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California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate for further details.

WARNING: HANDLING OF LEAD SOLDER MATERIALS USED IN THIS PRODUCT MAY EXPOSE YOU TO LEAD, A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM.

Manual Revision 1.0

Release Date: April 9, 2013

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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-X3348T and SSE-X3348TR 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

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<th>Glossary Term</th>
<th>Description</th>
</tr>
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<tr>
<td>10BASE-T</td>
<td>IEEE 802.3 specification for 10 Mbps Ethernet over two pairs of Category 3, 4, or 5 UTP cable.</td>
</tr>
<tr>
<td>100BASE-FX</td>
<td>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.</td>
</tr>
<tr>
<td>100BASE-TX</td>
<td>IEEE 802.3u specification for 100 Mbps Ethernet over two pairs of Category 5 UTP cable.</td>
</tr>
<tr>
<td>1000BASE-LX</td>
<td>IEEE 802.3z specification for Gigabit Ethernet over two strands of 50/125, 62.5/125 or 9/125 micron core fiber cable.</td>
</tr>
<tr>
<td>1000BASE-LH</td>
<td>Specification for long-haul Gigabit Ethernet over two strands of 9/125 micron core fiber cable.</td>
</tr>
<tr>
<td>1000BASE-SX</td>
<td>IEEE 802.3z specification for Gigabit Ethernet over two strands of 50 or 62.5/125 micron core fiber cable.</td>
</tr>
<tr>
<td>1000BASE-T</td>
<td>IEEE 802.3ab specification for Gigabit Ethernet over 100-ohm Category 5, 5e or 6 twisted-pair cable (using all four wire pairs).</td>
</tr>
<tr>
<td>10GBASE-T</td>
<td>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.).</td>
</tr>
<tr>
<td>Auto-Negotiation</td>
<td>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.</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>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.</td>
</tr>
<tr>
<td>Collision Domain</td>
<td>Single CSMA/CD LAN segment.</td>
</tr>
<tr>
<td>CSMA/CD</td>
<td>CSMA/CD (Carrier Sense Multiple Access/Collision Detect) is the communication method employed by Ethernet, Fast Ethernet, and Gigabit Ethernet.</td>
</tr>
<tr>
<td>End Station</td>
<td>A workstation, server, or other device that does not forward traffic.</td>
</tr>
<tr>
<td>Ethernet</td>
<td>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.</td>
</tr>
<tr>
<td>Fast Ethernet</td>
<td>A 100 Mbps network communication system based on Ethernet and the CSMA/CD access method.</td>
</tr>
<tr>
<td>Full Duplex</td>
<td>Transmission method that allows two network devices to transmit and receive concurrently, effectively doubling the bandwidth of that link.</td>
</tr>
<tr>
<td>Gigabit Ethernet</td>
<td>A 1000 Mbps network communication system based on Ethernet and the CSMA/CD access method.</td>
</tr>
<tr>
<td>IEEE</td>
<td>Institute of Electrical and Electronic Engineers.</td>
</tr>
<tr>
<td>Glossary Term</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>IEEE 802.3</td>
<td>Defines carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications.</td>
</tr>
<tr>
<td>IEEE 802.3ab</td>
<td>Defines CSMA/CD access method and physical layer specifications for 1000BASE-T Gigabit Ethernet. (Now incorporated in IEEE 802.3-2005.)</td>
</tr>
<tr>
<td>IEEE 802.3az</td>
<td>Defines the IEEE 802.3az specification for Energy Efficient Ethernet (EEE). This specification defines a mechanism for enhancing the twisted-pair and backplane Ethernet standards that allows for less power consumption during periods of low data activity.</td>
</tr>
<tr>
<td>IEEE 802.3u</td>
<td>Defines CSMA/CD access method and physical layer specifications for 100BASE-TX Fast Ethernet. (Now incorporated in IEEE 802.3-2005.)</td>
</tr>
<tr>
<td>IEEE 802.3x</td>
<td>Defines Ethernet frame start/stop requests and timers used for flow control on full-duplex links. (Now incorporated in IEEE 802.3-2005.)</td>
</tr>
<tr>
<td>IEEE 802.3z</td>
<td>Defines CSMA/CD access method and physical layer specifications for 1000BASE Gigabit Ethernet. (Now incorporated in IEEE 802.3-2005.)</td>
</tr>
<tr>
<td>LAN Segment</td>
<td>Separate LAN or collision domain.</td>
</tr>
<tr>
<td>LED</td>
<td>Light emitting diode used for monitoring a device or network condition.</td>
</tr>
<tr>
<td>Local Area Network (LAN)</td>
<td>A group of interconnected computer and support devices.</td>
</tr>
<tr>
<td>Media Access Control (MAC)</td>
<td>A portion of the networking protocol that governs access to the transmission medium, facilitating the exchange of data between network nodes.</td>
</tr>
<tr>
<td>MIB</td>
<td>An acronym for Management Information Base. It is a set of database objects that contains information about the device.</td>
</tr>
<tr>
<td>RJ-45 Connector</td>
<td>A connector for twisted-pair wiring.</td>
</tr>
<tr>
<td>STP</td>
<td>Shielded Twisted Pair.</td>
</tr>
<tr>
<td>SMPS</td>
<td>Switching Mode Power Supply.</td>
</tr>
<tr>
<td>Switched Ports</td>
<td>Ports that are on separate collision domains or LAN segments.</td>
</tr>
<tr>
<td>TIA</td>
<td>Telecommunications Industry Association</td>
</tr>
<tr>
<td>UTP</td>
<td>Un-shielded twisted-pair cable.</td>
</tr>
<tr>
<td>Virtual LAN (VLAN)</td>
<td>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.</td>
</tr>
</tbody>
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Chapter 1
Introduction

1-1 Overview

The SSE-X3348T/SSE-X3348TR switch is built with leading-edge technology to deliver reliable high-performance connectivity for your data network.

The SSE-X3348T/SSE-X3348TR switch is a high-performance top-of-rack switch, designed for data center operating environments. The switch provides 48 10GBASE-T RJ-45 ports, four 40G Quad Small Form Factor Pluggable Plus (QSFP+) ports, and two 1G RJ-45 ports. 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-X3348T switch provides front-to-back (F2B) airflow cooling and the SSE-X3348TR provides back-to-front (B2F) airflow cooling. The airflow options enable rack deployment with either 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

10GBASE-T RJ-45 Ports

The switch contains 48 10GBASE-T RJ-45 ports that support 10 Gbps, 1 Gbps, and 100 Mbps copper links to other devices. For more information, see Section 5-4: "How to Connect to Twisted-Pair Copper Ports" on page 5-4.

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 5-5: "How to Connect to QSFP+ Fiber Optic Ports" on page 5-8.

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 5-4.
Chapter 1: Introduction

Reset Button
Pressing the reset button on the front panel causes the switch to perform 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 “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 install them, and how to power-on the switch, see Section 4-3: "Switch Installation Tasks" on page 4-4.
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.

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。
此警告符号表示危险。

您正处于可能受到伤害的工作环境中，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。

警告の定義

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
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.

تحذير
تحذيرات أمنية
تحذير! هذا الرمز يعني خطر انك في حالة يمكن أن تتسبب في إصابة 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 للتعثور ترجمتها

안전을 위한 주의사항

경고!
Chapter 2: Standardized Warning Statements

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.

설치방법

시스템을 전원에 연결하기 전에, 설치방법을 읽어보십시오.

警告
将此系统连接电源前，请阅读安装说明。

警告
將系統與電源連接前，請先閱讀安裝說明。

Warning
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.

ish Lakorwa et nyarawat khekhe laphi boor mupunya laphi mapha.
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.

Warning !
This product is based on the installation of the building's short circuit (overcurrent) protection. Ensure that the protective device is not greater than: 250 V, 20 A.

¡Advertencia!
Este equipo utiliza el sistema de protección contra cortocircuitos (surtension) 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.
Waarschuwing

Dit product is afhankelijk van de kortsuitbeveiliging (overspanning) van uw electrische 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.

警告

在你打开机箱并安装或移除内部器件前，必须将系统完全断电，并移除电源线。

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 desconectado 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 chassis pour installer ou enlever des composants de système.

اثناء مونتير نشمال

يش تلفح تا الحورات مكل منارة الحشمل ريذ لفمير تا ببل الحشمل ميسفي للفي تي حورات الحورات شي الجميز لفوري تاموجات تا تاموجات وليبيت.

يجب فصل النظام من جميع مصادر الطاقة وإزالة سلك الكهرباء من وحدة إمداد الطاقة قبل الوصول إلى المناطق الداخلية لتشيي أو إزالة مكونات الجهاز.

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 세시 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。

2-6
Chapter 2: Standardized Warning Statements

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.

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、锁头及钥匙或其他安全方式才能进入的区域。

警告

此装置仅供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、锁头及钥匙或其他安全方式才能进入的区域。

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).
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.

경고!
이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 복수 도구, 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

电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

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


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.

¡حذر!

إذا كنت تحكم بطارية لم تظهر بها النهاية والمهمة الأخرى، فثبها لفترة طويلة.

ال배터리의 사용 및 관리

배터리 교체가 잘못되었을 때는 폭발의 위험이 있습니다. 배터리를만 동일한 또는 제조 업체가 추천하는 성능이 동일한 배터리로 교체하십시오. 사용한 배터리를 제조업체의 지시에 따라 폐기하십시오.

경고

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


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.
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らない。

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。

此装置连接的电源可能不止一个，必须切断所有电源才能停止对该装置的供电。

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 משכפ אורות

אזהרה 1

ליחודיאش ותור מחיבור אחד של שכפ, יש להסר את כל המובחרים של שכפ, לא היחידה.
Chapter 2: Standardized Warning Statements

Backplane Voltage

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

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。

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

¡Advertencia!
Cuando 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.

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。

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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。
Comply with Local and National Electrical Codes

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

Warning
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.

**Compliance with Local and National Electrical Codes**

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

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**¡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.
Chapter 2: Standardized Warning Statements

Product Disposal

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

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.
**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.

**Warnung**


¡Advertencia!

Los ventiladores podran dar vuelta cuando usted quite el montaje del ventilador del chasis. Mantenga 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 retirez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.
Chapter 2: Standardized Warning Statements

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.

Warning
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禁止使用未经 UL 或 CSA 认证的线材。（线材上会显示 UL/CSA 符号。）
Warnung

¡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 cables 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 cables certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

¡אזהרה! כאשר מתקינים את המוצר, יש לותק באמצעות כבל AC שסופק והמתאים ל Carré טוספקי כבל של אוסרות. שימוש באחרים כבל או מתאם יכול לגרום לתקלה או התחלה של קיצוי שטפונים. על פי חוקי בטיחות חשמליים, קיים איסור על 😉wards bekannten UL- oder CSA zertifizierten Kabel, UL oder CSA unterhalb des Codes für andere elektrische Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

AC חשמליות מצ-po主旨
כאמור, ממוקמים את המריץ, יש ל- ו- כבל AC שסופק והמתאים ל Carré טוספקי כבל של אוסרות. שימוש באחרים כבל או מתאם יכול לגרום לתקלה או התחלה של קיצוי שטפונים. על פי חוקי בטיחות חשמליים, קיים איסור על 😉wards bekanntenen UL- oder CSA zertifizierten Kabel, UL oder CSA unterhalb des Codes für andere elektrische Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

אזהרה! כאשר מתקינים את המוצר, יש ל- ו- כבל AC שסופק והמתאים ל Carré טוספקי כבל של אוסרות.オスースッします。此のコードにより、他の電気製品の使用は禁止されています。Supermicroのみの製品として表示されています。
Chapter 2: Standardized Warning Statements

경고!

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC 어댑터를 사용해야 합니다. 그 밖의 다른 케이블이나 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 CSA에서 인증한 케이블 (전선 위에 UL/CSA 가 표시) 등의 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
Chapter 3
Network Planning

3-1 Data Center Deployment

The SSE-X3348T/SSE-X3348TR 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 hot-swappable fan tray, and port-to-power 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 lossless Ethernet connections between FCOE storage, servers, and other data network switches (Figure 3-2).
Figure 3-2. Converged Ethernet Data Center Deployment

- Core Switch
- FCoE Storage
- ToR Switch
- Servers
3-2 Rack Cooling

The 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-X3348T 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-X3348TR 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

Hot Aisle

Cool Aisle

Front of Rack

Rear of Rack

ToR Switch

Servers
Chapter 4
Installing the Switch

This chapter covers switch installation.

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-X3348T/SSE-X3348TR switch is designed to be installed in a standard 19-inch equipment rack. Be sure to take into account switch cooling requirements.

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 45 °C (32 to 113 °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-P7052L).

**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-X3348T) or a back-to-front (B2F) airflow direction (SSE-X3348TR). 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-X3348T

B2F Airflow – SSE-X3348TR
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 whole switch must be replaced as soon as possible; fan trays are not field replaceable.

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.

Table 4-1. Fan Tray Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption</td>
<td>12 VDC @ 2.8 A, 37 Watts maximum</td>
</tr>
<tr>
<td>Airflow</td>
<td>76.4 CFM minimum</td>
</tr>
<tr>
<td></td>
<td>90.4 CFM maximum</td>
</tr>
<tr>
<td>Dimensions</td>
<td>W x D x H: 207 x 94.25 x 40.4 mm (8.15 x 3.71 x 1.59 inches)</td>
</tr>
</tbody>
</table>

4-3 Switch Installation Tasks

Follow these tasks to install the SSE-X3348T/SSE-X3348TR 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.
Chapter 4: Installing the Switch

**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, Diagnostic, 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.

For information on initial switch configuration refer to the 1/10 and 10-Gigabit Layer 2/3 Ethernet Switches User’s Manual.
Chapter 4: Installing the Switch

Task 6: Install Transceivers and Connect Cables

Install QSFP+ transceivers and connect network cables to port interfaces:

- For RJ-45 ports, use 100-ohm Category 5e, 6, 6a or 7 twisted-pair cable for 10GBASE-T connections, or Category 5, 5e or better cable for 1000BASE-T connections.
- Connect DAC cables to the QSFP+ slots. Or first install QSFP+ transceivers and then connect fiber optic cabling to the transceiver ports.

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 QSFP+ 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.

The switch provides two AC power supply module options, which are listed below:

- SSE-X3348T-ACPWR (front-to-back airflow)
- SSE-X3348TR-ACPWR (back-to-front airflow)

**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 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.

**Figure 4-6. AC Power Supply Module**
Chapter 4: Installing the Switch

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

Table 4-2. AC Power Supply Module Specifications

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

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

Table 4-3. Power Supply Module LED

<table>
<thead>
<tr>
<th>LED</th>
<th>Condition</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>Green</td>
<td>External AC power is connected to the module.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>External power is not connected or has failed.</td>
</tr>
</tbody>
</table>
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.
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.)

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.
Chapter 5
Making Network Connections

This chapter focuses on making connections to SSE-X3348T/SSE-X3348TR switch network interfaces, including how to install optional transceivers, and details on network cable specifications.

The SSE-X3348T/SSE-X3348TR switch features 48 10G RJ-45 ports, 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>
<thead>
<tr>
<th>LED</th>
<th>Condition</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>10G RJ-45 Ports (EX 1-48)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link/Activity</td>
<td>On/Flashing Green</td>
<td>Port has a valid 10G link. Flashing indicates activity on the port.</td>
</tr>
<tr>
<td></td>
<td>On/Flashing Amber</td>
<td>Port has a valid 100/1000 Mbps link. Flashing indicates activity on the port.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>The link is down.</td>
</tr>
<tr>
<td><strong>40G QSFP+ Ports (QX1-4)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link/Activity</td>
<td>On/Flashing Green</td>
<td>Port has a valid 40G link. Flashing indicates activity on the port.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>The link is down.</td>
</tr>
<tr>
<td><strong>1G RJ-45 Ports (Gi1-2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link/Speed</td>
<td>On Green</td>
<td>Port has a valid 1000 Mbps link.</td>
</tr>
<tr>
<td></td>
<td>On Amber</td>
<td>Port has a valid 10/100 Mbps link.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>The link is down.</td>
</tr>
<tr>
<td>Activity</td>
<td>Flashing Green</td>
<td>Flashing indicates activity on the port.</td>
</tr>
</tbody>
</table>
5-3 How to Install a QSFP+ Transceiver

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

- 40 Gbps Ethernet QSFP+ transceivers
  - 40GBASE-CR4
  - 40GBASE-SR4

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

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

*Installing a 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 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 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 a QSFP+ 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. Maximum Twisted-Pair Copper Cable Lengths

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Maximum Cable Length</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>10GBASE-T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category 5e 100-ohm UTP</td>
<td>45 m (147 ft)</td>
<td>RJ-45</td>
</tr>
<tr>
<td>Category 6 100-ohm UTP</td>
<td>55 m (180 ft)</td>
<td>RJ-45</td>
</tr>
<tr>
<td>Category 6a 100-ohm UTP</td>
<td>100 m (328 ft)</td>
<td>RJ-45</td>
</tr>
<tr>
<td>Category 7 100-ohm STP</td>
<td>100 m (328 ft)</td>
<td>RJ-45</td>
</tr>
<tr>
<td>1000BASE-T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category 5, 5e, or 6 100-ohm UTP or STP</td>
<td>100 m (328 ft)</td>
<td>RJ-45</td>
</tr>
<tr>
<td>100BASE-TX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category 5 or better 100-ohm UTP or STP</td>
<td>100 m (328 ft)</td>
<td>RJ-45</td>
</tr>
<tr>
<td>10BASE-T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category 3 or better 100-ohm UTP</td>
<td>100 m (328 ft)</td>
<td>RJ-45</td>
</tr>
</tbody>
</table>

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, 1000BASE-T, or 10GBASE-T operation. Check the following criteria against the current installation of your network:

- Cable type: Unshielded twisted pair (UTP) or shielded twisted pair (STP) cables with RJ-45 connectors. Category 5e, 6, 6a, or 7 cable for 10GBASE-T connections, 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>
<thead>
<tr>
<th>Pin</th>
<th>MDI Signal Namea</th>
<th>MDI-X Signal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transmit Data plus (TD+)</td>
<td>Receive Data plus (RD+)</td>
</tr>
<tr>
<td>2</td>
<td>Transmit Data minus (TD-)</td>
<td>Receive Data minus (RD-)</td>
</tr>
<tr>
<td>3</td>
<td>Receive Data plus (RD+)</td>
<td>Transmit Data plus (TD+)</td>
</tr>
<tr>
<td>6</td>
<td>Receive Data minus (RD-)</td>
<td>Transmit Data minus (TD-)</td>
</tr>
<tr>
<td>4,5,7,8</td>
<td>Not used</td>
<td>Not used</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Pin</th>
<th>MDI Signal Name</th>
<th>MDI-X Signal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bi-directional Pair A Plus (BI_DA+)</td>
<td>Bi-directional Pair B Plus (BI_DB+)</td>
</tr>
<tr>
<td>2</td>
<td>Bi-directional Pair A Minus (BI_DA-)</td>
<td>Bi-directional Pair B Minus (BI_DB-)</td>
</tr>
<tr>
<td>3</td>
<td>Bi-directional Pair B Plus (BI_DB+)</td>
<td>Bi-directional Pair A Plus (BI_DA+)</td>
</tr>
<tr>
<td>4</td>
<td>Bi-directional Pair C Plus (BI_DC+)</td>
<td>Bi-directional Pair D Plus (BI_DD+)</td>
</tr>
<tr>
<td>5</td>
<td>Bi-directional Pair C Minus (BI_DC-)</td>
<td>Bi-directional Pair D Minus (BI_DD-)</td>
</tr>
<tr>
<td>6</td>
<td>Bi-directional Pair B Minus (BI_DB-)</td>
<td>Bi-directional Pair A Minus (BI_DA-)</td>
</tr>
<tr>
<td>7</td>
<td>Bi-directional Pair D Plus (BI_DD+)</td>
<td>Bi-directional Pair C Plus (BI_DC+)</td>
</tr>
<tr>
<td>8</td>
<td>Bi-directional Pair D Minus (BI_DD-)</td>
<td>Bi-directional Pair C Minus (BI_DC-)</td>
</tr>
</tbody>
</table>

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.

10GBASE-T Cable Requirements

Use 100-ohm Category 5e, 6, 6a or 7 twisted-pair cable for 10GBASE-T connections as specified in Table 5-2. Also be sure that the length of any twisted-pair connection does not exceed the lengths specified in this table.

The primary cable specified for 10GBASE-T is augmented Category 6 (Category 6a). Other types also work, but the specific installation may have to be qualified for 10G operation. See the IEEE 802.3an-2006 standard and the relevant TIA specifications listed therein.

Note that when testing your cable installation, be sure to include all patch cables between switches and end devices.

**Connection Procedure**

Follow these steps to connect cables to 10GBASE-T or 1000BASE-T RJ-45 twisted-pair copper ports.

*Connecting Cables to 10GBASE-T or 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.

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. For 10GBASE-T connections, make sure cables do not exceed the lengths specified in Table 5-4.

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 QSFP+ Fiber Optic Ports

The switch includes four slots for 40-Gigabit Ethernet QSFP+ fiber-optic transceivers. Note that 40G fiber optic ports can provide either one 40-Gbps full-duplex link, four independent 10G fiber optic links. Connecting a 40G QSFP+ port to four 10G SFP+ ports requires the use of a breakout cable.

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.

### Table 5-5. Maximum 40 Gigabit Ethernet Fiber Cable Lengths

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

**Connection Procedure**

Follow these steps 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 SFP/SFP+ 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.
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 bunder 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 DAC Connections

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

A 40G DAC connection is also known as twinax copper or 40GBASE-CR4. DAC copper cables are available in pre-terminated lengths up to 7 m (22.9 ft).
Making DAC Connections

To make DAC connections, follow the procedure below.

**Making DAC Connections**

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

![Figure 5-6. Making DAC Connections]

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

---

**Table 5-6. Maximum 40GBASE-CR4 40 Gigabit Ethernet Cable Lengths**

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Cable Lengths</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-terminated Direct Attach Cable (DAC)</td>
<td>1 m (3.28 ft)</td>
<td>QSFP+</td>
</tr>
<tr>
<td></td>
<td>2 m (6.56 ft)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 m (9.8 ft)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 m (16.4 ft)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 m (22.9 ft)</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 6
Hardware Specifications

This chapter lists and describes hardware specifications for the SSE-X3348T switches.

6-1 Physical Characteristics

Physical characteristic specifications for the switches are shown below:

Ports
48x10Gbps RJ-45 ports, 4x40 Gbps QSFP+ transceiver slots and 2x10/100/1000 Mbps RJ-45 ports

Network Interface
Ports EX1~48: RJ-45
• 10GBASE-T, RJ-45 connector
Ports QX1~4: QSFP+
• 40 Gbps QSFP+ transceivers: 40GBASE-CR4, 40GBASE-SR4
Ports Gi1~2: RJ-45
• 10/100/1000BASE-T, RJ-45 connector

Buffer Architecture
9 MB packet buffer

Aggregate Bandwidth
1280 Gbps

Switching Database
128K MAC address entries

LEDs
System: PS1, PS2, Diag (Diagnostic)
Fan Ports 1~54: Status (link/activity and speed)

Weight
9.2 kg (20.3 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 45 °C (32 °F to 113 °F)
Storage: -40 °C to 70 °C (-40 °F to 158 °F)
Humidity
Operating: 5% to 95% (non-condensing)

AC Input
SSE-X3348T/SSE-X3348TR
AC 100-240V, 50-60Hz, 1A

Power Supply
100-240 VAC, 50-60 Hz, auto-sensing; hot pluggable 600 Watts@ 220V/110V per module

Power Consumption
357 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
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.
Chapter 7
Switch Management

The SSE-X3348T/SSE-X3348TR 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>
<thead>
<tr>
<th>LED</th>
<th>Condition</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSU1/PSU2</td>
<td>On Green</td>
<td>Power supply 1/2 is installed and operating normally.</td>
</tr>
<tr>
<td></td>
<td>On Amber</td>
<td>The power supply has detected a fault.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>The power supply unit is not installed.</td>
</tr>
<tr>
<td>Diag</td>
<td>On Green</td>
<td>The system diagnostic test has completed successfully.</td>
</tr>
<tr>
<td></td>
<td>On Amber</td>
<td>The system self-diagnostic test has detected a fault.</td>
</tr>
<tr>
<td>Fan</td>
<td>On Green</td>
<td>Fans are operating normally.</td>
</tr>
<tr>
<td></td>
<td>On Amber</td>
<td>A fan failure has been detected.</td>
</tr>
</tbody>
</table>
Chapter 7: Switch Management

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).

![Console Port](image)

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

<table>
<thead>
<tr>
<th>Switch's 9-Pin Console Port</th>
<th>Null Modem</th>
<th>PC's 9-Pin DTE Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 RXD (receive data)</td>
<td>------------</td>
<td>3 TXD (transmit data)</td>
</tr>
<tr>
<td>3 TXD (transmit data)</td>
<td>2 RXD (receive data)</td>
<td></td>
</tr>
<tr>
<td>5 SGND (signal ground)</td>
<td>5 SGND (signal ground)</td>
<td></td>
</tr>
</tbody>
</table>

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
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 — ADMIN

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
Chapter 8
Troubleshooting

Use this chapter for troubleshooting the SSE-X3348T/SSE-X3348TR switch.

8-1 Diagnosing LED Indicators

Table 8-1. Troubleshooting Chart

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSU1/PSU2 LED is Off</td>
<td>• Check connections between the PSU, the power cord and the wall outlet.</td>
</tr>
<tr>
<td></td>
<td>• Contact your dealer for assistance.</td>
</tr>
<tr>
<td>PSU1/PSU2 LED is on Amber</td>
<td>• Power cycle the PSU to try and clear the condition.</td>
</tr>
<tr>
<td></td>
<td>• Replace the PSU.</td>
</tr>
<tr>
<td>Diag LED is on Amber</td>
<td>• Power cycle the switch to try and clear the condition.</td>
</tr>
<tr>
<td></td>
<td>• If the condition does not clear, contact your dealer for assistance.</td>
</tr>
<tr>
<td>Fan LED is on Amber</td>
<td>• Check fans in the fan tray.</td>
</tr>
<tr>
<td></td>
<td>• Replace as soon as possible.</td>
</tr>
<tr>
<td>Link/Act LED is Off</td>
<td>• Verify that the switch and attached device are powered on.</td>
</tr>
<tr>
<td></td>
<td>• Be sure the cable is plugged into both the switch and corresponding</td>
</tr>
<tr>
<td></td>
<td>device.</td>
</tr>
<tr>
<td></td>
<td>• Verify that the proper cable type is used and its length does not</td>
</tr>
<tr>
<td></td>
<td>exceed specified limits.</td>
</tr>
<tr>
<td></td>
<td>• Check the attached device and cable connections for possible defects.</td>
</tr>
<tr>
<td></td>
<td>Replace the defective cable if necessary.</td>
</tr>
</tbody>
</table>

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.
Chapter 8: Troubleshooting

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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