic test has detected a fault.
Fan	On Green	Fans are operating normally.
	On Amber	A fan failure has been detected.

## 7-2 How to Connect to the Console Port

The DB-9 Console port (Figure 7-2) on the switch's rear panel is used to connect to the switch for out-of-band console configuration. The console device can be a PC or workstation running a VT-100 terminal emulator, or a VT-100 terminal. A console cable is supplied with the switch for connecting to a PC's RS-232 serial DB-9 DTE (COM) port.

**NOTE:** To connect to notebooks or other PCs that do not have a DB-9 COM port, use a USB-to-male DB-9 adapter cable (not included with the switch).

Figure 7-2. Console Port



The following table describes the pin assignments used in the console cable.

Table 7-2. Console Cable Wiring

Switch's 9-Pin Console Port	Null Modem	PC's 9-Pin DTE Port
2 RXD (receive data)	<-----	3 TXD (transmit data)
3 TXD (transmit data)	----->	2 RXD (receive data)
5 SGND (signal ground)	-----	5 SGND (signal ground)

No other pins are used.

The serial port's configuration requirements are as follows:

- Default Baud rate—9600 bps
- Character Size—8 Characters
- Parity—None
- Stop bit—One
- Data bits—8
- Flow control—none

**Figure 7-3. Console Port Connection**



Follow these steps to connect to the Console port (see [Figure 7-3](#)):

1. Attach one end of the included DB-9-to-DB-9 serial cable to a DB-9 COM port connector on a management PC.
2. Attach the other end of the serial cable to the Console port on the switch.
3. Configure the PC's COM port required settings using VT-100 terminal emulator software (such as HyperTerminal) running on the management PC.
4. Log in to the command-line interface (CLI) using default settings:
  - User — admin
  - Password — *null* (there is no default password)

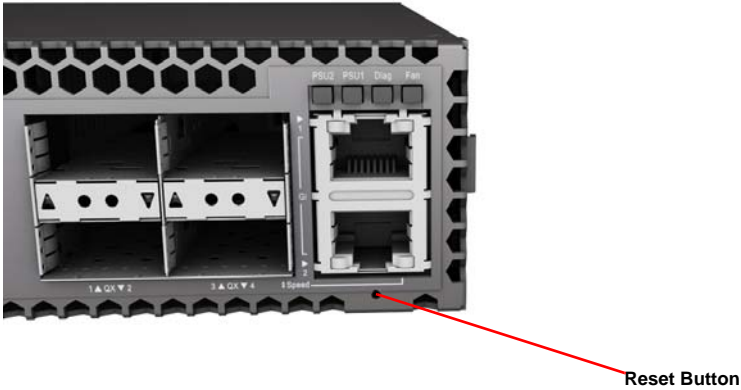
For a detailed description of connecting to the console and using the switch's command line interface (CLI), refer to the *Supermicro Switch CLI Reference Guide*.

### 7-3 How to Reset the Switch

The Reset button (Figure 7-4) on the switch can be used to restart the device and set the configuration back to factory default values.

Use a long thin object, such as the end of a paperclip, to depress the Reset button. One push of the button restarts the system software using default values.

**Figure 7-4. Reset Button**





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# Chapter 8

## Troubleshooting

Use this chapter for troubleshooting the SSE-X3348S/SSE-X3348SR switch.

### 8-1 Diagnosing LED Indicators

Table 8-1. Troubleshooting Chart

Symptom	Action
PSU1/PSU2 LED is Off	<ul style="list-style-type: none"><li>• Check connections between the PSU, the power cord and the wall outlet.</li><li>• Contact your dealer for assistance.</li></ul>
PSU1/PSU2 LED is on Amber	<ul style="list-style-type: none"><li>• Power cycle the PSU to try and clear the condition.</li><li>• Replace the PSU.</li></ul>
Diag LED is on Amber	<ul style="list-style-type: none"><li>• Power cycle the switch to try and clear the condition.</li><li>• If the condition does not clear, contact your dealer for assistance.</li></ul>
Fan LED is on Amber	<ul style="list-style-type: none"><li>• Check fans in the fan tray.</li><li>• Replace as soon as possible.</li></ul>
Link/Act LED is Off	<ul style="list-style-type: none"><li>• Verify that the switch and attached device are powered on.</li><li>• Be sure the cable is plugged into both the switch and corresponding device.</li><li>• Verify that the proper cable type is used and its length does not exceed specified limits.</li><li>• Check the attached device and cable connections for possible defects. Replace the defective cable if necessary.</li></ul>

### 8-2 System Self-Diagnostic Test Failure

If the Diag LED indicates a failure of the system power-on-self-test (POST), you can use a console connection to view the POST results. The POST results may indicate a failed component or help troubleshoot the problem. For more information on connecting to the console port and using the CLI, refer to the *Supermicro Switch CLI Reference Guide*.

Note a POST failure normally indicates a serious hardware fault that cannot be rectified or worked around. If you encounter a POST failure, you should contact your dealer for assistance.

### 8-3 Power and Cooling Problems

If a power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or PSU. However, if the switch powers off after running for a while, check for loose power connections, power losses or surges at the power outlet. If you still cannot isolate the problem, the PSU may be defective.

## **8-4 Installation**

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (such as the power cord or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

## **8-5 In-Band Access**

You can access the management agent in the switch through a connection to any port using Telnet, a web browser, or other network management software tools. However, you must first configure the switch with a valid IP address, subnet mask, and default gateway. If you have trouble establishing a link to the management agent, check to see if you have a valid network connection. Then verify that you entered the correct IP address. Also, be sure the switch port has not been disabled. If it has not been disabled, then check the network cabling that runs between your remote location and the switch.

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