TippingPoint SMS Installation and Configuration Guide

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About This Guide

Explains for whom this book is intended, conventions used in this book, where related documentation can be found, and how to obtain customer support if you cannot resolve a problem.

Guide Overview

This section includes the following items:

Target Audience

This guide is intended for use by technicians and maintenance personnel responsible for installing, configuring, and maintaining the TippingPoint Security Management System (SMS) where multiple security devices are deployed. Users should be familiar with networking concepts. and the follow standards and protocols:

- TCP/IP
- ethernet
- SNMP

Conventions

This book, and the other books in this series, follow some conventions for structuring information.

Headings

Every chapter starts with a brief description of the information you can find in that chapter, which correlates with the major headings in that chapter. Each major heading corresponds to a task or concept that is important for you to understand. Headings are of a different size and type to make them easy to skim, whether you are viewing an online or print copy of this document.

Typeface

This book uses the following typeface conventions:

Bold	Used for the names of screen elements like buttons, drop-down lists, or fields. For example, when you are done with a dialog, you would click the OK button.
`Code`	Used for text a user must type to use the product.
Italic	Used for book titles, variables, and important terms.
Hyperlink	Used for Web site and cross reference links.

Cross References

When a topic is covered in depth elsewhere in this guide, or in another book in this series, a cross reference to the other information will be provided as follows:

- Cross references within this book will take the form: "For more information about <*topic*>, see <*Topic Title*> on page <*page number*>."
- Cross references to other publications will take the form: "For more information about <*topic*>, see *Publication Name*."

Messages

Messages are special text that are emphasized by font, format, and icons. There are four types of messages in this book:

- Warning
- Caution
- Note
- Tip

Warning

Warnings tell you how to avoid physical injury to people or equipment. For people, injury includes anything from temporary conditions, such as pain, to irreversible conditions such as death. For equipment, injury means anything requiring repair. Warnings tell you what you should or should not do, and the consequences of not heeding the warning.

Warnings have an icon to the left showing a white lightning bolt drawn inside of a red octagon. Warnings also start with the word "WARNING", and are presented in bold face type.

WARNING: Only trained and qualified personnel should install, replace, or service this equipment. Disconnect the system before servicing.

Caution

Cautions tell you how to avoid a serious loss that stops short of physical damage such as the loss of data, time, or security. Cautions tell you what you should or should not do to avoid such losses, and the consequences of not heeding the caution.

Cautions have an icon to the left showing a black exclamation point drawn inside of a yellow triangle. Cautions also start with the word "CAUTION".

CAUTION: Do not type del *.* from the root (C:\) directory. Typing del *.* from the root directory will destroy all the program and configuration data that your computer needs to run, and will render your system inoperable.

Note

Notes tell you about information that might not be obvious, or that does not relate directly to the current topic, but that may affect relevant behavior.

A note has an icon to the left showing a piece of note paper, and starts with the word "Note".

Note: Most car rental companies no longer allow cash deposits in lieu of a credit card when renting a car. Non-credit card deposits can only be arranged by a lengthy application and approval process.

Tip

Tips are suggestions about how you can perform a task more easily or more efficiently.

A tip has an icon to the left showing a light bulb drawn inside, and starts with the word "Tip".

Tip: Setting the **logging** parameter to "off" or "minimal" will improve your system's processing performance, but it will make debugging very difficult in the event of a system crash. During system integration, you can set logging to "full" to ease debugging. After you have finished testing, set logging to "minimal" to improve performance.

Related Documentation

The TippingPoint systems have a full set of documentation. These publications are available in electronic format on your installation CDs. For the most recent updates, check the Threat Management Center (TMC) Web site at https://tmc.tippingpoint.com.

Customer Support

TippingPoint is committed to providing quality customer support to all of its customers. Each customer is provided with a customized support agreement that provides detailed customer and support contact information.

For the most efficient resolution of your problem, please take a moment to gather some basic information from your records and from your system before contacting customer support, including your customer number.

Table About - 1: Customer Support Information

Information	Location
Your customer number	You can find this number on your Customer Support Agreement and on the shipping invoice that came with your TippingPoint system.
Your SMS server serial number	You can find this number on the bottom of the server chassis. Also, from the SMS CLI, you can run the `key` command.
Your SMS version number	You can find this information in the Administration window. On the SMS dashboard, click the **Admin** button to open the Administration window. Choose the menu command **Edit** and choose **SMS Server**. Click the **Software Upgrade** tab. You can also run the `version` command on the SMS CLI.

Contact Information

Use the following information to contact TippingPoint Customer Support:

Telephone

North America: +1 866 681 8324

International: +1 512 681 8524

Australia: 800 783 933

New Zealand: 0800 852 300

E-mail

support@tippingpoint.com

1 Overview

Provides an overview of the product and regulatory information for the TippingPoint SMS.

Chapter Overview

This section includes the following items:

Guide Purpose

The *SMS Installation And Configuration Guide* provides information about the TippingPoint Security Management System (SMS), the SMS Security Server appliance and associated software. This guide provides instructions for installing and configuring your new system.

After completing the instructions in this guide, you will be able to use the SMS to manage multiple TippingPoint devices in your network. For detailed information, see the *TippingPoint Security Management System User's Guide*.

Product Overview

The TippingPoint Security Management System is the control center where you can configure, monitor, and report on the TippingPoint devices in your network. The main components include a rack-mountable SMS Server appliance and a SMS Management Client application. Each SMS can manage up to 150 TippingPoint devices (based on environmental conditions).

Features

You can use the SMS to create multiple profiles of filters with settings to distribute to specific devices. The devices can be organized in groups or security zones that make it easy to distribute and update security profiles. You can also use the SMS to keep your devices updated with the latest TippingPoint Operating System (TOS) software and Digital Vaccine packages. For more detailed information, see the *Tipping Point Security Management System User's Guide*.

SMS Components

Core Components

- SMS Secure Server —hardware appliance for managing multiple devices
  - SMS Home Page — Web-based interface with links to current Client software, documentation, and the Threat Management Center
- SMS Management Client — Java-based application for Windows® or Linux workstations used to manage your TippingPoint system
  - Graphical User Interface (GUI)
  - Dashboard
  - Command Line Interface (CLI)

Additional Components

- Threat Management Center (TMC) — Centralized service center that monitors global threats and distributes up-to-date attack filter packages, software updates, and product documentation.
- Digital Vaccine (DV) — Update service that includes up-to-date filter packages for protecting your network
- Managed Devices — TippingPoint IPS or X-Series devices that are installed in your network

Models

For specific information about your SMS Security Server appliance, see the appropriate section listed below:

- "SMS Appliance" on page 47 (3CRTP0020-96, 3CRTP0021-96, 3CRTP0022-96)
- "SMS Based on Dell 1850" on page 65 (3CRTP000196C, 3CRTP000096C)
- "SMS Based on Supermicro" on page 77
- "SMS Based on Dell 1750" on page 85
- "SMS Based on Intel" on page 95

To identify which SMS you have, see "SMS Identification" on page 8

Regulatory Notices

Overview

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signals leads, that endangers the functioning of a radio navigation or other safety service or seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include but are not limited to AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pager, and Personal Communication Services (PCS). These licensed services, along with unintentional radiators such as digital devices, including computer systems, contribute to the electromagnetic environment.

Electromagnetic Compatibility (EMC) is the ability of items of electronic equipment to function properly together in the electronic environment. While this computer system has been designed and determined to be compliant with regulatory agency limits for EMI, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio communications services, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and the receiver are on different branch circuits.

If necessary, contact technical support or an experienced radio/television technician for additional suggestions.

Summary of Regulatory Classifications

This product is designed, tested, and classified for business or industrial electromagnetic environments as follows:

- FCC (U.S.) - Class A
- IC (Canada) - Class A
- CE (European Union) - Class A
- CCC (China) - Class A
- VCCI (Japan) - Class A
- MIC (Korea) - Class A

Refer to the following sections specific for each regulatory agency. Each section provides country specific EMC/EMI or product safety information.

Information Technology Equipment (ITE), including peripherals, expansion cards, printers, input/output (I/O) devices, monitors, and so on, that are integrated into or connected to the system should match the electromagnetic environment classification of the computer system.

Note: A Notice About Shielded Signal Cables: Use only shielded signal cables for connecting peripherals to any device to reduce the possibility of interference with radio communication services. Using shielded cables ensures that you maintain the appropriate EMC classification for the intended environment.

FCC Notices (U.S. Only)

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including inference that may cause undesired operation.

Note: FCC regulations provide that changes or modification not expressly approved by TippingPoint could void your authority to operate the equipment.

IC Notice (Canada Only)

This Class A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Note: The Industry Canada regulations provide that changes or modifications not expressly approved by TippingPoint could void your authority to operate this equipment.

Cet appareil numérique de la Classe A respecte toutes les exigences du Reglement sur le Materiel Brouilleur de Canada.

CE Notice (European Union)

This is a Class A product. In a domestic environment this product may cause radio frequency (RF) interference, in which case the user may be required to take adequate measures.

This product has been determined to be in compliance with the EMC Directive and the Low Voltage directive of the European Union. This system meets the following technical standards:

- EN 55022
- EN55024
- EN61000-3-2
- EN61000-3-3

CCC Notice (China Only)

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

声明

此为A级产品，在生活环境中， 该产品可能会造成无线电干扰。 在这种情况下，可能需要用户对其干扰采取切实可行的措施。

VCCI Notice (Japan Only)

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective action.

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

MIC Notice (Republic of Korea Only)

This is a Class A device. Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find that this device is not suitable for your use, you may exchange it for a nonbusiness-purpose device.

기 종 별	사 용 자 안 내 문
A급 기기 (업무용 정보통신기기)	이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

2 Getting Started

Provides information on how to identify your SMS, details what is needed to prepare the site, and summarizes the process of installing and configuring the SMS Server and Management Client application.

Chapter Overview

This section includes the following items:

Before You Begin

Before installing the SMS system, make sure to verify that you meet all the following installation, setup, safety, and site requirements:

STEP 1 Read the SMS Release Notes.

STEP 2 Identify which SMS you have by consulting "SMS Identification" on page 8

STEP 3 Gather information and equipment outlined in "Installation and Setup Requirements" on page 9 including the following items:

- SMS Server Equipment
- Network Information
- SMS Client System
- Port Access

STEP 4 Read and follow all information in "Safety" on page 14.

STEP 5 Follow the guidelines listed in "Prepare the Site" on page 17 including the following items:

- Rack Space and Ventilation
- Environmental Requirements
- Power Requirements

SMS Identification

Server Identification — SMS Appliance

SMS servers may have different locations for ports, connectors, buttons, and indicators. To identify which SMS you have, see the following diagrams.

Figure 2 - 1: Server Identification — SMS Appliance

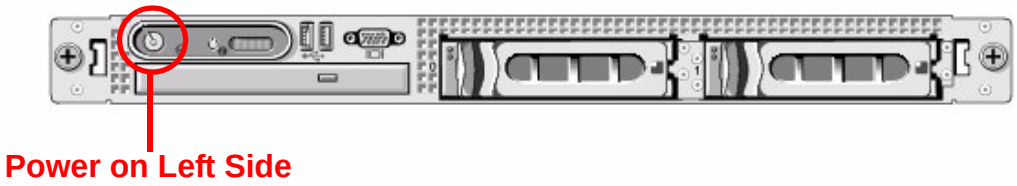


Figure 2 - 2: Server Identification — SMS based on Dell 1850 server

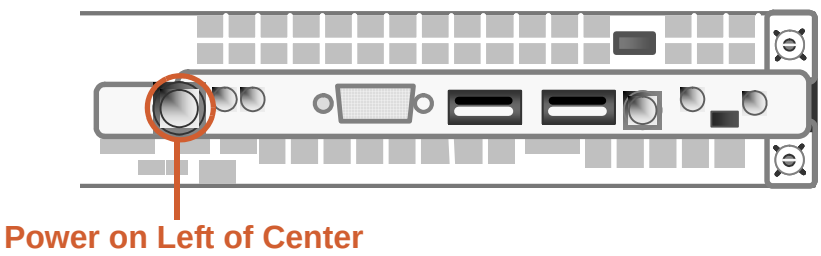


Figure 2 - 3: Server Identification — SMS based on Supermicro server

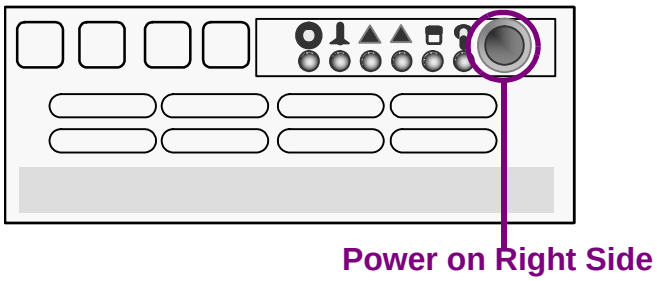
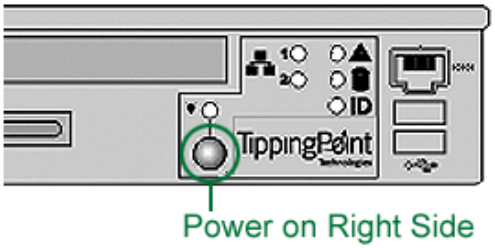


Figure 2 - 4: Server Identification — SMS based on Dell 1750 server

Figure 2 - 5: Server Identification — SMS based on Intel server



Installation and Setup Requirements

Before installing the new TippingPoint SMS, you need to gather materials and prepare the network and installation site. To carefully and correctly install the component(s), read through all preparation instructions and requirements.

SMS Server Equipment

To install the SMS Server, you need the equipment listed in the following table:

Table 2 - 1: Required Hardware for SMS Server Installation

Equipment	Explanation
TippingPoint devices	Through the SMS, you can manage TippingPoint devices.
Rack and cabinet system — two or four post unit (for the SMS Server)	The SMS Server must be mounted in a properly designed cabinet. For detailed installation instructions, see the **Bracket Kit Installation Guide** that came in the box of brackets shipped with your server.
Computer — laptop or PC with terminal emulation software and an active serial port NOTE: For the SMS based on Intel server: Connect RJ-45 to DB-9 serial adapter Use a serial cable such as Category 5 Ethernet patch cable. OR **Monitor and keyboard** —VGA and PS/2* or USB compatible keyboard	To configure the SMS operating, you must connect directly to the SMS Server. There are two ways you can connect: **Serial port** — You can connect a computer from the computer's serial port to the SMS Server serial port. **For the SMS based on Intel server:** Connect a computer from the computer's serial port to the SMS Server's RJ-45 connector with the included adapter and a serial cable. OR **Monitor and keyboard** — You can connect a VGA monitor and keyboard directly to the SMS Server through the server's monitor and keyboard (PS/2* or USB) ports.

*PS/2 ports not available on all systems.

Cabling Requirements

SMS Appliance

The SMS Appliance ships with the following items.

- AC power cable for the power supply
- USB to PS/2 adaptor

SMS Based on Dell 1850

The SMS Based on Dell 1850 Server ships with the following items.

- AC power cable for the power supply
- Cat 5 port extender

You must provide the cables required to connect your system to the network and other devices.

Note: The SMS based on Intel server uses an RJ-45 to DB-9 serial adapter. If you misplace the RJ-45 to DB-9 serial adapter, see Appendix F, "RJ-45 to DB-9 Adaptor" for pin-out information to construct a new one.

Network Information

Before you connect and configure the SMS, collect the following information about your network:

Table 2 - 2: Network Information Requirements

Network Item	Needed Information
SMS Server	• static IP address
	• subnet mask
	• gateway address
Device or devices (the SMS will manage)	• IP address
	• SuperUser name and password
DNS service (optional)	• IP addresses of one or more DNS servers
NTP service (optional)	• IP addresses of one or more NTP servers NOTE: The SMS comes pre-configured to use the public NTP servers that are accessible through the Internet
Remote Management (optional)	If you want to connect to the SMS CLI through remote systems, the remote systems must have one of the following installed: • A telnet client • An SSH version 2 client, using port 123/UDP

SMS Client System

The computer on which you will install the SMS Client must meet the following system requirements:

Table 2 - 3: Client System Requirements

System Item	Requirement
Operating system	• One of the following operating systems: — Windows 98 (2nd edition), Windows NT (Service Pack 5 or later), Windows 2000 (Service Pack 3 or later) or Windows XP — Linux

Table 2 - 3: Client System Requirements (Continued)

System Item	Requirement
Browser	• One of the following browsers: — Internet Explorer (version 6.0 or higher) — Firefox®
Hardware	• 256MB RAM (recommend 384MB RAM) • 100MB hard drive space • 700mhz Pentium® III or faster processor • monitor (recommend a monitor with SVGA resolution (1024x768) and 32-bit color depth.

Port Access

Note: If the SMS Server is behind a firewall, the server must have access to the Internet using port 4043/TCP to the TMC via HTTPS to access the Threat Management Center (TMC) at tmc.tippingpoint.com for package updates.

The SMS Server must have access to port 80/TCP for HTTP general outbound traffic.

SMS Server Access

The SMS Server must also have access to the ports listed in the following table:

Table 2 - 4: Server Access Ports

Port	Access	Purpose
80		Digital Vaccine download
4043/TCP	device	management
161/UDP	device	to send SNMP requests
443/TCP	device	HTTPS
123/TCP	device	NTP
ICMP	device	to check communication
Port 22/TCP	SMS	CLI management
8162 and 8163/UDP	SMS	to receive SNMP traps

SMS Client Access

Client systems must have access to ports listed in the following table:

Table 2 - 5: Client Access Ports

Port	Access	Purpose
80	SMS	Digital Vaccine download
10042/TCP	SMS	client/server communication
443/TCP	SMS	Web browser access via HTTPS
22/TCP	SMS	CLI access via SSH2
443/TCP	SMS	to transmit updates via HTTP
8162 and 8163/UDP	SMS	to receive SNMP traps

For more information, see "Port Requirements and Options" on page 105.

Safety

Before installing your SMS, read this entire Safety section and one of the following *Safety Guidelines* sections for your specific SMS:

- SMS Appliance — "Safety Guidelines" on page 57
- SMS based on Dell 1850 server — "Safety Guidelines" on page 68
- SMS based on Supermicro server — "Safety Guidelines" on page 81
- SMS based on Dell 1750 server — "Safety Guidelines" on page 90
- SMS based on Intel server — "Safety Guidelines" on page 90

To identify which SMS you have, see "SMS Identification" on page 8

General Requirements and Guidelines

If not properly installed and maintained, electrical circuitry equipment like the TippingPoint can pose dangers to both personnel and equipment. There are no serviceable parts inside. To prevent accidents, adhere to the following guidelines to ensure general safety:

- Remove any dust from the area and keep the area around the TippingPoint system clear and dust-free during and after installation.
- Wear safety glasses if you are working under conditions that might be hazardous to your eyes.

Note: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: this device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

See the following list of cautions and warnings for further safety guidelines.

CAUTION: Use proper ESD protection whenever you handle TippingPoint equipment. Do not power up the system while you are installing and connecting the system. If you connect the power improperly and then apply power, the server could be damaged.

The equipment rack must be anchored to an immovable support to prevent it from falling over when one or more servers are extended in front of it on slide assemblies. The equipment rack must be installed according to the manufacturer's instructions. You must also consider the weight of any other devices installed in the rack.

You are responsible for installing an AC power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the server.

The server is designed for an AC line voltage source with up to 20 amperes of overcurrent protection. If the power system for the equipment rack is installed on a branch circuit with more than 20 amperes of protection, you must provide supplemental protection for the server. If more than one server is installed in the rack, the power source for each server must be from a separate branch circuit.

Make sure that the server cooling fans run continuously while the system is powered.

The equipment rack must provide sufficient airflow to the front of the server to maintain proper cooling. It must also include ventilation sufficient to exhaust a maximum of 1200 British Thermal Units (BTUs).

WARNING: Read all of the installation instructions before you connect the system to its power source.

If server power cords are plugged into AC outlets that are part of the rack, then you must provide proper grounding for the rack itself. If server power cords are plugged into wall AC outlets, the safety grounding conductor in each power cord provides proper grounding only for the server. You must provide additional, proper grounding for the rack and other devices installed in it.

When installing the unit, always make the ground connection first and disconnect it last.

Do not work on the system or connect or disconnect cables during periods of lightning activity.

The push-button on/off power switch on the front panel of the server does not turn off the AC power. To remove AC power from the server, you must unplug the AC power cord from either the power supply or the wall outlet.

Hazardous voltage, current, and energy levels are present inside the power supply enclosure. There are no user-serviceable parts inside it; servicing should only be done by technically qualified personnel.

Lifting the server and attaching it to the rack is a two-person job. If needed, use an appropriate lifting device.

Only trained and qualified personnel should install, replace, or service this equipment. Disconnect the system before servicing.

To prevent the unit from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 104° F (40° C). To prevent airflow restriction, allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.

Reliable Earthing

Ensure the mounting rack is reliably connected to earth. When properly installed, the TippingPoint SMS will be grounded through the rack mounting ear's to the rack.

System Grounding

Damage from Electromagnetic Static Discharge (ESD) can occur when electronic components are improperly handled. Its results can be complete or intermittent system failures. Therefore, proper ESD protection is required whenever you handle equipment. It is not necessary to open the TippingPoint SMS chassis to add or remove any components. The following general grounding guidelines apply in the event that a redundant power supply module must be replaced.

Follow these guidelines to prevent ESD damage of the TippingPoint System and its components:

- Always use an ESD wrist strap when adding or removing components from the chassis.
- Avoid touching the circuit boards or connectors on all cards and modules.
- Avoid contact between the printed circuit boards and clothing. The wrist strap only protects components from ESD voltages on the body. ESD voltages on clothing can still cause damage.
- Place a removed component board-side-up on an antistatic surface or in a static-shielding container that is also grounded to the same point as the TippingPoint device. If you plan to return the component to the factory, immediately place it in a static-shielding container.

Before handling the TippingPoint cards or modules, you must first ground yourself to the chassis. This action helps to prevent ESD damage, which can have devastating effects on the components.

Note: To complete this procedure, you must use an ESD grounding strap.

How To: To ground yourself

1. Attach one end of the ESD grounding strap to your wrist. Ensure that it makes good contact with your skin.
2. Attach the other end of the ESD grounding strap onto a grounded surface.

Prepare the Site

Rack Space and Ventilation

Before you install the server, you should determine the total rack space that is required to install your system.

Rack and Clearance

TippingPoint recommends that you mount the SMS Server in a standard 19-inch or 23-inch rack. The vertical hole spacing on the rack rails must meet standard ANSI/EIA-310-C requirements, which call for a one inch (2.54 cm) spacing.

Ventilation

Ventilation and proper location are essential to the proper operation of the SMS Server. Give the unit at least three inches around ventilation openings so that proper ventilation is possible. Also, ensure that the unit is balanced properly on the rack.

Environmental Requirements

For environmental requirements for your specific SMS, refer to:

- SMS Appliance — "Environmental" on page 62
- SMS Based on Dell 1850 — "Environmental" on page 73
- SMS based on Supermicro server — "Environmental" on page 83
- SMS based on Dell 1750 server — "Environmental" on page 83
- SMS based on Intel server— "Environmental" on page 102

Power Requirements

For power requirements for your specific SMS, refer to:

- SMS Appliance— "Power" on page 62
- SMS Based on Dell 1850 server— "Power" on page 73
- SMS based on Supermicro server — "Power" on page 83
- SMS based on Dell 1750 server — "Power" on page 92
- SMS based on Intel server — "Power" on page 102

Installation and Configuration Components

SMS installation and configuration involves the following components:

- SMS Secure Server hardware appliance and the SMS operating software
- SMS Management Client application

Prior to using the SMS system, you need to install and perform configuration procedures on all the components of the SMS system. For installation and configuration instructions, see

- "SMS Server Installation" on page 19
- "SMS Server Setup Wizard" on page 25
- "SMS Client Installation and Setup" on page 41

3 SMS Server Installation

Provides instructions on how to install the SMS Server hardware.

Chapter Overview

This section includes the following items:

Note: Illustrations may not represent your specific system. For SMS diagrams, information about requirements or specifications, refer to the following:

To identify which SMS you have, see "SMS Identification" on page 8.

Server Installation and Setup Overview

STEP 1 Read the SMS Release Notes.

STEP 2 Read and follow all instructions in "Getting Started" on page 7.

STEP 3 Unpack and Mount the SMS Server.

STEP 4 Connect Power Source and Network Cables.

STEP 5 Connect a Monitor to the SMS Server

STEP 6 Power On and Check LEDs.

STEP 7 Mount the Bezel.

SMS Server Installation Details

Note: You can install and update the SMS without having a device configured in the current SMS.

Unpack and Mount the SMS Server

Each system server is securely packaged in a shipping box. The server ships with all required hardware and software installed.

CAUTION: If you do not take necessary precautions, electromagnetic static discharge (ESD) can damage the server. Installation and maintenance personnel should be properly grounded using ground straps to eliminate the risk of ESD damage to the equipment. The chassis is subject to ESD damage whenever it is removed from the server.

Use caution when opening the TippingPoint boxes.

1. Inspect the packing containers. If you see any damage or other signs of mishandling, inform both the local freight provider and TippingPoint before unpacking. Your freight provider can provide you with the procedures necessary to file a claim for damages.
2. Carefully open the box and remove all packing material.
3. Verify the contents in the shipping package. Compare the packing list to your shipment and to your order. If items are missing, contact your TippingPoint sales or field representative.
4. Remove the server from the box. Check to ensure that items listed on the packing slip are present in the server. If they are not, contact your TippingPoint sales or field representative.
5. Inspect all the equipment inside for damage. If you think any equipment might be damaged, contact your freight provider for how to lodge a damage claim. Also, contact your Tipping Point sales or field representative for instructions.
6. Bolt the server to the rack, or attach it to the rails provided. For details on how to install your system into a rack, see the *Rack Installation Instructions* included with your rack solution.

WARNING: To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable.

- If the rack is partially filled, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack comes with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

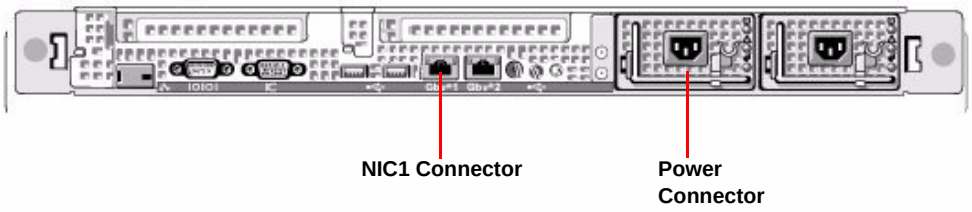
- If you plan to expand your system to include more servers in the future, allow space in the rack for additions. During the initial installation, pay attention to the weight distribution and stability of the rack.

Please Recycle: The shipping materials are recyclable. Please save for later use or dispose of them appropriately.

Connect Power Source and Network Cables

Use the following illustration as a guide to connect the power and network cables to the SMS Server. Your SMS may vary from this illustration.

Figure 3 - 1: SMS Appliance Back Panel



Connect the Server to a Power Source

1. Locate the male power inlet on the back of the server.
2. Plug one end of a standard female power plug into the outlet.
3. Plug the other end of the plug into an AC outlet or power strip.

Connect the Server to the Network

Connect the server to the network using the NIC1 Connector. You must use a 10 or 100 mbps hub or switch.

1. Locate the NIC1 connector, labeled Gb 1, on the back panel of the server.
2. Use an Ethernet cable to connect the NIC1 connector to a 10 or 100mbps hub or switch.

Connect a Monitor to the SMS Server

To configure the operating software, you need a monitor and keyboard or a laptop computer to connect to the server hardware component and work directly with the software through the SMS command Line Interface (CLI). You can use a standard VGA Monitor and keyboard, a dumb terminal or a computer with a terminal emulation program.

VGA Monitor and Keyboard Option

1. Plug the monitor cable into the VGA monitor port on the SMS.
2. Plug the keyboard into the keyboard connector (PS/2 or USB port) on the SMS.

Terminal or Computer (with Emulation Program) Option

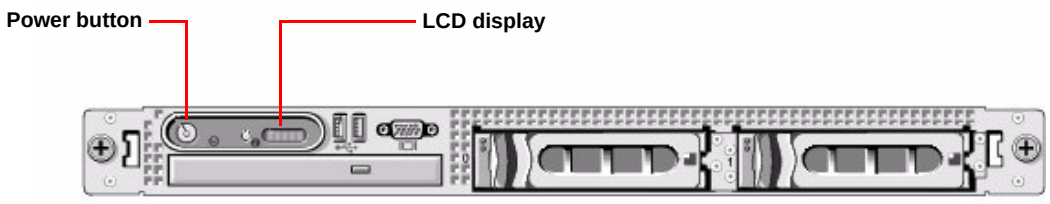
Use a serial cable and the included RJ-45 to DB-9 serial adaptor to connect a dumb terminal or computer with terminal emulation to either the front or back RJ-45 serial port on the SMS Server. Make sure to use the following settings:

- line speed of 9600
- parity set to None
- data bits set to 8
- stop bits set to 1

Power On and Check LEDs

Use the following illustration as a guide to start the system and check its operation.

Figure 3 - 2: SMS Appliance Front Panel



1. Press the power button on the front panel. The system will begin its startup process.
2. While the system is starting up, check the following indicators to ensure that these components are functioning properly:

Table 3 - 1: Power and LCD indicators

Indicator	Display	Description
Power button	Green	Indicates that power is supplied to the system and the system is operational.

Table 3 - 1: Power and LCD indicators

Indicator	Display	Description
LCD display	SYSTEM NAME, in blue	Indicates normal operations. For information about LCD status message, see "LCD Status Messages" on page 51.

Table 3 - 2: Power Supply and NIC Indicators

Indicator	Display	Description
Power supply status indicator	Green	Indicates that the power supply is operational.
AC line status indicator	Green	Indicates that a valid AC source is connected to the power supply.
NIC 1 link indicator	Green	Indicates the NIC is connected to a valid link partner on the network.
NIC 1 activity indicator	Blinking Amber	Indicates network data is being sent or received

As the SMS starts up, the TippingPoint splash screen is displayed for up to 90 seconds on the VGA monitor. A series of system messages are written to the serial port and displayed on the monitor.

Mount the Bezel

To mount the bezel, place it between the server handles and push it toward the front of the server until it snaps into place. To lock the bezel, insert the key in the lock. Turn the lock clockwise, approximately a quarter turn, until it stops. The bezel is now locked and cannot be opened.

4 SMS Server Setup Wizard

Provides instructions on how to configure the SMS Server using the SMS Initial Setup Wizard.

Chapter Overview

This chapter includes the following sections:

Overview

Note: You can install and update the SMS without having a device configured in the current SMS.

There are multiple ways in which you can configure your SMS server appliance:

- SMS Initial Setup Wizard — Runs automatically when you first log onto the SMS. This wizard is run on a serial port connected system, such as a workstation and laptop. This chapter provides detailed information and examples regarding the SMS Initial Setup Wizard.
- The CLI setup command — Can be run at anytime. Allows you to reset the same configuration options as in the SMS Initial Setup Wizard.
- Additional Configuration — After you run the SMS Initial Setup Wizard, you can further configure your system using commands through the CLI. For more information on using the CLI commands, see the *TippingPoint Security Management System User's Guide*.

After the SMS server setup is complete, download and install the SMS client application. See Chapter 5, “SMS Client Installation and Setup”

Wizard Configuration Options

After you have unpacked and installed the TippingPoint SMS server appliance, you configure the SMS using the SMS Initial Setup Wizard. When you first logon to the SMS, the SMS Initial Setup Wizard runs automatically.

The SMS Initial Setup Wizard runs a series of short interactive dialogs, on the command line interface (CLI), that guide you through the configuration of the SMS.

To use the wizard setup dialogs:

- Each prompt displays the default values in brackets ([ ]).
- To accept the default value, press the <Enter> key.
- To clear a value, type a period (.)

The configuration dialogs are summarized in the following table and described in more detail in the rest of this chapter:

Table 4 - 1: SMS Initial Setup Wizard Configuration Dialogs

Step #	Setup Dialog	Page	Settings
1	Login to the SMS CLI • Log in to the SMS Appliance as a SuperUser. • Review and accept the License Agreement.	page 27	
2	Keyboard Layout (optional) • Specify keyboard layout (optional).	page 28	keyboard layout
3	Account Security Level • Specify security level.	page 29	account security level
4	Super User Account • Create a username. • Create and confirm a new password.	page 30	super user login name super user password
5	Host Management Port Options • Enter management IP address. • Enter network mask. • Enter default gateway (optional). • Enter DNS server (optional).	page 32	Host IP address network mask address default gateway address DNS server address

Table 4 - 1: SMS Initial Setup Wizard Configuration Dialogs (Continued)

Step #	Setup Dialog	Page	Settings
6	Host Information • Enter host name to describe the SMS. • Enter host location (optional). • Enter system contact (optional).	page 33	host name host location contact information
7	Timekeeping Options (optional) • Enter time zone. • Configure or disable NTP.	page 34	time zone NTP IP addresses
8	Server Options (optional) • Enable SSH server. • Enable Telnet server. • Enable HTTPS sever. • Enable HTTP server. • Enable SNMP server. • Enable ICMP echo (ping) support.	page 36	SSH Telnet HTTPS HTTP SNMP ICMP
9	NMS Settings (optional) • Enable trap generation.	page 38	SNMP trap destination SNMP trap community name
10	Email Contact Information (optional) • Configure email contact information.	page 38	SMTP notify list SMTP server IP SMTP from user SMTP reply to user
11	Diagnostics	page 39	

Login to the SMS CLI

Tip: You can establish new logon sessions by pressing `Alt-F1` through `Alt-F6` respectively for each new session.

After you have completed the hardware setup and applied power to the system, a TippingPoint splash screen displays for up to 90 seconds on the VGA monitor. A series of system status messages display to the console.

When you log in to the SMS, the CLI opens and prompts you for a username. For the first login, you do not need a password. A series of messages about the system status is displayed.

At the SMS CLI prompt, log in as the user SuperUser.

```
sms-server login as: SuperUser
```

The following information displays:

```
Authorized users only. All activity may be monitored and reported.

Welcome to the TippingPoint Technologies SMS Initial Setup wizard.

At this point, you will be presented with some questions along with
defaults in brackets[]. Please update any empty fields or modify them
to match your requirements. You may press the ENTER key to keep the
current default value, and '.' to clear an existing value. To abort out
of this sequence, press Ctrl-C. To restart the sequence at a later
time, run 'setup'.

You will be asked to confirm the answers at the end, so don't worry if
you make any mistakes.
```

Note: You will be asked to confirm your answers at the end **of each dialog section**, not at the end of the entire wizard.

Review and accept the license agreement.

Keyboard Layout

After you have logged in, you will be asked the following:

```
Would you like to configure your keyboard layout? <Y,[N]>:
```

If you reply `yes`, then set your keyboard layout as follows:

```
This procedure will lead you through setting the
layout for your keyboard. The following layouts are available:

Available keyboard layouts (kbd.available-layouts) =
```

applkey	dvorak-r	it2	se-ir209
azerty	emacs	jp106	se-lat6
backspace	emacs2	keypad	se-latin1
be-latin1	es	la-latin1	sg
bg-cp1251	es-cp850	lt	sg-latin1
bg-cp855	et	lt.baltic	sg-latin1-lk450
bg_bds-cp1251	et-nodeadkeys	lt.l4	sk-prog-qwerty
bg_bds-utf8	euro	mk	sk-prog-qwertz
bg_pho-cp1251	euro1	mk-cp1251	sk-qwerty
bg_pho-utf8	euro2	mk-utf	sk-qwertz
br-abnt	fi	mk0	slovene
br-abnt2	fi-latin1	nl	sr-cy
br-latin1-abnt2	fi-latin9	nl2	sv-latin1

```
br-latin1-us      fi-old          no            tr_f-latin5
by                fr              no-latin1     tr_q-latin5
cf                fr-latin0       pc110         tralt
croat             fr-latin1       pl            trf
ctrl              fr-latin9       pl2           trq
cz                fr-old          pt            ua
cz-cp1250         fr-pc           pt-latin1     ua-utf
cz-lat2           fr_CH           pt-latin9     ua-utf-ws
cz-lat2-prog      fr_CH-latin1    ro_win        ua-ws
cz-us-qwertz      gr              ru            uk
de                gr-pc           ru-cp1251     unicode
de-latin1         hu              ru-ms         us
de-latin1-        hu101           ru-yawerty    us-acentos
nodeadkeys
de_CH-latin1      il              ru1           wangbe
defkeymap         il-heb          ru2           wangbe2
defkeymap_V1.0    il-phonetic     ru3           windowkeys
dk                is-latin1       ru4
dk-latin1         is-latin1-us    ru_win
dvorak            it              se-fi-ir209

Result: Success

Please enter the keyboard layout you want to use.
Press ENTER without entering anything to retain your
current configuration.

Your current keyboard layout is: defkeymap

WARNING: Setting your keyboard layout to a value with
which you are not familiar could render your system
inaccessible. If you are not sure of what you are doing,
please press the Enter key to leave your current keyboard
layout unchanged.

Console keyboard layout (kbd.layout=[defkeymap]) =
```

Account Security Level

User security levels and restrictions for entering user names and passwords provide added user access security.

Table 4 - 2: Account Security Levels

Level	Level Name	Description
Level 0	Weak — No Security Checking	User names cannot have spaces. Passwords are unrestricted.

Table 4 - 2: Account Security Levels (Continued)

Level	Level Name	Description
Level 1	Basic — Basic Security Checking	User names must be at least 6 characters long without spaces. Passwords must be at least 8.
Level 2	Recommended — Maximum Security Checking	Includes Level 1 restrictions and requires the following: 2 alphabetic characters, 1 numeric character, 1 non-alphanumeric character (special characters such as ! ? and *).

Example

Select the security level for user access. The SMS provides three types of security level access. By default, the SMS uses security level 2. Enter a security level as displayed:

```
There are three security levels for specifying user names and
passwords:

Level 0: User names and passwords are unrestricted.
Level 1: Names must be at least 6 characters long; passwords at least
8.
Level 2: In addition to level 1 restrictions, passwords must contain:
             - at least 2 alpha characters
             - at least 1 numeric character
             - at least 1 non-alphanumeric characters
Please specify a security level...
Level:  [0]-Weak, [1]-Basic, [2]-Recommended? <0,1,2>: 2
```

Note: If you press **Enter** without specifying a security level, the default setting, Level 2, is used.

Super User Account

User Name

A login name for the account. A valid login name must meet the restrictions of the set security level. The levels require the following:

- Level 0 — Any length (1 or more) and format is allowed for the user name and password. You must not include spaces.
- Level 1 and 2 — The name must contain at least six (6) characters and no spaces.

Table 4 - 3: Login Name Examples

Valid Login Names	Invalid Login Names
fjohnson	fredj (too short)
fredj123	fred j 123 (contains spaces)
fredj-123	fj123 (too short)

Table 4 - 3: Login Name Examples (Continued)

Valid Login Names	Invalid Login Names
fredj-*123	fj 123 (contains spaces)

User Password

Note: When you view logs, the user listed for the logged events may include SMS, LSM, and CLI. These applications use a Super-User level of access to make entries into the audit log.

A login password for the account. A valid password must meet the restrictions of the set security level. The levels require the following:

- Level 0 — No restrictions. Any length and format is allowed for the user name and password. The password may have no characters (empty).
- Level 1 — It must contain at least eight (8) characters.
- Level 2 — it must contain at least eight (8) characters with the following restrictions:
  - — it must contain at least two alphabetic characters
  - — it must contain at least one numeric character
  - — it must contain at least one non-alphanumeric character–a non-alphanumeric character includes any character that is not a digit or a letter. You cannot use spaces.

Table 4 - 4: Password Examples for Level 2 Security

Valid Passwords	Invalid Passwords
my-pa55word	my-pa55 (too short)
my-b1rthday	mybirthday (must contain numeric)
myd*g'snam3	mydogsnam3 (must contain a non-alphanumeric character)

Example

Enter the user account name. This account has the superuser level of access, allowing the account to fully access all features of the SMS. You will enter a user name following the conventions of the security level.

```
Please enter a user name that we will use to create your superuser
account.
Spaces are not allowed.

Name: sjohnson

Do you wish to accept [sjohnson]? <Y,[N]>: Y
```

```
Result: Success
```

Note: If you do not follow the user name conventions according to your security level, the setup does not accept the user name and prompts for a new one. A message displays with the following: "Result: User names must not be shorter than 6 characters (0x87)".

Enter the new password. The system prompts you to enter the new password again to confirm it. After you enter the correct data, the system displays a success message. The password displays as a line of periods (.). As you enter a password, the periods are replaced with asterisks (*).

```
Level 2: Names must be at least 6 characters long; passwords at least
8.
            - at least 2 alpha characters
            - at least 1 numeric character
            - at least 1 non-alphanumeric character
New password:     ******************************
Confirm password: ******************************

Result: Success
Your superuser account 'sjohnson' has been created.
```

Host Management Port Options

The Host Management port is the Ethernet port located on the host processor module. You use the Host Management or the serial port to connect to your TippingPoint device when you use the Command Line Interface and when you use the SMS.

Host IP Address

The Host IP address is the IP address through which you access your TippingPoint device. The Host IP address must meet the following criteria:

- standard IP v 4 address format (XXX.XXX.XXX.XXX).
- contained within your local network, but must not be contained within any of the subnets that will be passing traffic through the Multi-Zone Defense Module.
- accessible from the workstation from which you will perform SMS management activities

Network Mask

The network mask for the subnet on which the SMS is located.

Example

Enter the Management IP address and Network Mask for the SMS Server.

```
The host management port is used to configure and monitor this
appliance via a network connection (e.g., the SMS client GUI).


Enter Management IP Address []: 172.16.5.233
Enter Network Mask [255.255.255.0]:
```

Default Gateway

The Default Gateway options enable you to set up the routing information the SMS needs to communicate with other networks. The default gateway is the IP address through which communications with other subnets are routed. If the system sends a message to an IP address outside of its subnet, the message and the reply goes through the default gateway.

Example

Enter the default gateway IP address. Enter a value. If you enter without entering data, you leave the default gateway undefined.

```
The default gateway is a router that enables this device to communicate
with other devices on the management network outside of the local
subnet.

Enter Default Gateway (optional) []: 172.16.5.1
```

Domain Name Service

The Domain Name Service (DNS) provides resolution of host names and reverse IP address lookup.

Example

Enter the Domain Name Service (DNS) server.

```
The Domain Name Service (DNS) server is used to resolve hostnames and
provide reverse IP address lookup.


Enter DNS Server-1 (optional) []: 172.16.5.4
```

A verification message displays for the data. Enter A for accept.

```
              Host IP: 172.16.5.233
         Network Mask: 255.255.255.0
      Default Gateway: 172.16.5.1
         DNS Server-1: 172.16.5.4

Enter: [A]ccept, [C]hange, or [E]xit without saving? <A,[C],E>:a
```

Host Information

The Host Information options allow you to enter data for the name and location of the SMS host and a contact for responding to issues.

Host Name

The host name of the SMS. Use the same name that the SMS will be known as on your network.

Host Location

The host location is the physical location of the SMS. It is for informational purposes only.

Example

Enter the SMS host information, including name, location, and system contact.

```
Enter Host Name [sms-server]: sms3.qalab.company.com
Enter Host Location (optional) [room/rack]: QA lab
Enter System Contact (optional) [TippingPoint Customer Contact]: Bob
Smith
```

A verification message displays. Enter A for accept.

```
            Host Name: sms3.qalab.company.com
        Host Location: QA lab
      System Contact: Bob Smith

Enter: [A]ccept, [C]hange, or [E]xit without saving? <A,[C],E>:
```

Timekeeping Options

The Timekeeping Options allows you to select a time zone for the SMS.

Time Zone

The time zone option enables you to calculate and show the local time. System logs are kept in Universal Time (UTC), but the device calculates local time for display purposes. Entering the proper time zone enables the device to display local time properly.

The following list details the time zone options:

- GMT (Greenwich Mean Time)
- WET (Western Europe Time), GMT+0:00
- CET (Central Europe Time), GMT+1:00
- EET (Eastern Europe Time), GMT+2:00
- MSK (Moscow Time), GMT+3:00
- AWST (AU Western Standard Time), GMT+8:00
- JST (Japan Standard Time), GMT+9:00
- ACST (AU Central Standard Time), GMT+9:00
- AEST (AU Eastern Standard/Summer Time), GMT+10:00
- NZST (New Zealand Standard Time), GMT+12:00
- HST (Hawaiian Standard Time), GMT-10:00
- AKST (Alaska Standard Time), GMT-9:00
- PST (Pacific Standard Time), GMT-8:00
- Arizona, GMT-7:00
- MST (Mountain Standard Time), GMT-7:00
- CST (Central Standard Time), GMT-6:00
- Indiana, GMT-5:00
- EST (Eastern Standard Time), GMT-5:00
- AST (Atlantic Standard Time), GMT-4:00

NTP

The NTP or SNTP, is the Network Time Protocol. SNTP servers are central servers that keep time coordinated with a central atomic clock. SNTP servers help keep network time synchronized so that network events that occur on different hosts can be compared.

A valid entry will meet the following criteria:

- a valid IP address for an SNTP primary time server

Example

Enter Y to modify time zone and NTP settings.

```
Timekeeping options allow you to set the time zone, enable or disable
daylight saving time, and configure or disable NTP (Network Time
Protocol).

Would you like to modify timekeeping options? <[Y],N>:
```

Note: SMS does not support Daylight Savings Time (DST). DST will be supported in a subsequent release.

Select the time zone. You can scroll through the list of zones with the **+** or **-** keys until you find the correct zone and press **Enter**.

```
Enter time zone used for display:  (Scroll with +/-)
Time zone:  CST  (Central Standard Time), GMT-6:00
Result: Success
```

Enter Y or N to enable the NTP (Network Time Protocol) client. If you enable NTP, enter the IP address of 1 to 3 NTP servers. Enter a period (.) to clear an address. Press **Enter** to accept the default.

The following dialog displays the prompts when entering Y to use the NTP client.

```
Do you want to enable NTP client? <[Y],N>:
Result: Success
Enter the list of NTP servers ('.' will clear a value):
NTP server 1 (ntp.server1=[192.43.244.18]) = 172.16.5.4
NTP server 2 (ntp.server2=[192.5.41.40]) = 172.16.5.152
NTP server 3 (ntp.server3=[128.9.176.30]) = 216.136.56.158
Result: Success
A reboot is required for the new time zone to take effect
```

Note: When you complete the setup, the system reboots to take these changes into effect. Do not reboot at this time.

The following dialog displays the prompts when entering N for NTP. The setup prompts for time settings.

```
Do you want to enable NTP client? <[Y],N>: n
Result: Success

Please confirm the current date and time...
Date <YYYY-MM-DD> (time.yyyymmdd=[2003/11/20]) =
Time <HH:MM:SS> (time.hhmmss=[09:55:03]) =
```

Server Options

The Server Options dialog enables you to turn your servers on and off. You should always use the secure Web and CLI servers (HTTPS and SSH) when conducting normal operations. You should only use the non-secure (HTTP and telnet) servers for troubleshooting if you cannot get the secure alternatives.

Secure and Non-Secure Operation

You can enable the secure and non-secure servers for the CLI (SSH and telnet). You cannot enable both the secure and non-secure servers for the Web. This is to prevent inadvertent security lapses within your network security infrastructure. In practical terms, this means that if you enable the HTTPS server the HTTP server is disabled.

SMS Management

The HTTPS server is required for SMS management. The implication of this is that if you will be using the SMS to manage your devices, you cannot run the non-secure HTTP server.

Default Server Settings

The default settings of the Web, SMS CLI, and SNMP servers are:

Table 4 - 5: Default Web, CLI, and SNMP Server Options

Name	Default Setting	Required By	Reboot Required
SSH	ON	secure CLI over network	no
Telnet	OFF	non-secure CLI over network	no
HTTPS	ON	secure SMS	yes
HTTP	OFF	non-secure SMS	yes
SNMP	OFF	required for NMS	yes
ICMP	OFF	required by ping	no

Note: If you modify settings, you must reboot if it has “yes” for Reboot Required. When you complete the setup, the system reboots to take these changes into effect.

SSH Server

The SSH Server enables encrypted terminal communications. The SSH server must be enabled to establish a secure CLI session over your network.

Telnet Server

The telnet server enables telnet connections to the device. The telnet server can be enabled to run non-secure CLI sessions over your network.

CAUTION: The Setup Wizard enables you to activate the telnet server. Telnet is not a secure service. If you enable telnet, you endanger the security of your TippingPoint device. Use SSH instead of telnet when you are conducting normal operations.

HTTPS Server

The HTTPS server is a Web server. It enables you to perform encrypted file transfers over your network. The HTTPS server must be enabled to use SMS management. You can also run the LSM using the HTTPS server.

HTTP Server

The HTTP server is a Web server. You may disable the HTTP server and use the HTTPS server to run the LSM. You can enable the HTTP server to run non-secure LSM session on your network.

CAUTION: he Setup Wizard enables you to activate HTTP. HTTP is not a secure service. If you enable HTTP, you endanger the security of your TippingPoint device. Use HTTPS instead of HTTP for normal operations.

SNMP Server

The SNMP Server provides access to interface counters and other statistics, configuration data, and general system information via the Simple Network Management Protocol (SNMP). The SNMP server must be enabled to use SMS management or to allow NMS access.

Example

Select and configure server options as needed. If you enter Y, the setup will prompt you to enter configuration settings as appropriate for each service.

```
Server options allow you to enable or disable each of the following
servers: SSH, Telnet, HTTPS, HTTP, and SNMP. The ability to respond to
ICMP echoes (ping) can be disabled as a security measure.

Would you like to modify the server options? <Y,[N]>: Y
```

If you enter Y, you receive the following messages. The setup prompts you to enter each setting.

```
Enable the SSH server? [yes]:
Enable the Telnet server? [no]:
Enable the HTTPS server? [yes]:
Enable the HTTP server? [no]:
Enable the SNMP server? [no]:
Enable ICMP echo (ping) support? [no]: yes

                SSH: yes
             Telnet: no
              HTTPS: yes
               HTTP: no
               SNMP: no
```

```
Ping: yes
```

A verification message displays. Enter A to accept settings.

```
Enter: [A]ccept, [C]hange, or [E]xit without saving? <A,[C],E>:A
```

NMS Settings

The Network Management System (NMS) Options dialog enables you to configure the NMS settings available for the device. This feature enables monitoring of the device by a restricted NMS, such as HP OpenView™. If you configure the setting, the setup prompts you to provide a remote trap server for the SNMP destination. You can also enter a community name for the generated traps.

Example

Enter Y or N to configure the Network Management System for the SMS.

```
A Network Management System such as HP OpenView(TM) can be used to
monitor and receive SNMP traps from your TippingPoint device.

Would you like to configure a Network Management System? <Y,[N]>: Y
```

Enter the SNMP trap destination.

```
The SMS can generate traps to a remote trap server.
To enable trap generation, specify a remote trap server.
('.' to clear the value)

SNMP trap destination (snmp.trap-dest=[]) = 172.16.5.4

Result: Success
```

Enter the SNMP community name for the generated traps.

```
Enter the community name that will be used in the generated traps:

SNMP trap community name (snmp.trap-community=[public]) = private

Result: Success
```

Email Contact Information

The Default Alert options dialog allows you to enter email addresses to receive filter alerts. You can enter multiple email addresses, using a comma (,) to separate the addresses. You can also add an exclamation mark after an email address as a flag for urgent deliveries or alert messages.

Example

If you want the SMS to send notifications through SMTP email, enter the email addresses. Separate the addresses with commas. You can also add an exclamation mark after an email address as a flag for urgent deliveries. To clear the list, enter a period (.).

```
Would you like to configure email? <Y,[N]>: y

The SMS can transmit email notifications to a list of SMTP email
addresses. Enter the addresses separated by commas (','). If the
exclamation character ('!') is used as the first character in the email
destination list, then the email is flagged with urgent delivery. (use
'.' to clear the list)

Enter SMTP notify list [null]:!pat@company.com,susie@company.com
Enter SMTP server []:
Enter SMTP from user (optional) [null]:
Enter SMTP reply to user (optional) [null]:


     SMTP Notify List:
          SMTP Server:
        SMTP From User: null
   SMTP Reply To User: null
```

Diagnostics

In the final step, the setup wizard runs diagnostics to review the configuration settings you entered. After the diagnostics complete and the review of your system displays, the system reboots to implement the settings. When the reboot completes, the SMS opens allowing you to log in and complete further configurations through the client.

Example

```
Diagnostic tests can be executed with the 'diags' command...

Executing diagnostics:

Testing: sys ... OK
Testing: db ... OK
Testing: net ... OK
Testing: password ... OK

Tests passed!


Thank you! The first step in the box setup is now complete. In order
to finish the installation procedure, you must now download and
install the SMS client software onto a Windows machine.


Based on your configuration of the CLI and Web servers, you can
configure or monitor this appliance via the management port or the
serial port.

If you wish to run this wizard again, use the 'setup' command.
Use 'help' or 'help --cmds' to learn about other CLI commands.
```

```
Next, browse to your SMS machine to download the client software:

  https://172.16.5.233
```

The setup prompts if you want to reboot. Enter Y to reboot.

```
A reboot is recommended to adjust to new timezone and network settings.
Reboot NOW: Are you sure? <[Y],N>: Y

Result: Success
sms-server SMS=>
Broadcast message from root (Thu Nov 20 09:50:13 2003):

Notification: SMS: system is rebooting

Broadcast message from root (Thu Nov 20 09:50:15 2003):

Rebooting the system now...
```

After the SMS server setup is complete, download and install the SMS client application. See Chapter 5, “SMS Client Installation and Setup”

5 SMS Client Installation and Setup

Provides information for installing and configuring the SMS Management Client application.

Chapter Overview

This section includes the following items:

SMS Client Installation and Setup Overview

STEP 1 Install the SMS Client.

STEP 2 Logon to the SMS Client.

STEP 3 Perform Initial Management Tasks including the following items:

- Add a Device
- Import a Digital Vaccine Package.

SMS Client Installation Details

Install the SMS Client

The SMS Client software contains the interface through which you manage your TippingPoint system. You download, install, and run the SMS Client on a Windows or Linux-based computer. You download the SMS Client installation software from your SMS Server's home page using a Web browser on the Windows or Linux-based computer.

How To: To install the SMS Client:

1. On your computer, start your Web browser.
2. In the Address field, enter:

   `https://<smsipaddr>`

   where <*smsipaddr*> is the IP address you configured for your SMS.
3. On the SMS home page, click the Install the Client link under SMS Client Software.
4. To download and launch the client installation program at your computer, complete the instructions described on the SMS Client Installation Web page.
5. Start the client by double-clicking the TippingPoint SMS Client icon on your desktop.

Figure 5 - 1: SMS Client Icon

6. After installing and opening the application, you should download, install, and activate the latest Digital Vaccine from the TMC Web site.

Logon to the SMS Client

When you start the SMS Client, the SMS Log On dialog box is displayed. It includes the following fields:

- SMS Server—the IP address or fully qualified hostname of the SMS Server
- Username—a user name for a user account defined on the SMS
- Password—the password defined for that user account

How To: To log on to the SMS Client

1. Double-click the TippingPoint SMS Client icon on your desktop. The SMS Log On screen displays.

Figure 5 - 2: SMS Logon screen

2. In the SMS Server field, type the IP address or fully qualified hostname of your SMS Server.
3. In the Username field, type your user ID. For initial configuration, use SuperUser.
4. In the Password field, type the password you defined in the SMS Setup Wizard.
5. Click Login.

At the bottom of the dialog box, the status message Attempting to connect is displayed. After a few seconds, the message Connected, logging in appears. When you log in successfully, the SMS Dashboard displays.

Note: If you see the error message "Connect Failed", verify that you have entered the correct IP address or full qualified host name for the server. You might also need to verify that the server is properly connected to the network and that the network is up.

Note: If you see the error message "Can't authenticate! Retype and try again,' verify that you have typed the correct username and password.

Note: You can verify network connectivity by trying to open the SMS home page through the Internet Explorer browser. The default configuration of the SMS does not respond to pings.

Perform Initial Management Tasks

TippingPoint recommends that you begin using your SMS by completing the following initial management tasks.

Note: The following tasks are written for customers who are installing a TippingPoint device or SMS for the first time. The procedures required for other circumstances are beyond the scope of the SMS Installation and Configuration Guide. They are described in detail in the SMS User's Guide.

- Add a Device — To use the SMS, you must manage at least one device. The following procedure adds a device for management.
- Import a Digital Vaccine Package — You must ensure that the devices you manage have the latest update of filters. The SMS uses a base set of filters, loaded with the Digital Vaccine package that was current at the time that the SMS was manufactured. TippingPoint recommends that you check and update your system with the latest Digital Vaccine package from the Threat Management Center (TMC). You can use the SMS to directly download the updates or import the updates from a file. For complete information about these processes, see the *SMS User's Guide*.

Note: The SMS will report the events passed to it from the devices, but can not identify the filters associated with those events in the following cases:

• A Digital Vaccine package is NOT installed on your SMS and your devices do have packages installed.

Or

• The version of the Digital Vaccine package on your SMS does NOT match the version on your devices.

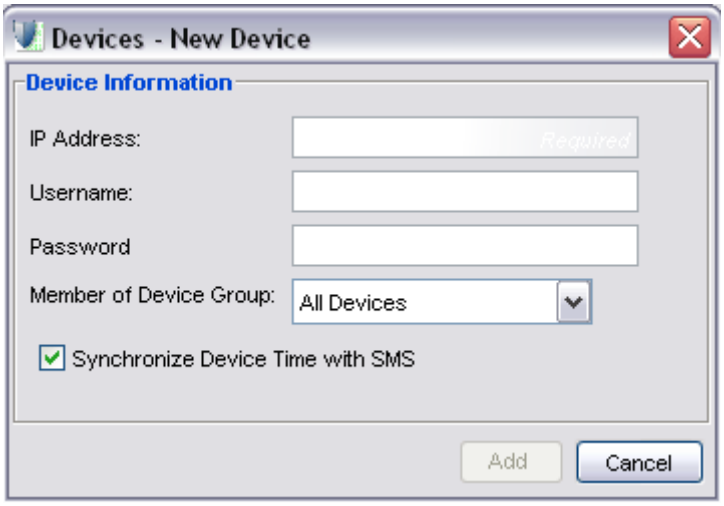
You should also create user accounts for the user who will administer and operate your SMS system. You can enhance the security of your system by assigning them roles that restrict their access to specific functionality. For more information about user accounts, see the "Administration" chapter in the *SMS User's Guide*.

Add a Device

1. Click **Devices** on the SMS Toolbar. The **Devices** screen displays.
2. On the **Devices** Navigation pane, click **All Devices**.

3. Do one of the following:
   - On the All Devices screen, click New Device.
   - On the Menu Bar, select the File —> New —> Device.

Figure 5 - 3: Devices - Add Device dialog box



4. Enter the IP Address of a device.
5. Enter the Username for a SuperUser account defined on a device.
6. Enter the Password associated with the SuperUser account.
7. Click Add. At the bottom of the dialog, a status bar displays blinking green icons and status messages as the SMS processes your request.
   The dialog box closes automatically after each device is added.
8. Repeat the previous steps to add multiple devices.
9. From the Devices window, check the health of the devices by verifying that the Health status indicator is green.

Note: If the device displays as yellow, the device may have segments that are not connected to the network.

To review the health and status, management, and configuration of your devices, see the *SMS User's Guide*.

Import a Digital Vaccine Package

1. In a Web browser, open https://tmc.tippingpoint.com.

   If you have not already done so, create a TMC account using your Customer ID and Serial Number.

2. From the navigation pane on the left, click Digital Vaccines. The page lists all available software images. The most recent version is at the top of the list.
3. Click the More Info button next to the most recent package.

4. In the Download File page, click the Download Now button. After a few seconds, the File Download dialog box is displayed.
5. Click Save. The Save As dialog box displays.

   Navigate to the location where you want to save the file, and click the Save button. The file will be saved to the location you specified.

Note: To avoid unexpected behavior on the SMS, do not change the name of this file.

6. In the Packages Navigation pane, click Digital Vaccines. The Packages - Digital Vaccines screen displays.
7. Do one of the following:
   - In the DV Inventory section, click Import.
   - On the Menu Bar, select the File —> Import —> Digital Vaccine menu item.
   - Right-click an entry and click Import.
8. Locate and select the file to import. Click OK to begin import.

The file imports and displays in the DV Inventory section and Packages Navigation pane.

You can now make this package active is desired, as well as view details, distribute, and remove the package. See the "Packages" chapter in the *SMS User's Guide* for details on activating and distributing the Digital Vaccine.

SMS Operation

You have completed the installation and setup of the SMS Server hardware and Client management application. With the installation complete, the TippingPoint system is blocking attack traffic, detecting malicious attacks, and managing associated devices.

For more information about how your system works, we recommend that you do the following:

- Consult the *SMS User's Guide*.
- Browse and examine the Packages screen. This screen displays the filters available on your system through the Profiles section.
- Browse and examine the Events screen. This screen displays the logged attack events detected and compiled of the system.
- Browse and examine the Reports screen. This screen displays a set of available reports and allow you to create and view custom reports on the system.

A SMS Appliance

Provides specifications, hardware requirements and safety information for the SMS Appliance.

Chapter Overview

Note: The SMS Appliance has the power button on the left side of the center panel. To identify which SMS you have, see "SMS Identification" on page 8.

This appendix includes the following topics:

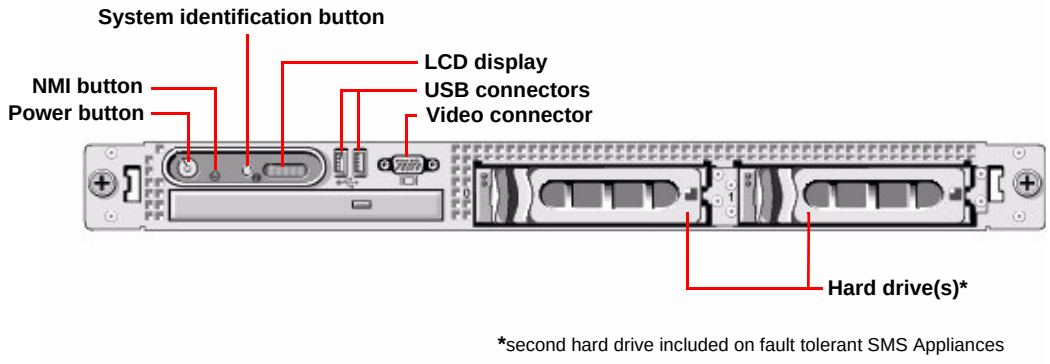
Server Description

To insure proper performance, review the information described in the following sections:

SMS Front Panel

The following figure shows the controls, indicators, and connectors located behind the optional rack bezel on the system's front panel.

Figure A - 1: SMS Front Panel — SMS Appliance



*second hard drive included on fault tolerant SMS Appliances

The following table describes the buttons and LED indicators on the front panel of the SMS Server.

Table A- 1: Front Panel Indicators, Buttons and Connectors

Item	Icon	Description
Power-on indicator, power button	⏻	The power button controls the DC power supply output to the system. **NOTE**: If you turn off the system using the power button and the system is running an ACPI-compliant operating system, the system performs a graceful shutdown before the power is turned off. If the system is not running an ACPI-compliant operating system, the power is turned off immediately after the power button is pressed.

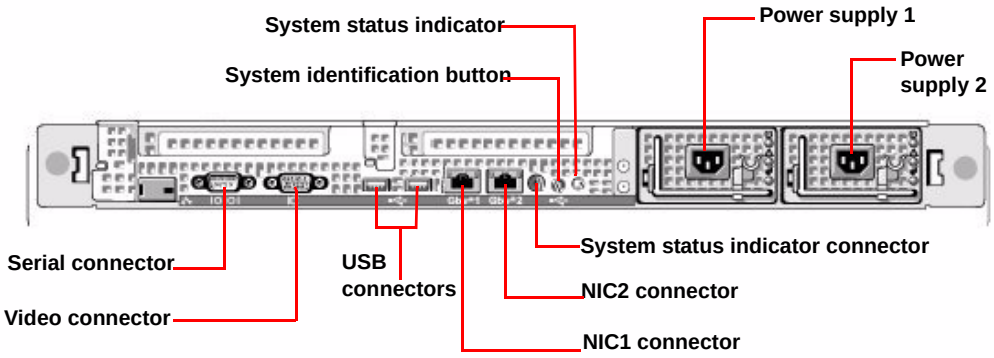
Table A- 1: Front Panel Indicators, Buttons and Connectors (Continued)

Item	Icon	Description
NMI button		Used to troubleshoot software and device driver errors when using certain operating systems. This button can be pressed using the end of a paper clip. Use this button only if directed to do so by qualified support personnel or by the operating system's documentation.
System identification button		The identification buttons (located on the front and back panels) can be used to locate a specific system in a rack. When one of these buttons is pushed, the blue system status indicator (on the front and back) blinks until one of the buttons is pushed again.
LCD display		Provides system ID, status information, and system error messages. The LCD display lights during normal system operation. Both the systems management software and the identification buttons located on the front and back of the system can cause the LCD to flash blue to identify a particular system. The LCD display lights amber when the system needs attention due to a problem with power supplies, fans, system temperature, or hard drives. **NOTE**: If the system is connected to AC power and an error has been detected, the LCD display lights amber regardless of whether the system has been powered on.
USB connectors (2)		Connects USB 2.0-compliant devices to the system
Video connector		Connects a monitor to the system
Hard drives (optional)		Four 2.5" drives or two 3.5" drives (shown in figure)
Optical drive (optional)		One optional slimline optical drive

SMS Back Panel

The following figure shows the controls, indicators, and connectors located on the system's back panel.

Figure A - 2: SMS Back Panel — SMS Appliance



Physical Dimensions

The physical dimensions of the chassis with the bezel attached are as follows:

Table A- 2: Physical Dimensions — SMS Appliance

Power Specifications	Description
Height	1.67 inches (4.26cm) H
Width	16.7 inches (42.6cm) W
Depth	30.4 inches (77.2cm) D
Rack Weight (maximum configuration)	35.8 lbs (16.3 Kg),

LCD Status Messages

The system's control panel LCD provides status messages to signify when the system is operating correctly or when the system needs attention.

The LCD lights blue to indicate a normal operating condition, and lights amber to indicate an error condition. The LCD scrolls a message that includes a status code followed by descriptive text.

CAUTION: Only trained service technicians are authorized to remove the system cover and access any of the components inside the system. See your Product Information Guide for complete information about safety precautions, working inside the computer, and protecting against electrostatic discharge.

Note: If your system fails to boot, press the System ID button for at least five seconds until an error code appears on the LCD. Record the code, then contact "Customer Support" on page xvi.

The following table lists the LCD status messages that can occur and the probable cause for each message:

Table A- 3: LCD Status Messages

Code	Text	Causes
N/A	SYSTEM NAME	A 62-character string that can be defined by the user in the System Setup program. The *SYSTEM NAME* displays under the following conditions: The system is powered on. The power is off and active POST errors are displayed.
E1000	FAILSAFE, Call Support	
E1114	Temp Ambient	Ambient system temperature is out of acceptable range.
E1116	Temp Memory	Memory has exceeded acceptable temperature and has been disabled to prevent damage to the components.
E12nn	*xx* PwrGd	Specified voltage regulator has failed.
E1210	CMOS Batt	CMOS battery is missing, or the voltage is out of acceptable range.
E1211	ROMB Batt	RAID battery is either missing, bad, or unable to recharge due to thermal issues.
E1229	CPU # VCORE	Processor # VCORE voltage regulator has failed.

Table A- 3: LCD Status Messages (Continued)

Code	Text	Causes
E1310	RPM Fan ##	RPM of specified cooling fan is out of acceptable operating range.
E1311	RPM Fan Mod #*x*	RPM of fan *x* in the #module is out of acceptable operating range.
E1313	Fan Redundancy	The system is no longer fan-redundant. Another fan failure will put the system at risk of over-heating.
E1410	CPU # IERR	Specified microprocessor is reporting an internal error.
E1414	CPU # Thermtrip	Specified microprocessor is out of acceptable temperature range and has halted operation.
E1418	CPU # Presence	Specified processor is missing or bad, and the system is in an unsupported configuration.
E141C	CPU Mismatch	Processors are in a configuration unsupported by Dell.
E141F	CPU Protocol	The system BIOS has reported a processor protocol error.
E1420	CPU Bus PERR	The system BIOS has reported a processor bus parity error.
E1421	CPU Init	The system BIOS has reported a processor initialization error.
E1422	CPU Machine Chk	The system BIOS has reported a machine check error.
E1610	PS # Missing	No power is available from the specified power supply; specified power supply is improperly installed or faulty.
E1614	PS # Status	No power is available from the specified power supply; specified power supply is improperly installed or faulty.
E1618	PS # Predictive	Power supply voltage is out of acceptable range; specified power supply is improperly installed or faulty.
E161C	PS # Input Lost	Power source for specified power supply is unavailable, or out of acceptable range.
E1620	PS # Input Range	Power source for specified power supply is unavailable, or out of acceptable range.

Table A- 3: LCD Status Messages (Continued)

Code	Text	Causes
E1624	PS Redundancy	The power supply subsystem is no longer redundant. If the last supply fails, the system will go down.
E1710	I/O Channel Chk	The system BIOS has reported an I/O channel check.
E1711	PCI PERR B## D## F## PCI PERR Slot #	The system BIOS has reported a PCI parity error on a component that resides in PCI configuration space at bus ##, device ##, function ##. The system BIOS has reported a PCI parity error on a component that resides in the specified PCI slot.
E1712	PCI SERR B## D## F## PCI SERR Slot #	The system BIOS has reported a PCI system error on a component that resides in PCI configuration space at bus ##, device ##, function ##. The system BIOS has reported a PCI system error on a component that resides in the specified slot.
E1714	Unknown Err	The system BIOS has determined that there has been an error in the system, but is unable to determine its origin.
E171F	PCIE Fatal Err B## D## F## PCIE Fatal Err Slot #	The system BIOS has reported a PCIe fatal error on a component that resides in PCI configuration space at bus ##, device ##, function ##. The system BIOS has reported a PCIe fatal error on a component that resides in the specified slot.
E1810	HDD ## Fault	The SAS subsystem has determined that hard drive ## has experienced a fault.
E1811	HDD ## Rbld Abrt	The specified hard drive has experienced a rebuild abort.
E1812	HDD ## Removed	The specified hard drive has been removed from the system.
E1913	CPU & Firmware Mismatch	The BMC firmware does not support the CPU.
E1A14	SAS Cable A	SAS cable A is missing or bad.
E1A15	SAS Cable B	SAS cable B is missing or bad.
E1A17	Pwr Cable FB	Flex bay power cable is missing or bad.
E1A18	PDB Ctrl Cable	Flex bay control signals cable is missing or bad.
E2010	No Memory	No memory is installed in the system.

Table A- 3: LCD Status Messages (Continued)

Code	Text	Causes
E2011	Mem Config Err	Memory detected, but is not configurable. Error detected during memory configuration.
E2012	Unusable Memory	Memory is configured, but not usable. Memory subsystem failure.
E2013	Shadow BIOS Fail	The system BIOS failed to copy its flash image into memory.
E2014	CMOS Fail	CMOS failure. CMOS RAM not functioning properly.
E2015	DMA Controller	DMA controller failure.
E2016	Int Controller	Interrupt controller failure.
E2017	Timer Fail	Timer refresh failure.
E2018	Prog Timer	Programmable interval timer error.
E2019	Parity Error	Parity error.
E201A	SIO Err	SIO failure.
E201B	Kybd Controller	Keyboard controller failure.
E201C	SMI Init	System management interrupt (SMI) initialization failure.
E201D	Shutdown Test	BIOS shutdown test failure.
E201E	POST Mem Test	BIOS POST memory test failure.
E201F	DRAC Config	Dell remote access controller (DRAC) configuration failure.
E2020	CPU Config	CPU configuration failure.
E2021	Memory Population	Incorrect memory configuration. Memory population order incorrect.
E2022	POST Fail	General failure after video.
E2110	MBE Crd # DIMM ## & ##	One of the DIMMs in the set implicated by "## & ##" has had a memory multi-bit error (MBE). If no memory card is present, the "Crd #" string is left out of the message.

Table A- 3: LCD Status Messages (Continued)

Code	Text	Causes
E2111	SBE Log Disable Crd # DIMM ##	The system BIOS has disabled memory single-bit error (SBE) logging, and will not resume logging further SBEs until the system is rebooted. "##" represents the DIMM implicated by the BIOS. If no memory riser card is present, the "Crd #" string is left out of the message.
E2112	Mem Spare Crd # DIMM ##	The system BIOS has spared the memory because it has determined that the memory had too many errors. "## & ##" represents the DIMM pair implicated by the BIOS. If no memory card is present, the "Crd #" string is left out of the message.
E2113	Mem Mirror Crd # DIMM ## & ##	The system BIOS has disabled memory mirroring because it has determined that one half of the mirror has had too many errors. "## & ##" represents the DIMM pair implicated by the BIOS. If no memory card is present, the "Crd #" string is left out of the message.
E2118	Fatal NB Mem CRC	One of the connections in the FBD memory subsystem link on the Northbound side has failed.
E2119	Fatal SB Mem CRC	One of the connections in the FBD memory subsystem link on the Southbound side has failed.
I1910	Intrusion	System cover has been removed.
I1911	>3 ERRs Chk Log	LCD overflow message. A maximum of three error messages can display sequentially on the LCD. The fourth message displays as the standard overflow message.
I1912	SEL Full	System Event Log is full of events, and is unable to log any more events.
W1228	ROMB Batt < 24hr	Warns predictively that the RAID battery has less than 24 hours of charge left.

Solving Problems Described by LCD Status Messages

The code and text on the LCD can often specify a very precise fault condition that is easily corrected. For example, if the code `E1418 CPU_1_Presence` appears, you know that a microprocessor is not installed in socket 1.

In contrast, you might be able to determine the problem if multiple related errors occur. For example, if you receive a series of messages indicating multiple voltage faults, you might determine that the problem is a failing power supply.

For additional help, contact TippingPoint "Customer Support" on page xvi.

Removing LCD Status Messages

For faults associated with sensors, such as temperature, voltage, fans, and so on, the LCD message is automatically removed when that sensor returns to a normal state. For example, if temperature for a component goes out of range, the LCD displays the fault; when the temperature returns to the acceptable range, the message is removed from the LCD. For other faults, you must take action to remove the message from the display:

- Clear the SEL — You can perform this task remotely, but you will lose the event history for the system.
- Power cycle — Turn off the system and disconnect it from the electrical outlet; wait approximately ten seconds, reconnect the power cable, and restart the system.

Any of these actions will remove fault messages, and return the status indicators and LCD colors to the normal state. Messages will reappear under the following conditions:

- The sensor returns to a normal state but fails again, resulting in a new SEL entry.
- The system is reset and new error events are detected.
- A failure is recorded from another source that maps to the same display entry.

Safety Guidelines

Use the following safety guidelines to help ensure your own personal safety and to help protect your system and working environment from potential damage.

General Safety

Observe the following safe-handling guidelines to ensure personal safety:

- When setting up the computer for work, place it on a level surface.
- Do not attempt to service the computer yourself, except as explained in your TippingPoint documentation or in instructions otherwise provided to you by TippingPoint. always follow installation and service instructions closely.
- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables or perform maintenance or reconfiguration of this product during an electrical storm. Do not use your computer during an electrical storm.
- Do not push any objects into the air vents or openings of your computer. Doing so can cause fire or electric shock by shorting out interior components.
- If your computer includes a modem, the cable used with the modem should be manufactured with a minimum wire size of 26 American wire gauge (AWG) and an FCC-compliant RJ-11 modular plug.
- If your computer has both a modem RJ-11 connector and a network RJ-45 connector, which look alike, make sure that you insert the telephone cable into the RJ-11 connector, not the RJ-45 connector.
- Keep your computer away from radiators and heat sources. Also, do not block cooling vents. Avoid placing loose papers underneath your computer; do not place your computer in a closed-in wall unit or on a bed, sofa, or rug.
- Do not use your computer in a wet environment, for example, near a bath tub, sink, or swimming pool or in a wet basement
- Do not spill food or liquids on your computer.
- Before you clean your computer, disconnect the computer from the electrical outlet. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may contain flammable substances. Allow the computer to dry before reconnecting the power cord to the electrical outlet.

CAUTION: Do not operate your computer with any cover(3) (including computer covers, bezels, filler brackets, front-panel inserts and so on) removed.

- PC Cards may become very warm during normal operation. Use care when removing PC Cards after their continuous operation.

WARNING: The cord on this product contains lead, a chemical know to the State of California to cause birth defects or other reproductive harm. Wash hands after handling.

Power Safety

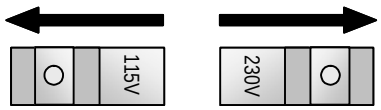
- To prevent electric shock, plug the computer and peripheral device power cables into properly grounded electrical outlets. The computer power cable is equipped with a grounding plug to help ensure proper grounding. Do not use adapter plugs that bypass the grounding feature, or remove the grounding feature from the plug or adapter. If you must use an extension cable or plug strip, ensure the extension cable or plug strip is connected to a wall power outlet and not to another extension cable or plug strip. The extension cable or plug strip must be designed for grounded plugs and plugged into a grounded wall outlet.
- If you use an extension power cable, ensure that the total ampere rating of the products plugged in to the extension power cable does not exceed the ampere rating of the extension cable.
- If you are using a multiple-outlet power strip, use caution when plugging the power cable into the power strip. Some power strips may allow you to insert the plug incorrectly. Incorrect insertion of the power plug could result in permanent damage to your computer, as well as risk of electric shock and/or fire. Ensure that the ground prong of the power plug is inserted into the mating ground contact of the power strip.
- Before you connect the device to an electrical outlet, check the AC adapter-voltage rating to ensure that the required voltage and frequency match the available power source.
- Your computer is equipped with one of the following:

  — A fixed-voltage power supply — Computers with a fixed-voltage power supply do not have a voltage selection switch on the back panel and operate at only one voltage (see the regulatory label on the outside of the computer for its operating voltage.)

  — An auto-sensing voltage circuit — Computer with an auto-sensing voltage circuit do not have a voltage selection switch on the back panel and automatically detect the correct operating voltage.

  — A manual voltage selection switch — Computers with a voltage selection switch on the back panel must be manually set to operate at the correct operating voltage. Set the switch to the position that most closely matches the voltage used in your location.

Figure A - 3: Voltage Selection Switch



Note: The switch on your system may be different than the one pictured.

NOTICE: To help avoid damaging a computer with a manual voltage selection switch, set the switch for the voltage that most closely matches the AC power available in your location. For Japan, the voltage selection switch must be set to the 115-V position even though the AC power availability in Japan is 100V. Also, ensure that your monitor and attached devices are electrically rated to operate with the AC power available in your location.

- To help protect your computer from sudden, transient increase and decreased in electrical power, use a surge suppressor, line conditioner, or interruptible power supply (UPS).

When Working Inside Your Computer

CAUTION: Do not attempt to service the computer yourself, except as explained in your documentation or in instructions otherwise provided to you by TippingPoint. Always follow installation and service instructions closely.

NOTICE: To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before removing a component from the system board or disconnecting a device from the computer.

Before you open the compute cover, perform the following steps in the sequence indicated.

Note: See "General Safety" on page 57 before proceeding with the following steps.

1. Shutdown your computer using the operating system menu.
2. Turn off any devices connected to the computer.
3. Ground yourself by touching an unpainted metal surface on the chassis, such as the metal around the card-slot openings at the back of the computer, before touching anything inside your computer.
4. While you work, periodically touch and unpainted metal surface on the computer chassis to dissipate any static electricity that might harm internal components.
5. Disconnect your computer and devices, including the monitor, from their electrical outlets to prevent electrical shock or system board damage. Also, disconnect any telephone or telecommunication lines from the computer. Certain system board components continue to receive power any time the computer is connected to AC power.

In additional, take note of these safety guidelines when appropriate:

- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.
- Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a microprocessor chip by its edges, not by its pins.

Equipment Protection Instructions

Observe the following safe-handling guidelines to prevent damage to your computer:

NOTICE: When taking the computer from low-temperature conditions into a warmer environment or from high-temperature conditions into a cooler environment, allow the computer to acclimate to room temperature and for any condensation that may have formed to evaporate before turning on power to avoid damage to the computer.

- Protect your computer from environmental hazards such as dirt, dust, food, liquids, temperature extremes, and overexposure to sunlight.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before disconnecting a device from the computer.
- To avoid shorting out your computer when disconnecting a network cable, first unplug the cable from the network adapter on the back of your computer, and then from the network jack. When reconnecting a network cable to your computer, first plug the cable into the network jack, and then into the network adapter.
- Keep the computer away from direct or excessive moisture and extremely hot or cold temperature to ensure that the computer is used within the specified operating range.
- Leave a 10.2 cm (4 inch) minimum clearance on all vented sides of the computer to permit the airflow required for proper ventilation.
- Do not restrict airflow into the computer by blocking any vents or air intakes.
- Clean the air vents on the front, back and vented sides of the computer. Lint dust and other foreign materials can block the vents and restrict the airflow.
- Do not stack computers on top of each other or place computers so close to each other than they are subject to each other's re-circulated or preheated air.
- Do not operate the computer within a separate enclosure unless adequate intake and exhaust ventilation are provided on the enclosure that adhere to the guidelines listed above.
- Clean the display with a soft, clean cloth and water. Apply the water to the cloth; then stroke the cloth across the display in one direction, moving from the top of the display to the bottom. Remove moisture from the display quickly and keep the display dry. Long-term exposure to moisture can damage the display. *Do not* use a commercial window cleaner to clean your display.

Protecting Against Electrostatic Discharge

Electrostatic discharge (ESD) events can harm electronic components inside your computer. Under certain conditions, ESD may build up on your body or an object, such as a peripheral, and then discharge into another object, such as your computer. To prevent ESD damage, you should discharge static electricity from you body before you interact with any of your computer's internal electronic components, such as a memory module. You can protect against ESD by touching a metal grounded object (such as an unpainted metal surface on your computer's I/O panel) before you interact with anything electronic. When connecting a peripheral (including handheld digital assistants) to your computer, you should always ground both yourself and the peripheral before connecting it to the computer. In addition, as you work inside the computer, periodically touch an I/O connector to remove any static charge your body may have accumulated.

You can also take the following steps to prevent damage from electrostatic discharge:

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

Battery Disposal

CAUTION: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Do not dispose of the battery along with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.

Your computer uses a lithium coin-cell battery. The lithium coin-cell battery is a long-life battery, and it is very possible that you will never need to replace it. However, should you need to replace it, see your *User's Guide or Owner's Manual*.

Battery Statement (Taiwan)

Export Regulations

Customer acknowledges that these Products which may include technology and software, are subject o the customs and export control laws and regulations of the United, ("U.S.") and may also be subject to the customs and export laws and regulations of the country in which the Products are manufactured and/or received. Customer agrees to abide by those laws and regulations. Further, under U. S. law, the Products may not be sold, leased, or otherwise transferred, to, or utilized by an end-user engaged in activities related to weapons or mass destruction, including without limitation, activities related to the design, development, production or use of nuclear weapons, materials, or facilities, missiles or the support of missile projects, and chemical or biological weapons.

Source: Safety and Regulatory information for the SMS Appliance is based on the *Product Information Guide*.

Requirements

Power

In order for the TippingPoint to run properly, you must meet the proper power criteria as described in the following table.

Table A- 4: Power Requirements — SMS Appliance

Power Specifications	Description
Wattage	Standard 670 Watt hot-plug power supply Optional redundant 670 Watt hot-plug power supply
Voltage	Auto-switching universal 110/220 Volts

Environmental

To operate the SMS server properly, provide an environment that meets or exceeds the environmental criteria described in the following table.

Table A- 5: Environmental Requirements — SMS Appliance

Environmental Requirements	Condition	Description
Temperature	Operating	10° to 35°C (50° to 95°F)
	Storage	–40° to 65°C (–40° to 149°F)
Relative Humidity	Operating	20% to 80% non-condensing (twmax=29C)
	Maximum humidity gradient	10% per hour, operational and non-operational conditions
	Storage	5% to 95% non-condensing (twmax=38C)
Vibration	Operating	0.26G at 5Hz to 350Hz for 2 minutes
	Storage	1.54Grms Random Vibration at 10Hz to 250Hz for 15 minutes
Shock	Operating	1 shock pulse of 41G for up to 2ms
	Storage	6 shock pulses of 71G for up to 2ms
Altitude	Operating	-16 to 3,048m (-50 ft to 10,000 ft)
	Storage	-16m to 10,600m (-50 ft to 35,000 ft)

Warranty Information

Intel® Warranty Statement for Pentium® and Celeron® Processors only (U. S. and Canada Only)

Intel's Three Year Limited Warranty

Limited Warranty

Intel warrants that its family of Pentium® and Celeron® processors, if properly used and installed, will be free from defects in materials and workmanship and will substantially conform to Intel's publicly available specifications for a period of three (3) years after the date the Pentium or Celeron processor was purchased (whether purchased separately or as part of a computer system).

If the Pentium or Celeron processor, which is the subject of this Limited Warranty, fails during the warranty period for reasons covered by this Limited Warranty, Intel, at its option, will:

"REPAIR the Pentium or Celeron processor by means of hardware and/or software; OR

"REPLACE the Pentium or Celeron processor with another Pentium or Celeron processor; OR

if Intel is unable to repair or replace the particular Pentium or Celeron processor,

" REFUND the then-current value of the Pentium or Celeron processor.

THIS LIMITED WARRANTY, AND ANY IMPLIED WARRANTIES THAT MAY EXIST UNDER STATE LAW, APPLY ONLY TO THE ORIGINAL PURCHASER OF THE PENTIUM OR CELERON PROCESSOR, OR PENTIUM OR CELERON PROCESSOR-BASED COMPUTER AND LAST ONLY FOR AS LONG AS SUCH PURCHASER CONTINUES TO OWN THE PROCESSOR.

Extent of Limited Warranty

Intel does not warrant that your Pentium or Celeron processor will be free from design defects or errors known as "errata." Current characterized errata are available upon request. .This limited warranty is for purchasers in the United States and Canada only. The limited warranty does not cover any costs relating to removal or replacement of any Pentium or Celeron processors that are soldered or otherwise permanently affixed to your system's motherboard.

This limited warranty does not cover damages due to external causes, including accident, problems with electrical power, usage not in accordance with product instructions, misuse, neglect, alteration, repair, improper installation, or improper testing.

How to Obtain Warranty Service

To obtain warranty service for your Pentium or Celeron processor, you may contact your computer system manufacturer in accordance with its instructions, or you may contact Intel.

To request warranty service from Intel, you should call Intel at 1-916-377-7000 during the warranty period during normal business hours (Pacific Time), excluding holidays. Please

be prepared to provide:

(1) your name, address, and telephone numbers;

(2) proof of purchase;

(3) this Intel warranty card;

(4) a description of the computer system including the brand and model; and

(5) an explanation of the problem.

[Note: The Customer Service Representative may need additional information from you depending on the nature of the problem.]

The replacement processor is warranted under this written warranty and is subject to the same limitations and exclusions for the remainder of the original warranty period or one

(1) year, whichever is longer.

WARRANTY LIMITATIONS AND EXCLUSIONS

THESE WARRANTIES REPLACE ALL OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE. INTEL MAKES NO EXPRESS WARRANTIES BEYOND THOSE STATED HERE. INTEL DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, NON-UNFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.

SOME LAWS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES SO THIS LIMITATION MAY NOT APPLY TO YOU. IF THESE LAWS APPLY, THEN ALL EXPRESS AND IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD. SOME LAWS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

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THE LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM JURISDICTION TO JURISDICTION.

Intel Pentium® and Celeron® Processors are backed by a three-year limited warranty.
Please refer to the reverse side of this card for complete warranty details.

Intel's Commitment to Quality

Intel is committed to producing the highest quality processors available. That's why we have hundreds of people dedicated to continuously improve our design, manufacturing, and testing technology.

We put every one of our Pentium and Celeron processors through a rigorous battery of tests during the design and manufacturing processes.

To verify that the new chip will correctly run the software written for Intel Architecture processors, a team of Intel engineers is dedicated to compatibility testing. In a state-of-art lab, this group runs an extensive set of operating systems, applications, network tests and stress tests repeatedly to ensure that the processor is compatible with representative software.

Just as importantly, we work with hardware and software companies in the computer industry to ensure that our processors are compatible with their products.

Additionally, a sampling of Intel processors are subjected to a rigorous "burn-in" test whereby the chip is operated at higher-than-normal temperatures and voltages. During this burn-in period, the processor experiences the equivalent of weeks of normal usage. These units are monitored for failures as part of our ongoing quality assurance process.

As a result, today's microprocessors from Intel are among the most reliable components in computers.

What are "Errata"?

Exhaustive product testing can highlight differences between the actual behavior of the microprocessor and its specifications. Sometimes the discrepancies are caused by a design defect or error, which we call *errata*. Rigorous validation identifies most errata during the development of the processor, but we do detect additional errata during the life cycle of a microprocessor.

When an erratum is identified, our engineers work to characterize it and find a solution. We work with system designers and software developers to ensure that the discrepancy does not affect their products. If necessary, special software or hardware solutions (sometimes known as "work arounds") are implemented in the system design to prevent computer users from encountering the problem. Errata may then be corrected in future revisions of the microprocessor.

No microprocessor is perfect, and Intel recognizes that some consumers want to know about any errata, whether or not the errata affect them. Intel makes documentation of all characterized Pentium and Celeron processor errata publicly available through our Technical Documentation Service.

At Intel, our goal is to make every computer user satisfied with his or her Pentium or Celeron processor. Should you have any questions, comments or concerns about your Intel microprocessor, please call us at 1-916-3778-7000.

Rev(01/05)

B SMS Based on Dell 1850

Provides specifications, hardware requirements and safety information for the SMS based on Dell PowerEdge 1850 server.

Chapter Overview

Note: The SMS based on Dell 1850 server has the power button on the left side of the center panel. To identify which SMS you have, see "SMS Identification" on page 8.

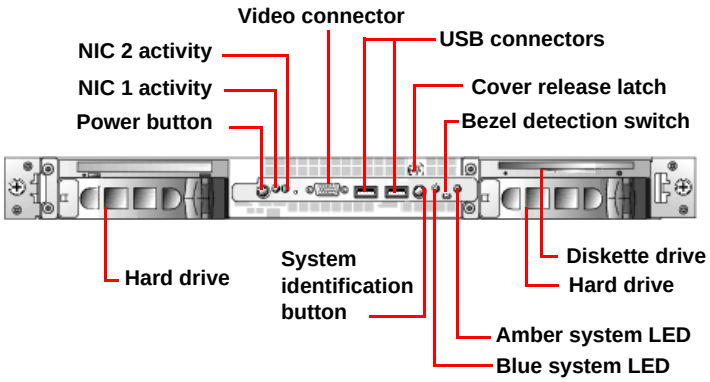
This appendix includes the following topics:

Server Description

To insure proper performance, review the information described in the following sections:

SMS Front Panel

Figure B - 1: SMS Front Panel — SMS based on Dell 1850 server



The following table describes the buttons and LED indicators on the front panel of the SMS Server.

Table B - 1: Front Panel Buttons and LED Indicators

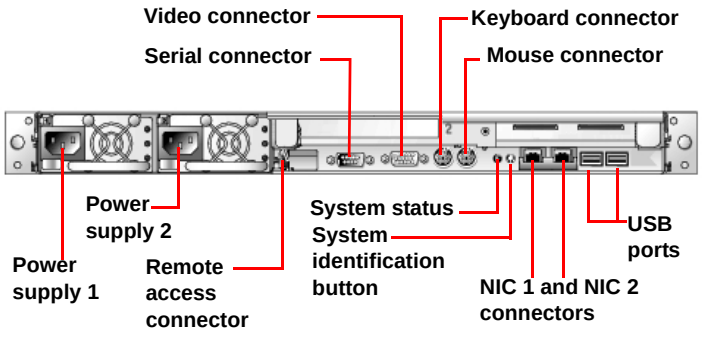
Item	Icon	Description
blue system status indicator		This LED lights up during normal system operation.
amber system status indicator		This LED flashes when the system when a problem with power supplies, fans, system temperature, or hard drives exists. NOTE: If the system is connected to an AC power source and an error is detected, the LED will flash regardless of whether the system was powered on.
NIC1 and NIC2 link and activity indicators		These LEDs flash intermittently when the NICs are in use.
hard-drive indicator		Indicates hard drive activity.

Table B - 1: Front Panel Buttons and LED Indicators (Continued)

Item	Icon	Description
power-on indicator, power button		• Indicates power is being supplied to the system's power supply module(s). • Blinks when power is available to the system, but the system is not powered on. • Controls the DC power supply output to the system. NOTE: If you turn off the system using the power button and the system is running an ACPI-compliant operating system, the system performs a graceful shutdown before the power is turned off. If the system is not running an ACPI-compliant operating system, the power is turned off immediately after the power button is pressed.
system identification button		The identification buttons (located on the front and back panels) can be used to locate a specific system in a rack. When one of these buttons is pushed, the blue system status indicator (on the front and back) blinks until one of the buttons is pushed again.
USB port		Connection for USB 2.0-compliant devices to the system
video connector		Connection for a monitor to the system

SMS Back Panel

Figure B - 2: SMS Back Panel — SMS based on Dell 1850 server



Physical Dimensions

Table B - 2: Physical Dimensions — SMS based on Dell 1850 server

Specifications	Description
Height	4.29 cm (1.69 inches)
Width	48.26 cm (19 inches)
Depth	76.2 cm (30 inches)
Weight (maximum configuration)	17.69 kg (39 pounds)

Safety Guidelines

Use the following safety guidelines to help ensure your own personal safety and to help protect your system and working environment from potential damage.

General Safety

Observe the following safe-handling guidelines to ensure personal safety:

- When setting up the computer for work, place it on a level surface.
- Do not attempt to service the computer yourself, except as explained in your TippingPoint documentation or in instructions otherwise provided to you by TippingPoint. always follow installation and service instructions closely.
- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables or perform maintenance or reconfiguration of this product during an electrical storm. Do not use your computer during an electrical storm.
- Do not push any objects into the air vents or openings of your computer. Doing so can cause fire or electric shock by shorting out interior components.
- If your computer includes a modem, the cable used with the modem should be manufactured with a minimum wire size of 26 American wire gauge (AWG) and an FCC-compliant RJ-11 modular plug.
- If your computer has both a modem RJ-11 connector and a network RJ-45 connector, which look alike, make sure that you insert the telephone cable into the RJ-11 connector, not the RJ-45 connector.
- Keep your computer away from radiators and heat sources. Also, do not block cooling vents. Avoid placing loose papers underneath your computer; do not place your computer in a closed-in wall unit or on a bed, sofa, or rug.
- Do not use your computer in a wet environment, for example, near a bath tub, sink, or swimming pool or in a wet basement
- Do not spill food or liquids on your computer.
- Before you clean your computer, disconnect the computer from the electrical outlet. Clean your computer with a soft cloth dampened with water. Do not use liquid or aerosol cleaners, which may

contain flammable substances. Allow the computer to dry before reconnecting the power cord to the electrical outlet.

CAUTION: Do not operate your computer with any cover(3) (including computer covers, bezels, filler brackets, front-panel inserts and so on) removed.

- PC Cards may become very warm during normal operation. Use care when removing PC Cards after their continuous operation.

WARNING: The cord on this product contains lead, a chemical know to the State of California to cause birth defects or other reproductive harm. Wash hands after handling.

Power Safety

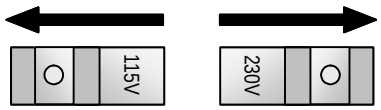
- To prevent electric shock, plug the computer and peripheral device power cables into properly grounded electrical outlets. The computer power cable is equipped with a grounding plug to help ensure proper grounding. Do not use adapter plugs that bypass the grounding feature, or remove the grounding feature from the plug or adapter. If you must use an extension cable or plug strip, ensure the extension cable or plug strip is connected to a wall power outlet and not to another extension cable or plug strip. The extension cable or plug strip must be designed for grounded plugs and plugged into a grounded wall outlet.
- If you use an extension power cable, ensure that the total ampere rating of the products plugged in to the extension power cable does not exceed the ampere rating of the extension cable.
- If you are using a multiple-outlet power strip, use caution when plugging the power cable into the power strip. Some power strips may allow you to insert the plug incorrectly. Incorrect insertion of the power plug could result in permanent damage to your computer, as well as risk of electric shock and/or fire. Ensure that the ground prong of the power plug is inserted into the mating ground contact of the power strip.
- Before you connect the device to an electrical outlet, check the AC adapter-voltage rating to ensure that the required voltage and frequency match the available power source.
- Your computer is equipped with one of the following:

  — A fixed-voltage power supply — Computers with a fixed-voltage power supply do not have a voltage selection switch on the back panel and operate at only one voltage (see the regulatory label on the outside of the computer for its operating voltage.)

  — An auto-sensing voltage circuit — Computer with an auto-sensing voltage circuit do not have a voltage selection switch on the back panel and automatically detect the correct operating voltage.

— A manual voltage selection switch — Computers with a voltage selection switch on the back panel must be manually set to operate at the correct operating voltage. Set the switch to the position that most closely matches the voltage used in your location.

Figure B - 3: Voltage Selection Switch



Note: The switch on your system may be different than the one pictured.

NOTICE: To help avoid damaging a computer with a manual voltage selection switch, set the switch for the voltage that most closely matches the AC power available in your location. For Japan, the voltage selection switch must be set to the 115-V position even though the AC power availability in Japan is 100V. Also, ensure that your monitor and attached devices are electrically rated to operate with the AC power available in your location.

- To help protect your computer from sudden, transient increase and decreased in electrical power, use a surge suppressor, line conditioner, or interruptible power supply (UPS).

When Working Inside Your Computer

CAUTION: Do not attempt to service the computer yourself, except as explained in your documentation or in instructions otherwise provided to you by TippingPoint. Always follow installation and service instructions closely.

NOTICE: To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before removing a component from the system board or disconnecting a device from the computer.

Before you open the compute cover, perform the following steps in the sequence indicated.

Note: See "General Safety" on page 68 before proceeding with the following steps.

1. Shutdown your computer using the operating system menu.
2. Turn off any devices connected to the computer.
3. Ground yourself by touching an unpainted metal surface on the chassis, such as the metal around the card-slot openings at the back of the computer, before touching anything inside your computer.

4. While you work, periodically touch and unpainted metal surface on the computer chassis to dissipate any static electricity that might harm internal components.
5. Disconnect your computer and devices, including the monitor, from their electrical outlets to prevent electrical shock or system board damage. Also, disconnect any telephone or telecommunication lines from the computer. Certain system board components continue to receive power any time the computer is connected to AC power.

In additional, take note of these safety guidelines when appropriate:

- When you disconnect a cable, pull on its connector or on its strain-relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.
- Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a microprocessor chip by its edges, not by its pins.

Equipment Protection Instructions

Observe the following safe-handling guidelines to prevent damage to your computer:

NOTICE: When taking the computer from low-temperature conditions into a warmer environment or from high-temperature conditions into a cooler environment, allow the computer to acclimate to room temperature and for any condensation that may have formed to evaporate before turning on power to avoid damage to the computer.

- Protect your computer from environmental hazards such as dirt, dust, food, liquids, temperature extremes, and overexposure to sunlight.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the computer before disconnecting a device from the computer.
- To avoid shorting out your computer when disconnecting a network cable, first unplug the cable from the network adapter on the back of your computer, and then from the network jack. When reconnecting a network cable to your computer, first plug the cable into the network jack, and then into the network adapter.
- Keep the computer away from direct or excessive moisture and extremely hot or cold temperature to ensure that the computer is used within the specified operating range.
- Leave a 10.2 cm (4 inch) minimum clearance on all vented sides of the computer to permit the airflow required for proper ventilation.
- Do not restrict airflow into the computer by blocking any vents or air intakes.
- Clean the air vents on the front, back and vented sides of the computer. Lint dust and other foreign materials can block the vents and restrict the airflow.
- Do not stack computers on top of each other or place computers so close to each other than they are subject to each other's re-circulated or preheated air.
- Do not operate the computer within a separate enclosure unless adequate intake and exhaust ventilation are provided on the enclosure that adhere to the guidelines listed above.
- Clean the display with a soft, clean cloth and water. Apply the water to the cloth; then stroke the cloth across the display in one direction, moving from the top of the display to the bottom. Remove

moisture from the display quickly and keep the display dry. Long-term exposure to moisture can damage the display. *Do not* use a commercial window cleaner to clean your display.

Protecting Against Electrostatic Discharge

Electrostatic discharge (ESD) events can harm electronic components inside your computer. Under certain conditions, ESD may build up on your body or an object, such as a peripheral, and then discharge into another object, such as your computer. To prevent ESD damage, you should discharge static electricity from you body before you interact with any of your computer's internal electronic components, such as a memory module. You can protect against ESD by touching a metal grounded object (such as an unpainted metal surface on your computer's I/O panel) before you interact with anything electronic. When connecting a peripheral (including handheld digital assistants) to your computer, you should always ground both yourself and the peripheral before connecting it to the computer. In addition, as you work inside the computer, periodically touch an I/O connector to remove any static charge your body may have accumulated.

You can also take the following steps to prevent damage from electrostatic discharge:

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until you are ready to install the component. Just before unwrapping the antistatic package, be sure to discharge static electricity from your body.
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Battery Disposal

CAUTION: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. Do not dispose of the battery along with household waste. Contact your local waste disposal agency for the address of the nearest battery deposit site.

Your computer uses a lithium coin-cell battery. The lithium coin-cell battery is a long-life battery, and it is very possible that you will never need to replace it. However, should you need to replace it, see your *User's Guide or Owner's Manual*.

Battery Statement (Taiwan)

Export Regulations

Customer acknowledges that these Products which may include technology and software, are subject o the customs and export control laws and regulations of the United, ("U.S.") and may also be subject to the customs and export laws and regulations of the country in which the Products are manufactured and/or received. Customer agrees to abide by those laws and regulations. Further, under U. S. law, the Products may not be sold, leased, or otherwise transferred, to, or utilized by an end-user engaged in activities related to weapons or mass destruction, including without limitation, activities related to the design, development, production or use of nuclear weapons, materials, or facilities, missiles or the support of missile projects, and chemical or biological weapons.

Source: Safety and Regulatory information for the SMS based on Dell 1850 server is based on the *Product Information Guide.*

Requirements

Power

In order for the TippingPoint to run properly, you must meet the proper power criteria as described in the following table.

Table B - 3: Power Requirements — SMS based on Dell 1850 server

Power Specifications	Description
Wattage	550 W
Voltage	84-264 VAC. autoranging, 47-63 Hz. 7.6 A
Heat Dissipation	2130 BTU/hour (theoretical maximum)
Maximum Inrush Current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 25 A per power supply for 10 ms or less.

Environmental

To operate the SMS server properly, provide an environment that meets or exceeds the environmental criteria described in the following table.

Table B - 4: Environmental Requirements — SMS based on Dell 1850 server

Environmental Specifications	Description
Temperature	10° to 35°C (50° to 95°F) — Operating –40° to 65°C (–40° to 149°F) — Storage
Humidity	8% to 85% (noncondensing) — with a maximum humidity gradation of 10% per hour

Warranty Information

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Limited Warranty

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"REPAIR the Pentium or Celeron processor by means of hardware and/or software; OR

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This limited warranty does not cover damages due to external causes, including accident, problems with electrical power, usage not in accordance with product instructions, misuse, neglect, alteration, repair, improper installation, or improper testing.

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(1) your name, address, and telephone numbers;

(2) proof of purchase;

(3) this Intel warranty card;

(4) a description of the computer system including the brand and model; and

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[Note: The Customer Service Representative may need additional information from you depending on the nature of the problem.]

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Intel's Commitment to Quality

Intel is committed to producing the highest quality processors available. That's why we have hundreds of people dedicated to continuously improve our design, manufacturing, and testing technology.

We put every one of our Pentium and Celeron processors through a rigorous battery of tests during the design and manufacturing processes.

To verify that the new chip will correctly run the software written for Intel Architecture processors, a team of Intel engineers is dedicated to compatibility testing. In a state-of-art lab, this group runs an extensive set of operating systems, applications, network tests and stress tests repeatedly to ensure that the processor is compatible with representative software.

Just as importantly, we work with hardware and software companies in the computer industry to ensure that our processors are compatible with their products.

Additionally, a sampling of Intel processors are subjected to a rigorous "burn-in" test whereby the chip is operated at higher-than-normal temperatures and voltages. During this burn-in period, the processor experiences the equivalent of weeks of normal usage. These units are monitored for failures as part of our ongoing quality assurance process.

As a result, today's microprocessors from Intel are among the most reliable components in computers.

What are "Errata"?

Exhaustive product testing can highlight differences between the actual behavior of the microprocessor and its specifications. Sometimes the discrepancies are caused by a design defect or error, which we call *errata*. Rigorous validation identifies most errata during the development of the processor, but we do detect additional errata during the life cycle of a microprocessor.

When an erratum is identified, our engineers work to characterize it and find a solution. We work with system designers and software developers to ensure that the discrepancy does not affect their products. If necessary, special software or hardware solutions (sometimes known as "work arounds") are implemented in the system design to prevent computer users from encountering the problem. Errata may then be corrected in future revisions of the microprocessor.

No microprocessor is perfect, and Intel recognizes that some consumers want to know about any errata, whether or not the errata affect them. Intel makes documentation of all characterized Pentium and Celeron processor errata publicly available through our Technical Documentation Service.

At Intel, our goal is to make every computer user satisfied with his or her Pentium or Celeron processor. Should you have any questions, comments or concerns about your Intel microprocessor, please call us at 1-916-3778-7000.

Rev(01/05)

C SMS Based on Supermicro

Provides specifications, hardware requirements and safety information for the SMS based on Supermicro server.

Chapter Overview

Note: The SMS based on Supermicro server has the power button on the left side. To identify which SMS you have, see "SMS Identification" on page 8.

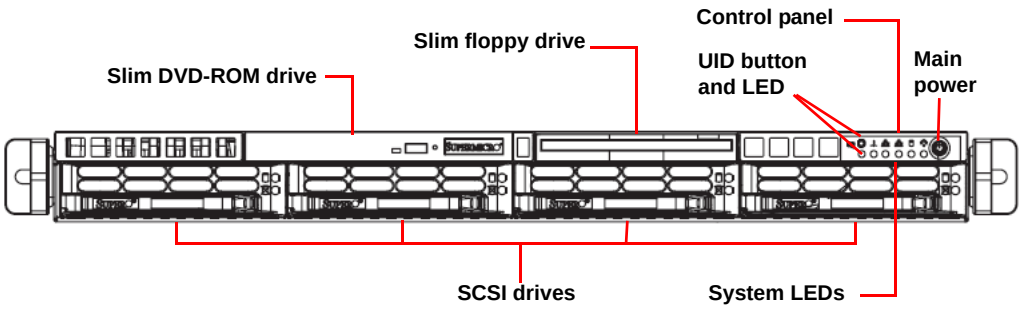
This appendix includes the following topics:

Server Description

To insure proper performance, review the information described in the following sections:

SMS Front Panel

Figure C - 1: SMS Front Panel — SMS based on Supermicro server



Control Panel Buttons

There are two push-button buttons located on the front of the chassis. These are (in order from left to right) a UID button and a power on/off button.

Table C - 1: Control Panel Buttons

Button	Icon	Description
UID		Depressing the UID (unit identifier) button illuminates an LED on both the front and rear of the chassis for easy system location in large stack configurations (see page 5-21). The LED will remain on until the button is pushed a second time. Another UID button on the rear of the chassis serves the same function.
POWER		This is the main power switch, which is used to apply or turn off the main system power. Turning off system power with this button removes the main power but keeps standby power supplied to the system.

LED Indicators

The following table describes the LED indicators on the front panel of the SMS Server. LEDs indicate UID, system power, HDD activity, network activity (2) and overheat/fan failure. A main power button and a UID button are also included.

Table C - 2: Front Panel LED Indicators

LEDs	Icon	Description
UID		This LED turns on when either the front or the rear UID button is pushed. Pushing either button a second time will turn this LED off.
Overheat/Fan Fail		**Flashing** — fan failure. **On continuously** (on and not flashing)— overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. • Check the routing of the cables and make sure all fans are present and operating normally. • You should also check to make sure that the chassis covers are installed. • Finally, verify that the heatsinks are installed properly. This LED remains flashing or on as long as the overheat condition exists.
NIC2		**Flashing** — network activity on GLAN2.
NIC1		**Flashing** — network activity on GLAN1.
HDD		Indicates hard drive activity. **Flashing** —SCSI and/or DVD-ROM drive activity.
Power		Indicates power is being supplied to the system's power supply module(s). **green** — the system is operating This LED should always be green when the system is operating. This a**mber** — power supply failure or a disconnected or loose power supply cord.

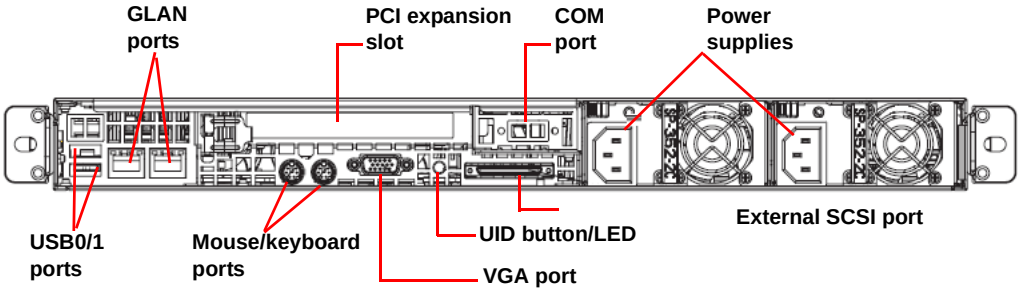
SCSI Drive Carrier LEDs

Each SCSI drive carrier has two LEDs.

- Green — When illuminated, the green LED on the front of a SCSI drive carrier indicates drive activity. A connection to the SCSI SCA backplane enables this LED to blink on and off when that particular drive is being accessed.
- Red — A SAF-TE compliant backplane activates the red LED, which indicates a drive failure. If one of the SCSI drives fail, you should be notified by your system management software. Please refer to Chapter 6 for instructions on removing and replacing SCSI drives.

SMS Back Panel

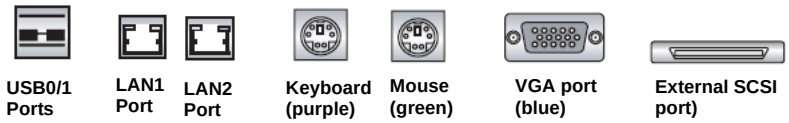
Figure C - 2: SMS Back Panel — SMS based on Supermicro server



I/O Ports

Ports on the I/O backplane include one COM port, a VGA port, two USB 2.0 ports, PS/2 port* mouse and keyboard ports and two gigabit Ethernet ports. A UID button/ LED is also included on the server backplane.

Figure C - 3: I/O Ports



*PS/2 ports not available on all systems.

System Cooling

The server has an innovative cooling design that features five sets of 4-cm counter-rotating fans located in the middle section of the chassis. The BIOS has a Fan Speed Control Mode setting that allows the

chassis fan speed to be determined by system temperature. The recommended setting is 3-pin (Server). The power supply module(s) also includes a cooling fan.

Bezel Security

To help prevent unauthorized access to the system peripherals and control panel, a key locks the optional bezel to the front panel. The key is taped to the inside of the bezel at the factory.

To lock the bezel, insert the key in the lock. Turn the lock clockwise, approximately a quarter turn, until it stops. The bezel is now locked and cannot be opened.

To unlock the bezel, insert the key in the lock and turn the lock counterclockwise until it stops. This is approximately a quarter turn. The bezel is now unlocked and can be opened again.

Safety Guidelines

Use the following safety guidelines to help ensure your own personal safety and to help protect your system and working environment from potential damage.

CAUTION: The power supplies in your system may produce high voltages and energy hazards, which can cause bodily harm. Only trained service technicians are authorized to remove the covers and access any of the components inside the system.

There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer.

This system may have more than one power supply cable. To reduce the risk of electrical shock, a trained service technician must disconnect all power supply cables before servicing the system.

To prevent accidents, adhere to the following guidelines to ensure general safety:

- Remove any dust from the area and keep the area around the SMS server clear and dust-free during and after installation.
- Wear safety glasses if you are working under conditions that might be hazardous to your eyes.

Note: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: this device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

Observe the following general precautions for using and working with your system:

- Observe and follow service markings. Do not service any product except as explained in your system documentation. Opening or removing covers that are marked with the triangular symbol with a

lightning bolt may expose you to electrical shock. Components inside these compartments should be serviced only by an authorized service technician.

- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your authorized service provider:
  - The power cable, extension cord, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.
- Keep your system components away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the computer gets wet, see the appropriate section in your troubleshooting guide or contact an authorized service provider.
- Do not push any objects into the openings of your system components. Doing so can cause fire or electric shock by shorting out interior components.
- Allow the product to cool before removing covers or touching internal components.
- Use the correct external power source. Operate the product only from the type of power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.
- Also be sure that your monitor and attached peripherals are electrically rated to operate with the power available in your location.
- Use only approved power cable(s). If you have not been provided with a power cable for your computer or storage system or for any AC-powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the system components and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help

ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cord, use a three-wire cord with properly grounded plugs.

- Observe extension cord and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cord or power strip does not exceed 80 percent of the extension cord or power strip ampere ratings limit.
- Do not use appliance/voltage converters or kits sold for appliances with this system.
- To help protect your system components from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; route system cables and the power cable and plug so that they cannot be stepped on or tripped over. Be sure that nothing rests on your system components' cables or power cable.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the system before removing a component from the system board or disconnecting a peripheral device from the computer.
- Handle batteries carefully. Do not disassemble, crush, puncture, short external contacts, dispose of in fire or water, or expose batteries to temperatures higher than 60 degrees Celsius (140 degrees Fahrenheit). Do not attempt to open or service batteries; replace batteries only with batteries designated for the product.

Turn down the volume before using headphones or other audio devices.

Requirements

Power

In order for the TippingPoint to run properly, you must meet the proper power criteria. The power supply features a redundant 560W hot-swappable power supply (two power modules). One power supply module will take over if the other fails. The hot-swap capability allows you to replace a failed power supply module without powering down the system.

Environmental

To operate the SMS server properly, provide an environment that meets or exceeds the environmental criteria described in the following table:

Table C - 3: Environmental Requirements — SMS based on Supermicro servers

Environmental Specifications	Description
Temperature	10° to 35°C (50° to 95°F) — Operating –40° to 65°C (–40° to 149°F) — Storage
Humidity	8% to 90% (noncondensing) — Operating with a humidity gradation of 10% per hour 5% to 95% (noncondensing) — Storage

D SMS Based on Dell 1750

Provides specifications, hardware requirements, and safety information for the SMS based on Dell PowerEdge 1750 server

Chapter Overview

Note: the SMS based on Dell 1750 server has the power button on the left side. To identify which SMS you have, See "SMS Identification" on page 8.

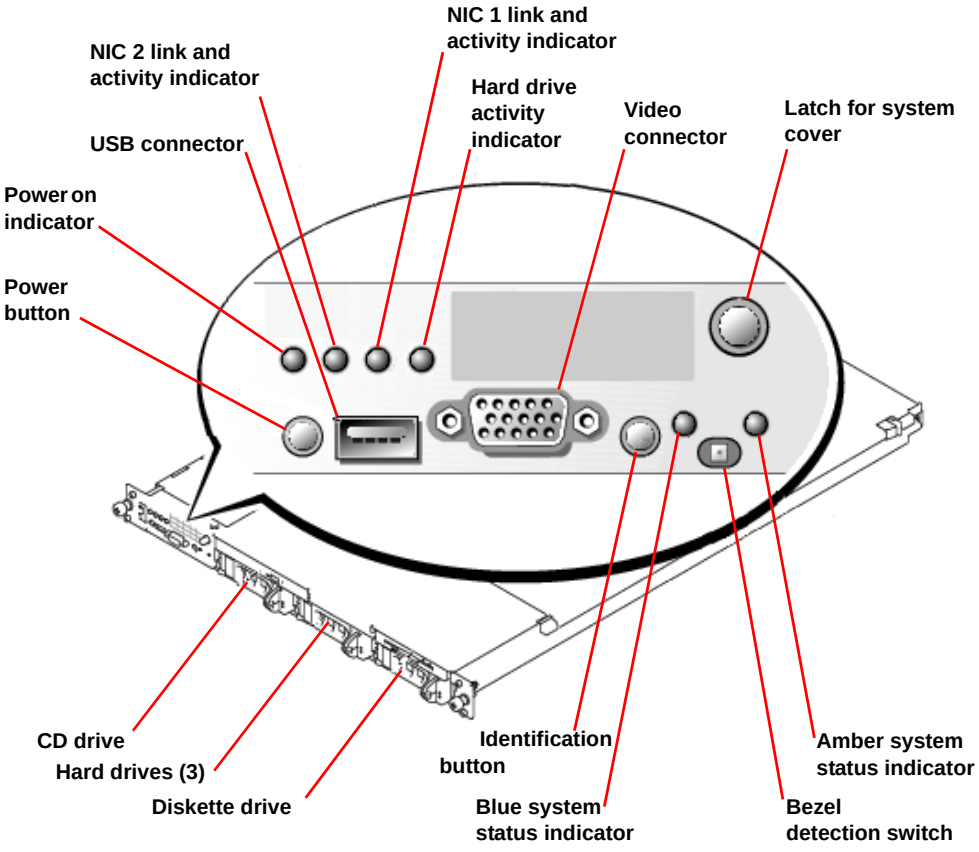
This appendix includes the following topics:

Server Description

To insure proper performance, review the information described in the following sections:

SMS Front Panel:

Figure D - 1: SMS Front Panel — SMS based on Dell 1750 server



Front Panel LED Indicators, Buttons, and Connectors

The following table describes the LED indicators, buttons, and connectors on the front panel of the SMS Server.

Table D - 1: Front Panel LED Indicators, Buttons, and Connectors

LED, Button, or Connector	Icon	Description
Blue system status indicator		The blue system status indicator lights up during normal system operation. Both the systems management software and the identification buttons located on the front and back of the system can cause the blue system status indicator to flash to identify a particular system.

Table D - 1: Front Panel LED Indicators, Buttons, and Connectors (Continued)

LED, Button, or Connector	Icon	Description
Amber system status indicator		The amber system status indicator flashes when the system needs attention. Check for a problem with the power supplies, fans, system temperature, or hard drives. **NOTE:** If the system is connected to AC power and an error has been detected, the amber system status indicator flashes regardless of whether the system has been powered on.
NIC1 and NIC2 link and activity indicators		The link and activity indicators for the two integrated NICs light intermittently when the NICs are in use.
Hard-drive activity indicator		The green hard-drive activity indicator flashes when the hard drives are in use.
Power-on indicator, power button		The power-on indicator lights when the system power is on. The power button controls the DC power supply output to the system. **NOTE:** If you turn off the system using the power button and the system is running an ACPI-compliant operating system, the system performs a graceful shutdown before the power is turned off. If the system is not running an ACPI-compliant operating system, the power is turned off immediately after the power button is pressed.
Identification button		The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pushed, the blue system status indicator on the front and back blinks until one of the buttons is pushed again.
USB connector		Connects a USB 1.1-compliant device to the system.
Video connector		Connects a monitor to the system.

Table D - 2: System Status Indicator Patterns

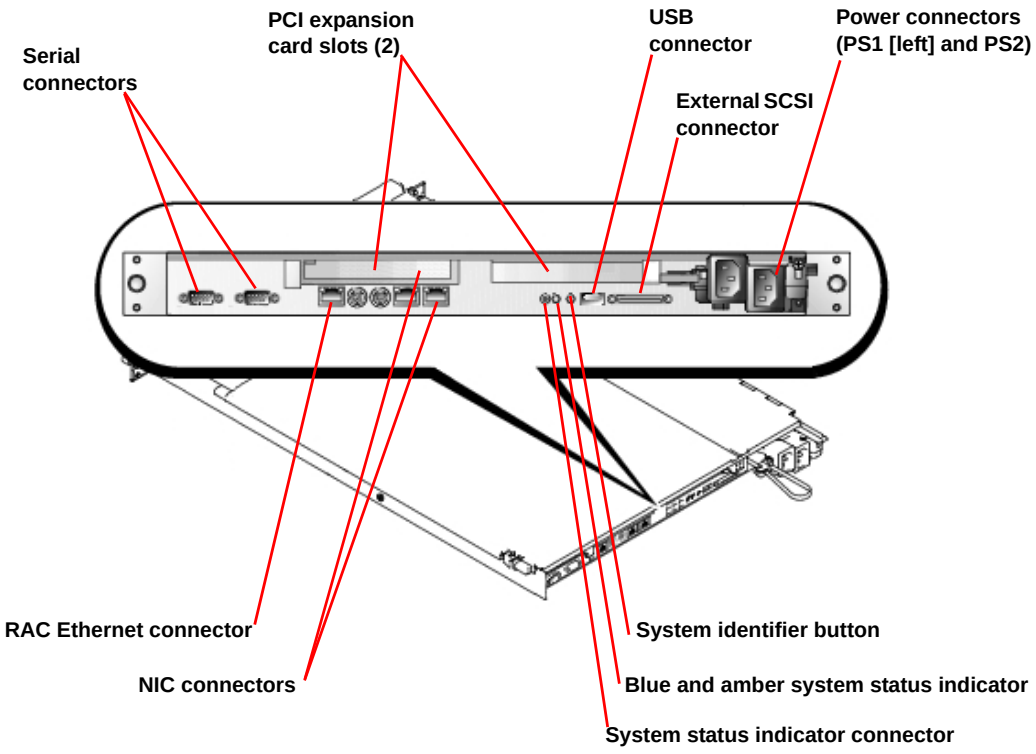
Blue Indicator	Amber Caution Indicator	Description
OFF	OFF	Power is not available to the system, or power is available to the system, but the system is not powered on.
OFF	Blinking	The system has detected an error.
ON	OFF	Power is on, and the system is operational.
Blinking	OFF	The indicator has been activated to identify the system in a rack.

SMS Back Panel

- Ports and Features
- Back Panel LEDs

The following figure depicts the back panel of the SMS Server.

Figure D - 2: SMS Back Panel — SMS based on Dell 1750 server



Ports and Features

The back panel includes the following ports and features:

- Video connectors
- Serial connector
- Keyboard connector
- NIC connectors
- PCI expansion slots
- USB ports
- External SCSI connector
- Power connectors

Back Panel LEDs

Table D - 3: Back Panel LED Indicators — SMS based on Dell 1750 server

LED Indicators	Icon	Description
Blue system status indicator		The blue system status indicator lights up during normal system operation. Both the systems management software and the identification buttons located on the front and back of the system can cause the blue system status indicator to flash to identify a particular system.
Amber system status indicator		The amber system status indicator flashes when the system needs attention. Check for a problem with the power supplies, fans, system temperature, or hard drives. **NOTE:** If the system is connected to AC power and an error has been detected, the amber system status indicator flashes regardless of whether the system has been powered on.

System Cooling

The server includes a fan module with five fans for cooling the processor, hard drives, and PCI cards. The fan system is located in the middle of the chassis to pull cooling air through the chassis. The power supply contains two built-in fans for cooling.

Bezel Security

To help prevent unauthorized access to the system peripherals and control panel, a key locks the optional bezel to the front panel. The key is taped to the inside of the bezel at the factory.

To lock the bezel, insert the key in the lock. Turn the lock clockwise, approximately a quarter turn, until it stops. The bezel is now locked and cannot be opened.

To unlock the bezel, insert the key in the lock and turn the lock counterclockwise until it stops. This is approximately a quarter turn. The bezel is now unlocked and can be opened again.

Safety Guidelines

Use the following safety guidelines to help ensure your own personal safety and to help protect your system and working environment from potential damage.

CAUTION: The power supplies in your system may produce high voltages and energy hazards, which can cause bodily harm. Only trained service technicians are authorized to remove the covers and access any of the components inside the system.

There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer.

This system may have more than one power supply cable. To reduce the risk of electrical shock, a trained service technician must disconnect all power supply cables before servicing the system.

To prevent accidents, adhere to the following guidelines to ensure general safety:

- Remove any dust from the area and keep the area around the SMS server clear and dust-free during and after installation.
- Wear safety glasses if you are working under conditions that might be hazardous to your eyes.

Note: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: this device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

Observe the following general precautions for using and working with your system:

- Observe and follow service markings. Do not service any product except as explained in your system documentation. Opening or removing covers that are marked with the triangular symbol with a

lightning bolt may expose you to electrical shock. Components inside these compartments should be serviced only by an authorized service technician.

- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your authorized service provider:
  - The power cable, extension cord, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.

- Keep your system components away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the computer gets wet, see the appropriate section in your troubleshooting guide or contact an authorized service provider.
- Do not push any objects into the openings of your system components. Doing so can cause fire or electric shock by shorting out interior components.
- Allow the product to cool before removing covers or touching internal components.
- Use the correct external power source. Operate the product only from the type of power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.
- Also be sure that your monitor and attached peripherals are electrically rated to operate with the power available in your location.
- Use only approved power cable(s). If you have not been provided with a power cable for your computer or storage system or for any AC-powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the system components and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help

ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cord, use a three-wire cord with properly grounded plugs.

- Observe extension cord and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cord or power strip does not exceed 80 percent of the extension cord or power strip ampere ratings limit.
- Do not use appliance/voltage converters or kits sold for appliances with this system.
- To help protect your system components from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; route system cables and the power cable and plug so that they cannot be stepped on or tripped over. Be sure that nothing rests on your system components' cables or power cable.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the system before removing a component from the system board or disconnecting a peripheral device from the computer.
- Handle batteries carefully. Do not disassemble, crush, puncture, short external contacts, dispose of in fire or water, or expose batteries to temperatures higher than 60 degrees Celsius (140 degrees Fahrenheit). Do not attempt to open or service batteries; replace batteries only with batteries designated for the product.
- Turn down the volume before using headphones or other audio devices.

Requirements

Power

To operate the SMS server properly, you must supply adequate power. The power supply for the SMS server is rated for 320 watts of power at the following voltages:

- 100 - 240 Volts (V) ~ at 50/60 Hertz (Hz); 3.9 Ampere (A) to a maximum of 2.0 A

Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 25 A per power supply for 10 ms or less.

The system battery is a 3.0-V lithium ion coin cell.

Environmental

To operate the SMS server properly, provide an environment that meets or exceeds the environmental criteria described in the following table:

Table D - 4: Environmental Requirements — SMS based on Dell 1750 server

Environmental Specifications	Description
Temperature	10° to 35°C (50° to 95°F) — Operating –40° to 65°C (–40° to 149°F) — Storage
Humidity	8% to 85% (noncondensing) — Operating with a humidity gradation of 10% per hour 5% to 95% (noncondensing) — Storage

E SMS Based on Intel

Provides specifications, hardware requirements, and safety information for the SMS based on Intel server.

Chapter Overview

Note: The SMS based on Intel server has the power button on the right side. To identify which SMS you have, see "SMS Identification" on page 8.

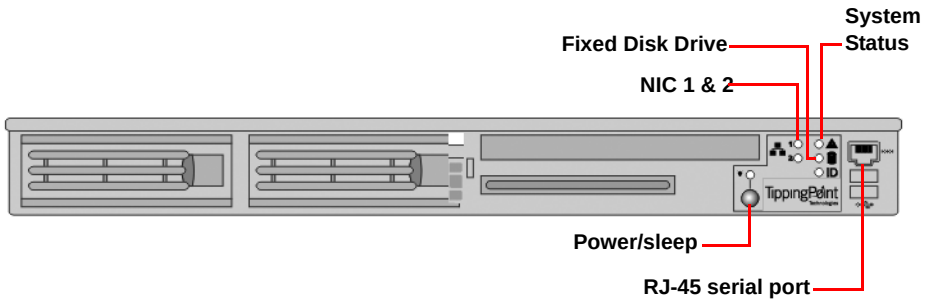
This appendix includes the following topics:

Server Description

To insure proper performance, review the information described in the following sections:

SMS Front Panel

Figure E - 1: SMS Front Panel — SMS based on Intel server



Front Panel RJ-45 Serial Port

The SMS Server includes an RJ-45 serial port on the front panel. This connector is configured to support PC-to-PC communication only. This enables you to use terminal emulation software for quick access to the server management capabilities of the SMS. If used, this port disables the back panel serial port on the SMS Server until the cable has been removed.

Buttons

The following table describes the button on the front panel of the SMS Server.

Table E - 1: Front Panel Button

Button	Description
Power/Sleep 	toggles the system power on and off and gracefully shuts down the system

Front Panel LEDs.

Table E - 2: Front Panel LEDs

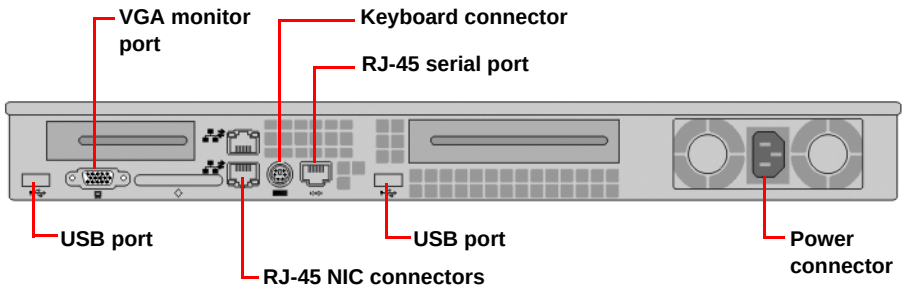
LED	Color	State	Description
Power/sleep 	Green	Continuous	system has power
	Green	Blinking	system is sleeping
	No light	N/A	system has no power applied to it other than standby power

Table E - 2: Front Panel LEDs (Continued)

LED	Color	State	Description
NIC 1 and 2 Activity  **NOTE**: NIC 2 is disabled by default.	Green	Blinking	activity between the system and the network to which it is connected
	Green	Continuous	system is connected but there is no network activity
	No light	N/A	system is not connected
System Status 	Green	Continuous	system is operating normally
	Green	Blinking	system is operating in a degraded condition
	Amber	Continuous	system is in a critical or unrecoverable condition
	Amber	Blinking	system is in a non-critical condition
	No light	N/A	indicates power on self test (POST)/system stop
Fixed Disk Drive Status 	Green	Blinking	indicates fixed disk drive activity
	Amber	Continuous	indicates fixed disk drive fault
	No light	N/A	indicates no fixed disk drive activity or no fault
Identify ID	No light	N/A	not used in SMS

SMS Back Panel

Figure E - 2: SMS **Back Panel — SMS based on Intel server**



Ports and Features

The back panel includes the following ports and features:

- USB ports (inactive)
- RJ-45 NIC connectors. NIC 2, the uppermost connector, is inactive so the LED should be off.
- Keyboard connector
- RJ-45 serial port
- VGA monitor port
- Power connector

Back Panel RJ-45 Serial Port

The back panel of the SMS Server includes an RJ-45 serial port. This connector is configured to support PC-to-PC communication only. This allows you to use terminal emulation software to quickly access the server management capabilities of the SMS. If used, this port disables the front panel serial port on the SMS Server until the cable has been removed.

Back Panel LED

Table E - 3: Back Panel LEDs

LED	Color	State	Description
NIC 1 and 2 Activity  **NOTE**: NIC 2 is disabled by default.	Green	Blinking	indicates activity between the system and the network to which it is connected
	Green	Continuous	indicates the system is connected but there is no network activity
	Amber	Continuous	indicates that the connection between the server and the switch/hub is good
	No light	N/A	indicates the system is not connected
ID	No light	N/A	not used in SMS

System Cooling

The server includes a fan module with five fans for cooling the processor, hard drives, and PCI cards. The fan system is located in the middle of the chassis to pull cooling air through the chassis. The power supply contains two built-in fans for cooling.

Bezel Security

To help prevent unauthorized access to the system peripherals and control panel, a key locks the optional bezel to the front panel. The key is taped to the inside of the bezel at the factory.

To lock the bezel, insert the key in the lock. Turn the lock clockwise, approximately a quarter turn, until it stops. The bezel is now locked and cannot be opened.

To unlock the bezel, insert the key in the lock and turn the lock counterclockwise until it stops. This is approximately a quarter turn. The bezel is now unlocked and can be opened again.

Safety Guidelines

To prevent accidents, adhere to the following guidelines to ensure general safety:

- Remove any dust from the area and keep the area around the SMS server clear and dust-free during and after installation.
- Wear safety glasses if you are working under conditions that might be hazardous to your eyes.

Note: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: this device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

See the following list of cautions and warnings for further safety guidelines.

CAUTION: Before you start the installation procedures, read this entire chapter for important information and safety warnings.

Use proper ESD protection whenever you handle TippingPoint equipment.

Do not power up the system while you are installing and connecting the system.

If you connect the power improperly and then apply power, the server could be damaged.

The equipment rack must be anchored to an immovable support to prevent it from falling over when one or more servers are extended in front of it on slide assemblies. The equipment rack must be installed according to the manufacturer's instructions. You must also consider the weight of any other devices installed in the rack.

You are responsible for installing an AC power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the server.

The server is designed for an AC line voltage source with up to 20 amperes of overcurrent protection. If the power system for the equipment rack is installed on a branch circuit with more than 20 amperes of protection, you must provide supplemental protection for the server. If more than one server is installed in the rack, the power source for each server must be from a separate branch circuit.

Make sure that the server cooling fans run continuously while the system is powered.

The equipment rack must provide sufficient airflow to the front of the server to maintain proper cooling. It must also include ventilation sufficient to exhaust a maximum of 1200 British Thermal Units (BTUs).

WARNING: Read all of the installation instructions before you connect the system to its power source.

If server power cords are plugged into AC outlets that are part of the rack, then you must provide proper grounding for the rack itself. If server power cords are plugged into wall AC outlets, the safety grounding conductor in each power cord provides proper grounding only for the server. You must provide additional, proper grounding for the rack and other devices installed in it.

When installing the unit, always make the ground connection first and disconnect it last.

Do not work on the system or connect or disconnect cables during periods of lightning activity.

The push-button on/off power switch on the front panel of the server does not turn off the AC power. To remove AC power from the server, you must unplug the AC power cord from either the power supply or the wall outlet.

Hazardous voltage, current, and energy levels are present inside the power supply enclosure. There are no user-serviceable parts inside it; servicing should only be done by technically qualified personnel.

Lifting the server and attaching it to the rack is a two-person job. If needed, use an appropriate lifting device.

Only trained and qualified personnel should install, replace, or service this equipment. Disconnect the system before servicing.

To prevent the unit from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 104° F (40° C). To prevent airflow restriction, allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.

Requirements

Power

To operate the SMS server properly, you must supply adequate power. The power supply for the SMS server is rated for 250 watts of power at the following voltages:

- 100-127 Volts (V) ~ at 50/60 Hertz (Hz); 3.6 Ampere (A) maximum
- 200 - 240 V ~ at 50/60 Hz; 1.8 A maximum

Environmental

To operate the SMS server properly, provide an environment that meets or exceeds the environmental criteria described in the table below.

Table E - 4: Environmental Requirements — SMS based on Intel server

Environmental Specifications	Description
Temperature	5° - 35° C (41° - 95° F) — Operating
Humidity	5% to 95% (non-condensing)

F RJ-45 to DB-9 Adaptor

Provides instructions for building a RJ-45 to DB-9 serial adaptor.

Overview

The RJ-45 to DB-9 serial adaptor supports PC-to-PC communication which allows you to use terminal emulation software for quick access to the server management capabilities of the SMS. This adaptor is shipped with the SMS Server. Use a four pair, Cat 5 ethernet patch cable to connect to your server and access the SMS CLI.

If you lose this adapter, you can contact TippingPoint to request a new one. Alternatively, you can refer to the RJ-45 to DB-9 pin-outs to construct a new one. Refer to the following sections for more information about the pin-outs on the adapter.

RJ-45 Port and Adapter Pin-outs

The RJ-45 to DB-9 adapter connects the SMS Server to a PC for serial access to the SMS CLI:

Figure F - 1: RJ-45 to DB-9 Adapter

See the following table for detailed information about the pin-outs on this adapter:

Table F- 1: RJ-45 Port and Adapter Pin-outs

Signal	Console Port (DTE)	RJ-45 Rolled Cable	Adapter	Adapter	Signal
	RJ-45	**RJ-45 Pin**	**DB-9 Pin Female**	**DB-25 Pin**	
CTS	1 - white	8	7 - white	4	RTS
DTR	2 - brown	7	4 - brown	20	DSR
TxD	3 - yellow	6	3 - yellow	2	RxD
GND	4 - green	5	5 - green	7	GND
GND	5 - red	4	5 - (drop)	7	GND
RxD	6 - black	3	2 - black	3	TxD
DSR	7 - orange	2	6 -orange	6	DTR
RTS	8 - blue	1	8 - blue	5	CTS

G Port Requirements and Options

Provides the port requirements and options for the SMS.

Overview

This section includes the following topics:

Required Ports

The following table lists and describes the ports that you must make available.

Table G - 1: Required Port Availability

Port	Service	From	To	Description
SMS Client Ports				
10042/TCP	SMS	SMS client	SMS server	GUI management of SMS
22/TCP	SSH	SMS client	SMS server	CLI management of SMS
SMS Server Ports				
943/TCP	HTTPS	SMS server	SMS client	SMS restore
161/UDP	SNMP (agent)	SMS server	IPS	SMS management
4043/TCP	HTTPS	SMS server	IPS	SMS management
SMS Client Browser Ports				
443/TCP	HTTPS	SMS client browser	SMS server	file downloads, such as Client installation, exported reports, web services (if configured)
Device Ports				
8162/UDP	SNMP (trap)	IPS	SMS server	SMS traps
8163/UDP	SNMP (trap)	IPS	SMS server	SMS traps

TMC Ports

The following table lists and describes the TMC ports that you must make available.

Table G - 2: TMC Port Availability

Port	Service	From	To	Description
Required Ports				
80/TCP	HTTP	SMS server	outbound	Digital Vaccine updates from TMC
4043/TCP*	HTTPS	SMS server	TMC	Updates from TMC If your installation is prior to V 2.5.1, this port is the default for communication with the TMC. Upgrading does not change this port setting.
443/TCP*	HTTPS	SMS server	TMC	Updates from TMC for New SMS installations, this port is the new default for communication with he TMC.
Optional Ports				
80/TCP	HTTP	SMS server	TMC proxy server	TMC updates (TMC proxy server must be configured using the SMS Client)

Quarantine Ports

The following tables lists and describes the Quarantine ports that you should make available. These ports are determined by the use of Quarantine on SMS. Quarantine (Actions) Port Availability

Port	Service	From	To	Description
80/TCP	HTTP	SMS server	remote host	Quarantine Web action
23/TCP	telnet	SMS server	external switch	Quarantine Switch Disconnect action
1812/UDP	Radius	External switch	SMS server	Radius proxy (required for Quarantine Switch disconnect action)
25/TCP	SMTP	SMS server	mail server	Quarantine Email action
162/UDP	SNMP	SMS server	remote host	Quarantine SNMP action
162/UDP	SNMP	SMS server	remote host	Quarantine NMS action
514/UDP	syslog	SMS server	syslog server	Quarantine Syslog action

Table G - 3: Quarantine (Triggers) Port Availability

Port	Service	From	To	Description
162/UDP	SNMP	NMS server	SMS server	SNMP traps from an SNMP client or NMS server, such as 3Com Network Directory (3ND) to Quarantine
80/TCP	HTTP	External host	SMS server	Trigger Quarantine/unquarantine via URL, IP correlation lookup, IP or MAC lookup
443/TCP	HTTPS	External host	SMS server	Trigger Quarantine/unquarantine via URL, IP correlation lookup, IP or MAC lookup

Note Additional ports may need to be opened if they are defined in a Quarantine Action script.

HA Ports

The following table lists and describes the High Availability ports that you must make available. In addition to these HA ports, all of the ports listed in Table G - 1, "Required Port Availability," on page 106 must be open for both primary and secondary SMS servers.

Table G - 4: HA Port Availability

Port	Service	From	To	Description
22/TCP	SSH	SMS primary	SMS secondary	Secure remote command execution and file replication
		SMS secondary	SMS primary	
10042/TCP	SMS	SMS primary	SMS secondary	CLI command replication
		SMS secondary	SMS primary	
3306/TCP	MySql	SMS primary	SMS secondary	Database Replication
		SMS secondary	SMS primary	
1098/TCP	RMI	SMS primary	SMS secondary	JAVA RMI for HA configuration and remote peer administration
		SMS secondary	SMS primary	
1099/TCP	RMI registry	SMS primary	SMS secondary	JAVA RMI for HA configuration and remote peer administration
		SMS secondary	SMS primary	
4444/TCP	RMI	SMS primary	SMS secondary	JAVA RMI for HA configuration and remote peer administration
		SMS secondary	SMS primary	

Optional Ports

The following table lists and describes the optional ports that you can make available.

Table G - 5: Optional Port Availability

Port	Service	From	To	Description
SMS Client Port				
23/TCP	Telnet	SMS client	SMS server	CLI
SMs Client Browser Port				
80/TCP	HTTP	SMS client browser	SMS server	file downloads, such as Client installation, exported reports, web services
SMS Server Ports				
123/UDP	NTP	SMS server	NTP server (time source)	time synchronization from external NTP server
53/TCP/UDP	DNS	SMS server	name server	name resolution
137/TCP/UDP	Samba	SMS server	file server	report export, database backup
138/TCP/UDP				
139/TCP/UDP				
1512/TCP/UDP				
2039/TCP/UDP	NFS	SMS server	file server	report export, database backup
111/TCP/UDP				
369/TCP/UDP				
25/TCP	SMTP	SMS server	Mail server	email notifications, such IPS events, Quarantine
514/UDP	Syslog	SMS server	Syslog server	SMS audit and syslog
1812/UDP	Radius	SMS server	Radius server	SMS user authentication
Device Ports				
123/TCP	NTP	IPS	SMS server	required only if IPS uses SMS for NTP time synchronization
10043/TCP	SMS provision	X-Family device	SMS server	X-Family remote acquisition
SNMP Client Port				
161/UDP	SNMP	SNMP client	SMS server	To query SMS SNMP MIBs

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