

Intel® Server Chassis SC5250-E Subassembly Product Guide



**A Guide for Technically Qualified Assemblers of Intel® Identified
Subassemblies/Products**

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<http://support.intel.com/support/motherboards/server/chassis/sc5250-E>

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1 Important Safety and Regulatory Information

Important Safety Information

Only a technically qualified person shall access, integrate, configure, and service this product.





Intended Application Uses

This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other Product Categories and Environments (such as medical, industrial, alarm systems, and test equipment), other than an ITE application, may require further evaluation.

Safety Instructions and Information

To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all of the following safety instructions and information. The following safety symbols may be used throughout this product guide, and may be marked on the product and or its packaging.

Table 1. Safety Symbols

CAUTION	Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.
WARNING	Indicates the presence of a hazard that may result in serious injury or death if the WARNING is ignored.
	Indicates potential hazard if hazard symbol is ignored.
	Indicates shock hazards that result in serious injury or death if safety instructions are not followed.
	Indicates hot components or surfaces.
	Indicates do not touch fan blades, may result in injury.

Checking the Power Cord

CAUTION

To avoid electrical shock, check the power cord(s) that will be used with the product:

- Do not attempt to modify or use the AC power cord(s) if they are not the exact type required.
- If a power cord is not compatible with the AC wall outlet in your region, get one that meets the following criteria:
 - The power cord must be properly rated for the AC voltage in your region.
 - The power cord plug cap must have an electrical current rating that is at least 125% of the electrical current rating of the product.
 - The power cord plug cap that plugs into the wall socket-outlet must have a grounding-type male plug designed for use in your region.
 - The power cord must have safety certifications for your region, and shall be marked with the certification markings.
 - The power cord plug cap that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, type female connector.
 - In Europe, the power cord must be less than 4.5 meters (14.76 feet) long, and it must be flexible <HAR> (harmonized) or VDE certified cordage to comply with the chassis' safety certifications.
- The power supply cord(s) is the main disconnect device to AC power. The socket outlet(s) shall be near the equipment and shall be readily accessible for disconnection.

Earth Grounded Socket-Outlets

CAUTION

To avoid electrical shock, the system power cord(s) must be plugged into socket-outlet(s) that is provided with a suitable earth ground. The system will be provided with the following marking:

Connect only to properly earthed socket outlet.

Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk.

Before You Remove the Access Covers

CAUTION

To avoid personal injury or property damage, the following safety instructions apply whenever accessing inside the product:

- Turn off all peripheral devices connected to this product.
- Turn off the system by pressing the power button on the front of the product.
- Disconnect the AC power by unplugging all AC power cords from the system or wall outlet.
- Disconnect all cables and telecommunication lines that are connected to the system.
- Retain all screws or other fasteners when removing access cover(s). Upon completion of accessing inside the product, refasten access cover with original screws or fasteners.
- Do not access inside power supply. There are no serviceable parts in the power supply.
- Return to manufacturer for servicing.

Fans

CAUTION

To avoid injury do not contact moving fan blades.

Electrostatic Discharge (ESD)

CAUTION

Perform the procedures in this product guide only at an electrostatic discharge (ESD) workstation, because the server components can be extremely sensitive to ESD. If no such station is available, you can reduce the risk of electrostatic discharge ESD damage by doing the following:

- Wear an antistatic wrist strap and attach it to a metal part of the server.
- Touch the metal on the server chassis before touching the server components.
- Keep part of your body in contact with the metal server chassis to dissipate the static charge while handling the components.
- Avoid moving around unnecessarily.
- Hold the server components (especially boards) only by the edges.
- Place the server components on a grounded, static-free surface. Use a conductive foam pad if available but not the component wrapper.
- Do not slide the components over any surface.

Cooling and Airflow

CAUTION

For proper cooling and airflow, always install all access covers before turning on the system. Operating the system for longer than five minutes without the covers in place can cause overheating and damage to system components.

Important Set-Up Safety Information

 WARNING: ENGLISH (US)

 AVERTISSEMENT: FRANÇAIS

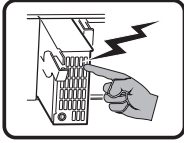
 WARNUNG: DEUTSCH

 AVVERTENZA: ITALIANO

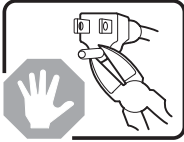
 ADVERTENCIAS: ESPAÑOL



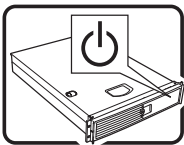
WARNING: English (US)



The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product. Refer servicing only to qualified personnel.



Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.

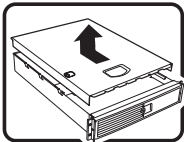


The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply. The power cord(s) is considered the disconnect device to the mains (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible.

SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps:

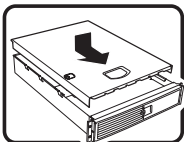


1. Turn off all peripheral devices connected to the system.
2. Turn off the system by pressing the power button.
3. Unplug all AC power cords from the system or from wall outlets.
4. Label and disconnect all cables connected to I/O connectors or ports on the back of the system.
5. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components.
6. Do not operate the system with the chassis covers removed.



After you have completed the six SAFETY steps above, you can remove the system covers. To do this:

1. Unlock and remove the padlock from the back of the system if a padlock has been installed.
2. Remove and save all screws from the covers.
3. Remove the covers.



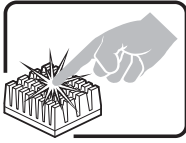
For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers:

1. Check first to make sure you have not left loose tools or parts inside the system.
2. Check that cables, add-in boards, and other components are properly installed.
3. Attach the covers to the chassis with the screws removed earlier, and tighten them firmly.
4. Insert and lock the padlock to the system to prevent unauthorized access inside the system.
5. Connect all external cables and the AC power cord(s) to the system.

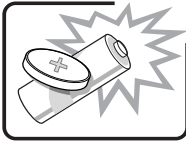
continued



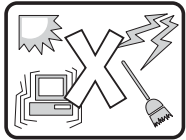
Warning: English (US) (continued)



A microprocessor and heat sink may be hot if the system has been running. Also, there may be sharp pins and edges on some board and chassis parts. Contact should be made with care. Consider wearing protective gloves.



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

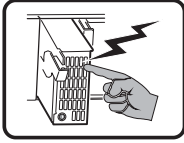


The system is designed to operate in a typical office environment. Choose a site that is:

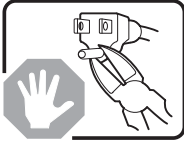
- Clean and free of airborne particles (other than normal room dust).
 - Well ventilated and away from sources of heat including direct sunlight.
 - Away from sources of vibration or physical shock.
 - Isolated from strong electromagnetic fields produced by electrical devices.
 - In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppresser and disconnect telecommunication lines to your modem during an electrical storm.
 - Provided with a properly grounded wall outlet.
 - Provided with sufficient space to access the power supply cord(s), because they serve as the product's main power disconnect.
-



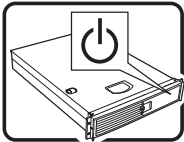
AVERTISSEMENT: Français



Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème.



Ne pas essayer d'utiliser ni modifier le câble d'alimentation CA fourni, s'il ne correspond pas exactement au type requis. Le nombre de câbles d'alimentation CA fournis correspond au nombre de blocs d'alimentation du produit.

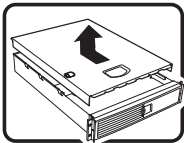


Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.

CONSIGNES DE SÉCURITÉ -Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes:



1. Mettez hors tension tous les périphériques connectés au système.
2. Mettez le système hors tension en mettant l'interrupteur général en position OFF (bouton-poussoir).
3. Débranchez tous les cordons d'alimentation c.a. du système et des prises murales.
4. Identifiez et débranchez tous les câbles reliés aux connecteurs d'E-S ou aux accès derrière le système.
5. Pour prévenir les décharges électrostatiques lorsque vous touchez aux composants, portez une bande antistatique pour poignet et reliez-la à la masse du système (toute surface métallique non peinte du boîtier).
6. Ne faites pas fonctionner le système tandis que le boîtier est ouvert.



Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit:

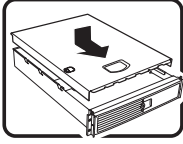
1. Si un cadenas a été installé sur à l'arrière du système, déverrouillez-le et retirez-le.
2. Retirez toutes les vis des panneaux et mettez-les dans un endroit sûr.
3. Retirez les panneaux.

suite

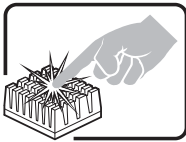


AVERTISSEMENT: Français (suite)

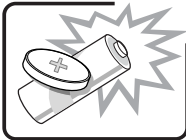
Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit:



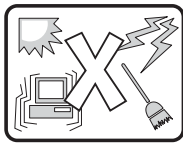
1. Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système.
2. Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés.
3. Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt.
4. Remettez le cadenas en place et verrouillez-le afin de prévenir tout accès non autorisé à l'intérieur du système.
5. Rebranchez tous les cordons d'alimentation c. a. et câbles externes au système.



Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection.



Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.

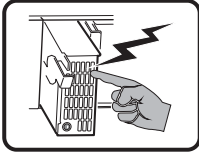


Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être:

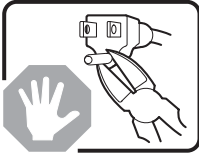
- Propre et dépourvu de poussière en suspension (sauf la poussière normale).
- Bien aéré et loin des sources de chaleur, y compris du soleil direct.
- A l'abri des chocs et des sources de vibrations.
- Isolé de forts champs électromagnétiques générés par des appareils électriques.
- Dans les régions sujettes aux orages magnétiques il est recommandé de brancher votre système à un supresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage.
- Muni d'une prise murale correctement mise à la terre.
- Suffisamment spacieux pour vous permettre d'accéder aux câbles d'alimentation (ceux-ci étant le seul moyen de mettre le système hors tension).



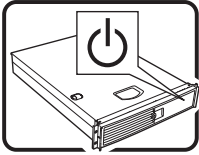
WARNUNG: Deutsch



Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden.



Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht genau um den erforderlichen Typ handelt. Ein Produkt mit mehreren Netzgeräten hat für jedes Netzgerät ein eigenes Netzkabel.

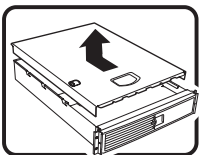


Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.



SICHERHEISSCHRIFFEN: Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten:

1. Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus.
2. Schalten Sie das System mit dem Hauptschalter aus.
3. Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose.
4. Auf der Rückseite des Systems beschrifteten und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab.
5. Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden.
6. Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.



Nachdem Sie die oben erwähnten ersten sechs SICHERHEITSSCHRITTE durchgeführt haben, können Sie die Abdeckung abnehmen, indem Sie:

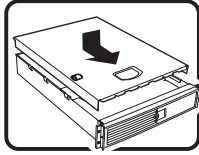
1. Öffnen und entfernen Sie die Verschlusseinrichtung (Padlock) auf der Rückseite des Systems, falls eine Verschlusseinrichtung installiert ist.
2. Entfernen Sie alle Schrauben der Gehäuseabdeckung.
3. Nehmen Sie die Abdeckung ab.

Fortsetzung

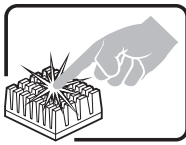


WARNUNG: Deutsch (Fortsetzung)

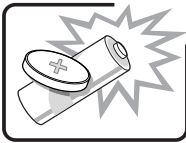
Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen:



1. Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben.
 2. Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation.
 3. Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben wieder anbringen. Ziehen Sie diese gut an.
 4. Bringen Sie die Verschlusseinrichtung (Padlock) wieder an und schließen Sie diese, um ein unerlaubtes Öffnen des Systems zu verhindern.
 5. Schließen Sie alle externen Kabel und den AC Stromanschlußstecker Ihres Systems wieder an.
-

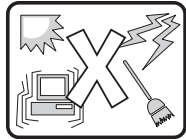


Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.



Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie verbrauchte Batterien den Anweisungen des Herstellers entsprechend.

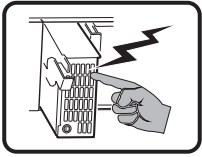
Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:



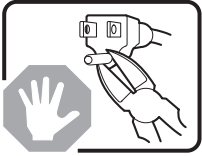
- sauber und staubfrei sein (Hausstaub ausgenommen);
 - gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung);
 - keinen Erschütterungen ausgesetzt sein;
 - keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen;
 - in Regionen, in denen elektrische Stürme auftreten, mit einem Überspannungsschutzgerät verbunden sein; während eines elektrischen Sturms sollte keine Verbindung der Telekommunikationsleitungen mit dem Modem bestehen;
 - mit einer geerdeten Wechselstromsteckdose ausgerüstet sein;
 - über ausreichend Platz verfügen, um Zugang zu den Netzkabeln zu gewährleisten, da der Stromanschluß des Produkts hauptsächlich über die Kabel unterbrochen wird.
-



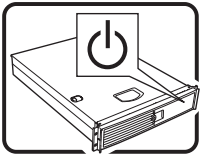
AVVERTENZA: Italiano



Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione.



Non modificare o utilizzare il cavo di alimentazione in c.a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto. Ad ogni fonte di alimentazione corrisponde un cavo di alimentazione in c.a. separato.

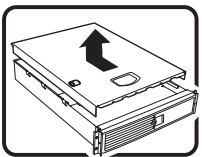


L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.



PASSI DI SICUREZZA: Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi:

1. Spegner tutti i dispositivi periferici collegati al sistema.
2. Spegner il sistema, usando il pulsante spento/acceso dell'interruttore del sistema.
3. Togliere tutte le spine dei cavi del sistema dalle prese elettriche.
4. Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema.
5. Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema – qualsiasi superficie non dipinta – .
6. Non far operare il sistema quando il telaio è senza le coperture.



Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come segue:

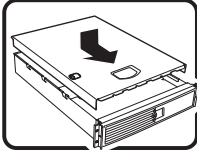
1. Aprire e rimuovere il lucchetto dal retro del sistema qualora ve ne fosse uno installato.
2. Togliere e mettere in un posto sicuro tutte le viti delle coperture.
3. Togliere le coperture.

continua

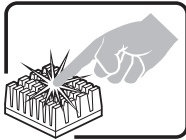


AVVERTENZA: Italiano (continua)

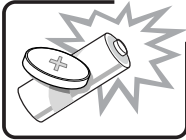
Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiare i componenti del sistema. Per rimettere le coperture del telaio:



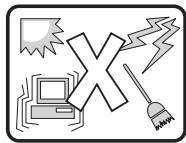
1. Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema.
2. Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente.
3. Attaccare le coperture al telaio con le viti tolte in precedenza e avvitare strettamente.
4. Inserire e chiudere a chiave il lucchetto sul retro del sistema per impedire l'accesso non autorizzato al sistema.
5. Ricollegare tutti i cavi esterni e le prolunghe AC del sistema.



Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione.



Esiste il pericolo di un'esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.

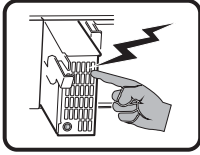


Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia:

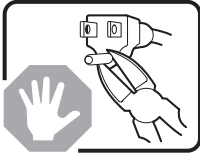
- Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente).
- Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta.
- Al riparo da urti e lontana da fonti di vibrazione.
- Isolata dai forti campi magnetici prodotti da dispositivi elettrici.
- In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem.
- Dotata di una presa a muro correttamente installata.
- Dotata di spazio sufficiente ad accedere ai cavi di alimentazione, i quali rappresentano il mezzo principale di scollegamento del sistema.



ADVERTENCIAS: Español

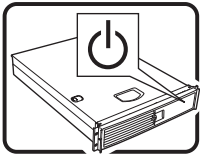


El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación.



No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido.

El número de cables suministrados se corresponden con el número de fuentes de alimentación de corriente alterna que tenga el producto.

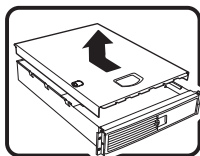


Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.



INSTRUCCIONES DE SEGURIDAD: Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones:

1. Apague todos los dispositivos periféricos conectados al sistema.
2. Apague el sistema presionando el interruptor encendido/apagado.
3. Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna.
4. Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema.
5. Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujeta a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar.
6. No ponga en marcha el sistema si se han extraído las tapas del chasis.



Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello:

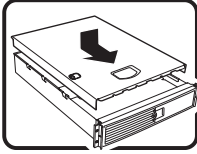
1. Desbloquee y extraiga el bloqueo de seguridad de la parte posterior del sistema, si se ha instalado uno.
2. Extraiga y guarde todos los tornillos de las tapas.
3. Extraiga las tapas.

continuación

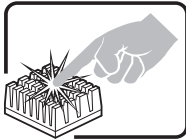


ADVERTENCIAS: Español (continuación)

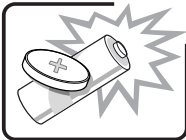
Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas:



1. Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema.
2. Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente.
3. Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente.
4. Inserte el bloqueo de seguridad en el sistema y bloquéelo para impedir que pueda accederse al mismo sin autorización.
5. Conecte todos los cables externos y los cables de alimentación CA al sistema.



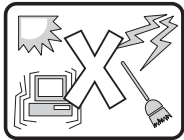
Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.



Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante.

El sistema está diseñado para funcionar en un entorno de trabajo normal. Escoja un lugar:

- Limpio y libre de partículas en suspensión (salvo el polvo normal).
- Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa.
- Alejado de fuentes de vibración.
- Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos.
- En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltage y desconectar el módem de las líneas de telecomunicación durante las tormentas.
- Provisto de una toma de tierra correctamente instalada.
- Provisto de espacio suficiente como para acceder a los cables de alimentación, ya que éstos hacen de medio principal de desconexión del sistema.



Product Regulation Compliance Information

This product has been verified to comply with the following safety standards / requirements:

Product Safety

Argentina	Resolution S.I.C.M No. 92/98
Australia / New Zealand	AS/NZS 3562
Canada / USA	UL60 950 – CSA60 950
China	GB4943-1995
European Union	EN60 950 & 73/23/EEC
Germany	EN60 950
International	IEC 60 950, 3 rd Edition
Nordics	EMKO-TSE (74-SEC) 207/94
Russia	GOST-R 50377-92

Electromagnetic Compatibility (EMC) - Emissions

Australia / New Zealand	AS/NZS 3548 (Class A)
Canada	ICES-003 (Class A)
China	GB9254-1998
European Union	EN55022: 1994 (Class A) & 89/336/EEC
International	CISPR 22, 3 rd Edition (Class A)
Japan	VCCI (Class A)
Korea	MIC Notice 1997-42 (Class A)
Russia	GOST-R 29216-91 (Class A)
Taiwan	BSMI CNS13438
USA	Title 47 CFR, Part 15 (Class A)










Electromagnetic Compatibility - Immunity

China	GB9254-1998
European Union	EN55024: 1998
International	CISPR 24: 1st Edition
Korea	MIC Notice 1997-41
Russia	GOST-R 50628-95

Power Line Harmonics / Voltage Flicker

China	GB17625.1-1998
European Union	EN61000-3-2 / EN61000-3-3
International	IEC61000-3-2
Japan	JEIDA

Table 2. Product Regulatory Compliance Markings

Country	Markings on Product or Packaging	Marking Description
Australia / New Zealand		EMC Compliance Mark. Note : As shown indicates that the compliance folder is held in Australia
China		CCC EMC & Safety Compliance Marking
	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，可能需要用户对干扰采取可行的措施。	EMC Class A Warning
Canada		System Compliance Safety Mark (same for USA)
	CANADA ICES-003 CLASS A	EMC Compliance Mark
European Union / Nordics		Declaration of Conformity Mark
Germany		System Safety Compliance Mark
Japan	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請される場合があります。VCCI-A	EMC Compliance Mark – Class A
Korea		EMC Compliance Mark
Russia		Safety & EMC Compliance Mark
Taiwan		BSMI RPC Marking
	警告使用者： 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策	BSMI EMC Warning for Class A Devices
USA		System Compliance Safety Mark (same for Canada)
	This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. Manufactured by Intel Corporation	EMC Compliance Marking Statement – Class A Products



Regional EMC Compliance Information

Table 3. Regional EMC Compliance Information

Country	Compliance Information
USA	<p>FCC Verification Notice (Class A)</p> <p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p>For questions related to the EMC performance of this product, contact:</p> <p style="padding-left: 40px;">Intel Corporation 5200 N.E. Elam Young Parkway Hillsboro, OR 97124 1-800-628-8686</p> <p>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 NOT designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:</p> <p>Reorient or relocate the receiving antenna.</p> <p>Increase the separation between the equipment and the receiver.</p> <p>Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.</p> <p>Consult the dealer or an experienced radio/TV technician for help.</p>
	CANADA
CHINA	<p>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可行的措施。</p>
EUROPE	<p>CE Declaration of Conformity</p> <p>This product has been tested in accordance to, and complies with the European Low Voltage Directive (73/23/EEC) and European EMC Directive (89/336/EEC). The product has been marked with the CE Mark to illustrate its compliance.</p>

continued

Table 3. Regional EMC Compliance Information (continued)

Country	Compliance Information
<p>JAPAN</p>	<p>VCCI (Class A)</p> <div data-bbox="548 321 1089 426" style="border: 1px solid black; padding: 5px;"> <p>この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラス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。</p> </div> <p>English translation of the notice above is as follow: This is a Class A product based on the standard of the Voluntary Control Council For Interference (VCCI) from Information Technology Equipment. If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.</p>
<p>TAIWAN</p>	<p>BSMI Certification Information</p> <div data-bbox="537 642 597 716" style="text-align: center;">  <small>R33025</small> </div> <p>The following BSMI EMC Warning is marked on the product: BSMI Cert No and EMC Warning are required for Class A products.</p> <div data-bbox="537 789 979 894" style="border: 1px solid black; padding: 5px;"> <p>警告使用者： 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策</p> </div>
<p>KOREA</p>	<p>RRL Certification Information</p> <div data-bbox="537 947 748 999" style="text-align: center;">  <ul style="list-style-type: none"> 1. 기기의 명칭(모델명) : 2. 인증번호 : 3. 인증받은 자의 상호 : 4. 제조년월일 : 5. 제조지/제조국가 : </div> <p>The English translation for the above is as follows:</p> <ol style="list-style-type: none"> 1. Type of Equipment (Model Name): SC5250-E Server Chassis. 2. Certification No.: Contact Intel representative. 3. Name of Certification Recipient: Intel Corporation. 4. Date of Manufacturer: Refer to date code on product. 5. Manufacturer / Nation: Intel / Refer to manufacturing label on product.

Product Ecology Documentation

Disposal Considerations

This product contains the following materials that may be regulated upon disposal:

Battery: see page 26.

Lead solder: Lead may be found in chassis and server boards.

Intel encourages its customers to recycle its products and their components (such as batteries and boards) whenever possible. In the US, a list of recyclers in your area can be found at:

<http://www.eiae.org>.

In the absence of a viable recycling option, products and their components must be disposed of in accordance with all applicable local environmental regulations.

Disassembly Instructions

This section is intended to aid electronic recyclers in disassembly of Intel® products.

WARNING

Only a technically qualified person shall access, integrate, configure, service, or disassemble this product.

Tools needed:

- One Phillips* screwdriver
- Small flathead screwdriver

Backup Battery

The lithium battery on the baseboard powers the real-time clock (RTC) for up to 10 years in the absence of power. When the battery starts to weaken, it loses voltage, and the server settings stored in CMOS RAM in the RTC (for example, the date and time) might be incorrect.

For a list of approved replacement batteries, contact your customer service representative or dealer.

WARNING!

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

ADVARSEL!

Lithiumbatteri - Eksplosjonsfare ved fejlagtig håndtering. Udsiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

ADVARSEL!

Lithiumbatteri - Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

WARNING!

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

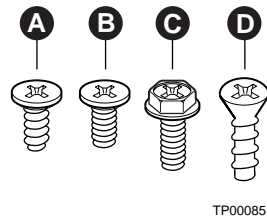
VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

2 Chassis Description

Kit Contents

The chassis subassembly kit includes this product guide and a box that includes two pair of 5.25-inch external drive rails, four different types of mounting screws, and two brackets for the optional SCSI hot-swap hard drive bay (SCSI hot-swap hard drive bay not included).



- A. Flat head 6-32 x 5mm [.200] C. Hex head 6-32 x 6mm [.256]
B. Flat head M3 x 5mm [.200] D. Countersunk threadforming

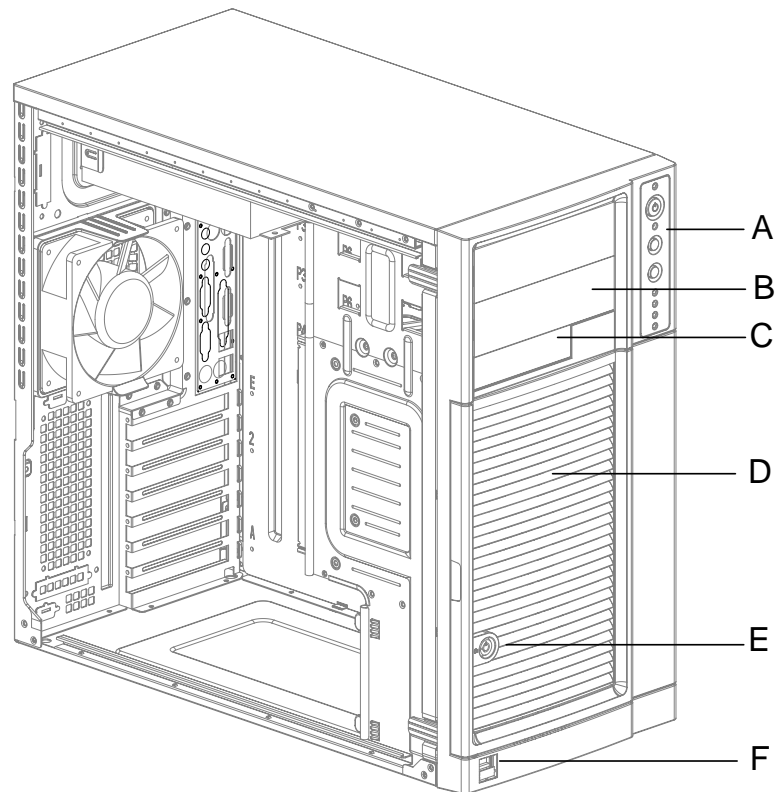
Figure 1. Screw Description

Feature Summary

Table 4. Feature Summary

Feature	Description
Drive Bays	One 3.5-inch diskette drive bay, accessible from front. Two 5.25-inch wide bays that are externally accessible, designed to hold half-height standard removable media devices. A hard drive bay cage designed to hold up to six 3.5-inch hard disk drives. The cage is not externally accessible. An optional hot swap bay for 3.5-inch hard disk drives: space for up to five 1-inch high, SCSI hot-swap hard drives or four SATA drives.
Expansion Slot Covers	Up to seven expansion slots can be used; unused expansion slots must have a slot cover installed over the external access.
Power Supply	450 watt PFC power supply.
Cooling	Two system fans inside the chassis and one power supply fan provide cooling and airflow.

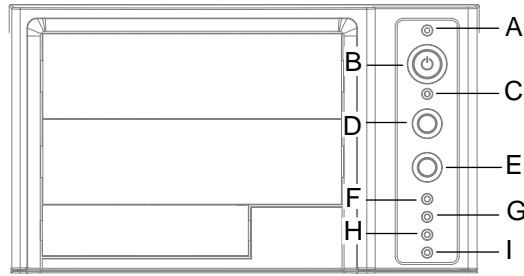
Chassis Front View



TP00053

- A. Front panel controls and indicators
- B. 5.25-inch removable media drive bays
- C. 3.5-inch removable media drive bay
- D. Internal hard drive bay cage (behind door)
- E. Security lock
- F. USB port

Front Panel Controls and Indicators



TP00080

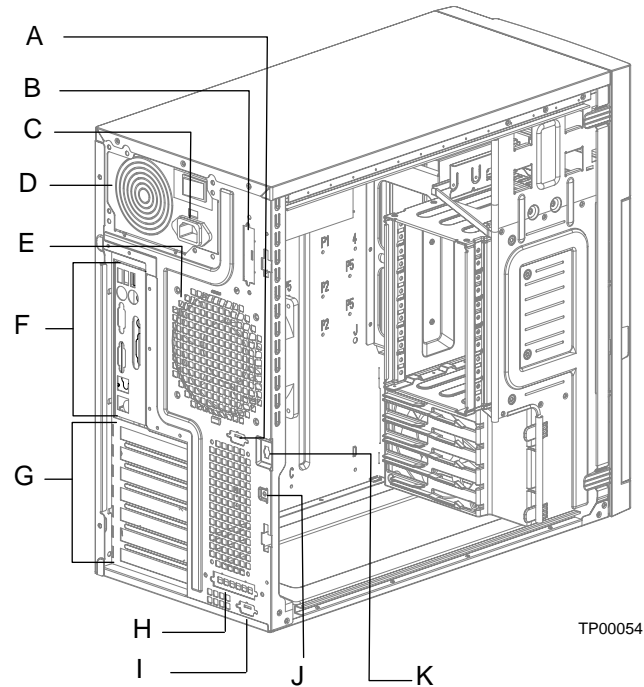
- A. Power / sleep LED
- B. Power button
- C. NMI button
- D. Reset button
- E. Sleep button
- F. NIC 1 activity LED
- G. NIC 2 activity LED
- H. Hard drive activity LED
- I. Status LED

*** Some items may not be supported by all server boards.**

Table 5. LED Description

LED Name	Color	Condition	Description
Power/Sleep LED	Green	ON	Power on
	Amber	ON	Sleep (S1)
		OFF	Power off or Sleep (S4)
LAN#1 Link/Act	Green	ON	Linked
		BLINK	LAN activity
		OFF	Disconnected
LAN#2-Link/Act	Green	ON	Linked
		BLINK	LAN activity
		OFF	Disconnected
Hard Drive activity	Green	BLINK	Hard drive activity
	Amber	ON	Fault
		OFF	No activity
Status LED	Green	ON	System ready (not supported by all server boards)
		BLINK	Processor or memory disabled
	Amber	ON	Temperature or voltage critical fault; CPU/Terminator missing
		BLINK	Power fault; Fan fault; Temperature or voltage non-critical fault
		OFF	Fatal error during POST

Chassis Rear View



- A. Alternate Serial B port knockout
- B. Alternate ICMB or external SCSI knockout
- C. AC input power connector
- D. Power supply
- E. Fan
- F. I/O ports*
- G. Expansion slot covers
- H. ICMB or external SCSI knockout
- I. Serial B port knockout
- J. Location to install padlock loop
- K. Chassis intrusion switch

*** Items shown may be different in your chassis.**

Peripherals

5.25-inch Removable Media Drive Bays

The upper bays are designed for removable media peripherals. You can install up to two half-height peripherals.

3.5-inch Hard Drive Bays

The chassis supports up six drives depending on the power budget. The drives are installed into a removable hard drive bay cage that is located beneath the floppy drive bay. The hard drive bay cage is not externally accessible.

Optional 3.5-inch Hot Swap Drive Bay

The optional hot swap drive bay upgrade supports up to five 3.5-inch SCSI hot-swap hard drives. Five bays are included with the upgrade kit.

The SCSI hot swap drive bay accepts 1-inch peripherals that consume up to 18 Watts of power.

Accessories and Order Codes

For a complete list of spares and accessories, see

<http://www.intel.com/go/serverbuilder>

Table 6. Accessories and Order Codes

Accessory	Order Code
SCSI Hot Swap Drive Bay Upgrade Kit*	AXX2HSDRVUG
ICMB Board Kit*	AXX2ICMBKIT
External SCSI Adapter Cable*	AXXEXTSCSICBL
* Not available for use with all server boards.	

Power Supply

The 450 Watt PFC non-redundant power supply is auto ranging for either 100-127 VAC or 200-240 VAC operation.

Checking the Power Cord

WARNING

Do not attempt to modify or use a supplied AC power cord if it is not the exact type required.

The power supply cord is the main disconnect device to mains (AC power). The socket outlet shall be installed near the equipment and shall be readily accessible.

If a power cord is not compatible with the AC wall outlet in your region, get one that meets the following criteria:

- The cord must be rated for the available AC voltage and have a current rating that is at least 125% of the current rating of the server.
- The connector that plugs into the wall outlet must be a grounding-type male plug designed for use in your region. It must have certification marks showing certification by an agency acceptable in your region.
- The connector that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, type female connector.
- In Europe, the cord must be less than 4.5 meters (14.76 feet) long, and it must be flexible <HAR> (harmonized) or VDE certified cordage to comply with the chassis' safety certifications.

Chassis Security

To help prevent unauthorized entry or use of the server, the chassis includes one chassis intrusion switch at the rear of the chassis. This intrusion switch can be monitored by server management software.

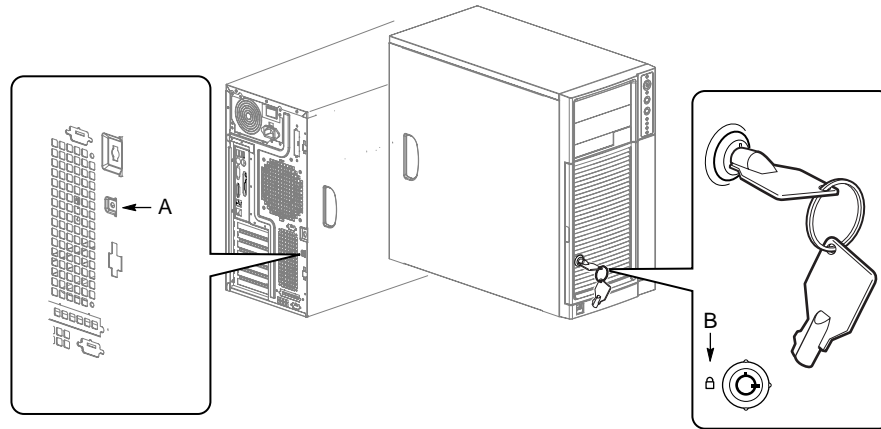
The chassis also includes a front bezel door lock and a padlock loop that the user can install at the rear of the chassis.

Monitoring

One chassis intrusion switch is preinstalled. When the access cover is removed, the switch transmits a signal to the management controller on the server board. Server management software can be programmed to respond to an intrusion in a number of ways. This feature is not supported on all server boards. See your server board documentation for more information.

Mechanical Locks

The front bezel has a two-position lock to prevent access to the hard drives and the interior of the chassis. A padlock loop is included with the chassis and can be installed at the rear of the chassis.



TP00055

A. Location to install padlock loop

B. Front bezel locked position

Figure 2. Mechanical Locks

3 Setting Up the Chassis

This chapter describes how to set the server up for the first time. With the exception of replacing the front panel board (discussed in Chapter 4), it is necessary to remove only the left access cover, not the cover at the right.

Tools and Supplies Needed

- Phillips (cross head) screwdriver (#2 bit)
- Small flathead screwdriver
- Antistatic wrist strap (recommended)

Installation Safety Instructions

Only technically qualified personnel should integrate this assembly.

Follow these guidelines to meet and maintain safety and product regulatory requirements when integrating this chassis subassembly.

Read and adhere to all of these instructions and the instructions supplied with this assembly. If you do not follow these instructions, the UL listing will be void, and the product will most likely be non-compliant with other regional product laws and regulations.

Safety: Before You Remove the Access Covers

Before removing the access cover for any reason, observe these safety guidelines:

- Turn off all peripheral devices connected to the server.
- Turn off the server by pressing the power button on the front of the chassis. Then unplug the AC power cord from the chassis or wall outlet.
- Label and disconnect all peripheral cables and all telecommunication lines connected to I/O connectors or ports on the back of the chassis.
- Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—when handling components.

Warnings and Cautions

These warnings and cautions apply whenever you remove the access cover(s) to access components inside the server. Only a technically qualified person should integrate and configure the server.



WARNINGS

The power button on the front panel DOES NOT turn off the AC power. To remove power from server, you must unplug the AC power cord from the wall outlet or the chassis.

Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the server and disconnect the power cords, telecommunications systems, networks, and modems attached to the server before opening it. Otherwise, personal injury or equipment damage can result.

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



CAUTIONS

ESD can damage disk drives, boards, and other parts. Perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—on your server when handling parts.

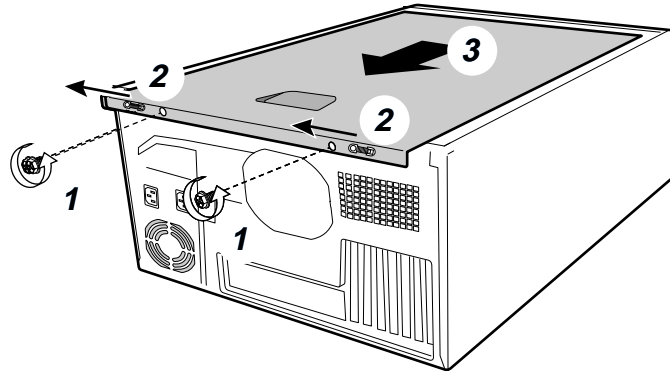
Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. Do not touch the connector contacts. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. If you place the server board on a conductive surface, the battery leads may short out. If they do, this will result in a loss of CMOS data and will drain the battery. Use a conductive foam pad if available. Do not slide board over any surface.

For proper cooling and airflow, always install the access cover before turning on the server. Operating it without the cover in place can damage system parts.

Remove the Access Cover

Observe the safety and ESD precautions at the beginning of this chapter. For ease of installation, before beginning lay the chassis on its right side, with the left access cover facing up.

1. If the shipping screws are installed, remove them (number 1 in the figure below).
2. Slide the thumb latches to the left to the unlocked position (number 2 in the figure).
3. Slide the cover backward a short distance, until it stops (number 3 in the figure).
4. Pull the entire cover upward, straight away from the chassis, to disengage the rows of tabs from the notches in the top and bottom edges of the chassis. Set the cover aside.

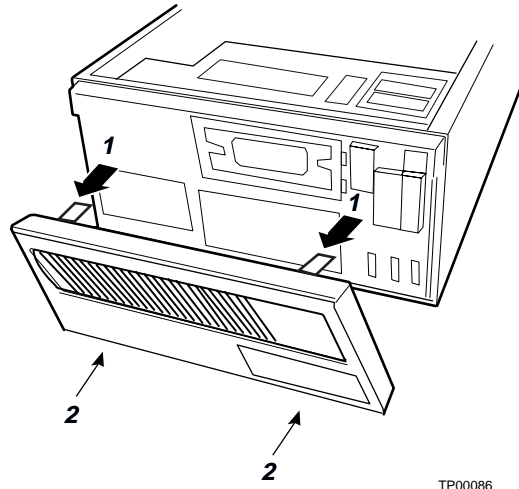


TP00057

Figure 3. Removing the Access Cover

Remove the Front Bezel

1. Pull the left side of the bezel forward to disengage the tabs (facing up in the figure below). See number 1 in the figure.
2. Remove the bezel from the tabs at the right side of the chassis (facing down in the figure below). See number 2 in the figure.



TP00086

Figure 4. Removing the Front Bezel

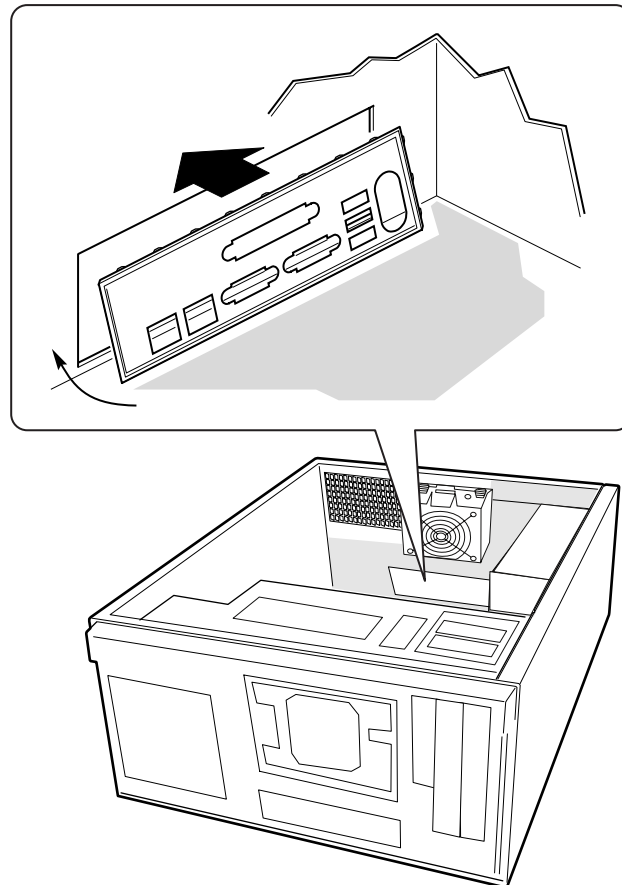
Install the I/O Shield

➤ NOTE

An ATX 2.03-compliant I/O shield should be provided with your server board. The shield is required by Electromagnetic Interference (EMI) regulations. It minimizes EMI and ensures proper cooling of the server.

The shield fits the rectangular opening near the power supply in the back of the chassis. The shield has cutouts that match the external I/O connectors (e.g., keyboard and mouse).

1. If an EMI gasket was provided with your server board, install it now.
2. Install the shield from the inside of the chassis. Orient the shield so that the cutouts align with the corresponding I/O connectors on the server board.
3. Position one edge of the shield so that the dotted groove is outside the chassis wall and the lip of the shield rests on the inner chassis wall.
4. Hold the shield in place, and push it firmly into the opening until it is seated. Make sure the I/O shield snaps into place all the way around.



TP00074

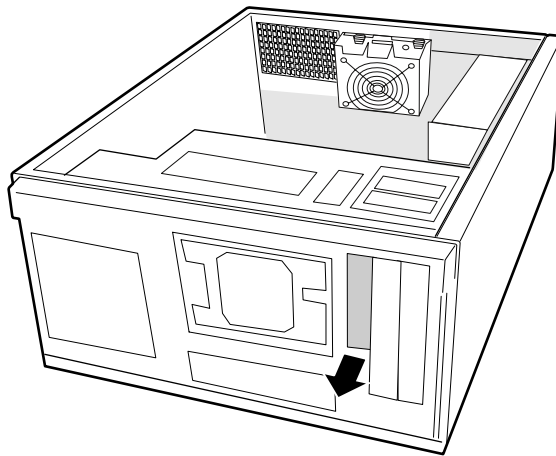
Figure 5. Installing the I/O Shield

Install the Server Board Standoffs and Bumpers

The location of the standoffs and bumpers varies by server board. Read and follow the instructions provided with the server board Quick Start User's Guide for proper standoff and bumper placement.

Install a 3.5-inch Floppy Drive

1. Use the finger cutouts on the EMI shield to grasp the shield and remove it from the chassis.
2. Remove the plastic filler panel from the bezel.

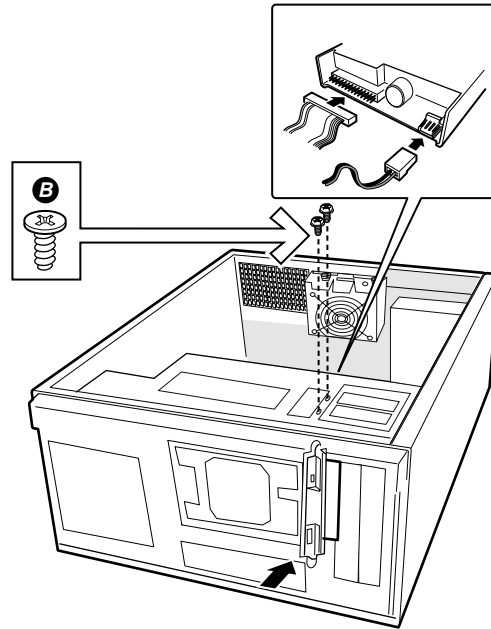


TP00058

Figure 6. Removing the 3.5-inch EMI Shield

3. Remove the 3.5-inch floppy drive from its protective wrapper and place it on an anti-static surface.
4. Record the drive model and serial numbers in your equipment log.
5. Set any jumpers or switches according to the drive manufacturer's instructions.

6. Slide the drive into the chassis. When properly positioned, the holes in the side of the drive align with the threaded holes in the chassis frame.
7. Secure the drive to the side of the chassis with two screws. Note that only two screws are required at the left side of the chassis to secure the device to the chassis. Tighten the screws firmly.
8. Connect the data and power cables to the drive.



TP00060

Figure 7. Installing a Floppy Drive

Peripheral Drives

Device Installation Considerations

The number of devices you can install depends on:

- The number supported by the bus on your server board
- The number of physical drive bays available
- The combination of SCSI and IDE devices
- The amount of power required by other components in your chassis.

IDE Requirements

If no drives are present on an IDE channel, the cable must be removed. If only one drive is installed, it should be connected at the end of the cable.

⇒ NOTE

To disable the IDE controller: If you plan to disable the IDE controller to reuse the interrupt for that controller, you must physically unplug the IDE cable from the board connector if a cable is present. Simply disabling the drive by configuring the SSU option does not make the interrupt available.

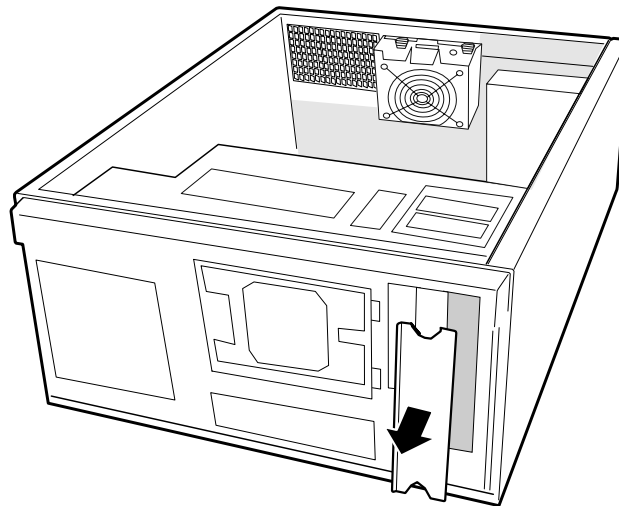
Installing a 5.25-inch Removable Media Device

Two 5.25-inch half-height bays provide space for tape backup, CD-ROM, or other removable media drives.

⇒ NOTE

Save the EMI shields: EMI integrity and cooling are both protected by having drives installed in the bays or EMI shields covering the bays. When you install a drive, save the shield to reinstall in case you should later remove the drive and not reinstall one in the same bay.

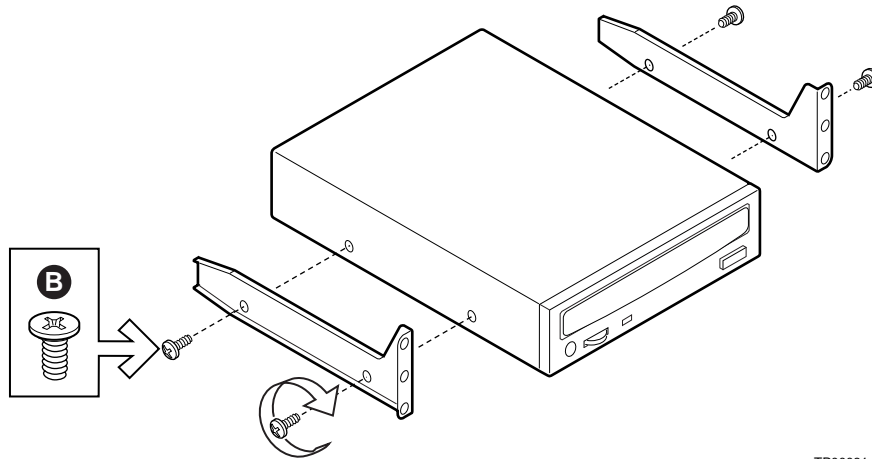
1. Remove the EMI shield by using the finger-slots to grasp it and pull it straight out. Save the shield in case you later remove the peripheral.
2. Remove the plastic filler panel from the bezel.



TP00061

Figure 8. Removing EMI Shields

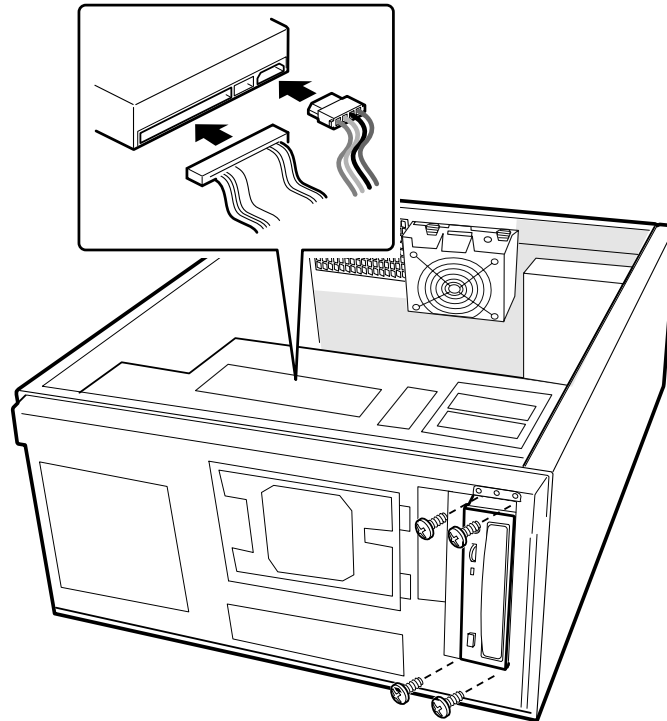
3. Remove the drive from its protective wrapper and place it on an antistatic surface.
4. Record the drive model and serial numbers in your equipment log.
5. Set any jumpers or switches on the drive according to the drive manufacturer's instructions.
6. Using four screws of the appropriate size and length, attach two slide rails to the drive. Note that the left and right rails mirror each other. The rails must be installed with the metal flange with the screw holes to the front of the drive and the flap with the screw holes must point away from the drive.



TP00081

Figure 9. Slide Rails

7. Position the drive so the slide rails engage in the chassis bay guide rails. Push the drive into the bay until the slide rails are flush with the chassis.
8. Use two screws for each slide rail to attach the device at the front of the chassis.
9. Connect the data and power cables to the drive. The connectors are keyed and can be inserted in only one way.

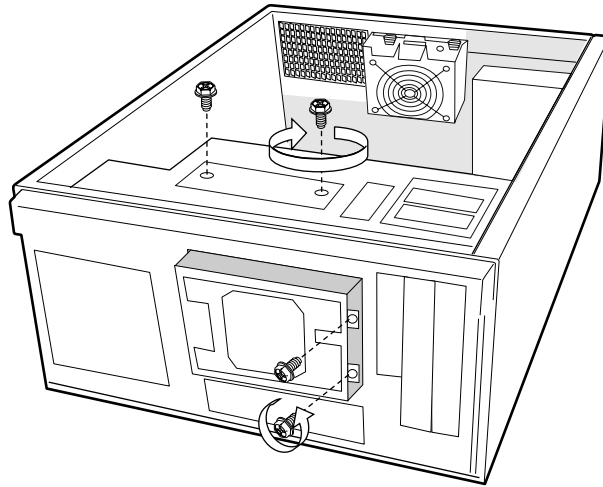


TP00065

Figure 10. Installing a Removable Media Device

Install the Server Board

1. Remove and save the four screws that secure the drive cage to the chassis. Two screws are at the front of the chassis and two are at the side of it.
2. Slide the drive cage out of the chassis. You may need to push the cage out from the inside of the chassis.



TP00062

Figure 11. Removing a Drive Cage

3. For additional information, read and follow the instructions provided with the server board Quick Start User's Guide. These instructions will guide you through preparing the board, processors, and memory for installation.
4. Tilt the board into the chassis I/O connector end first. Make sure the I/O connectors protrude through the I/O shield at the back of the chassis.
5. Attach the board to the two snap stand-offs at the front of the chassis.
6. Insert screws loosely through the server board mounting holes and into the threaded standoffs.
7. Make sure the board is properly seated and then tighten the screws firmly, starting with the screws at the center of the board.

Installing 3.5-inch Hard Drive

Six 3.5-inch half-height bays provide space for hard drives. For proper cooling, always install drives into the four center bays first, leaving air flow in place through the top and bottom bays of the hard drive bay cage.

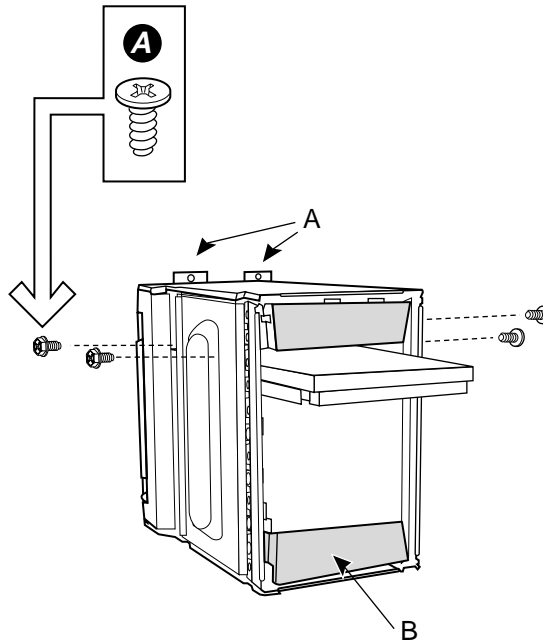
⇒ NOTE

The drive bay cage can only be fully populated with six hard drives if the power budget has the capacity for it, such as when only a single processor is used. Before installing more than four hard drives, calculate the power used by each installed device and compare it to the allowed power budget.

When installing more than four drives a Y-cable may be needed for the power connectors.

1. If the hard drive bay cage is not already removed, remove and save the four screws that secure the drive cage to the chassis. Two screws are at the front of the chassis and two are at the side of the chassis.
2. Slide the drive cage out of the chassis. You may need to push the cage out from the inside of the chassis. Set the cage down so that the arrow on the front of it points up.
3. Remove the drive from its protective wrapper and place it on an antistatic surface.
4. Record the drive model and serial numbers in your equipment log.
5. Set any jumpers or switches on the drive according to the drive manufacturer's instructions.

6. Slide the drive into the back of the drive cage along the rails in the cage. Install the drive with the component side facing down. The drive power and data connectors must face out the open side of the cage.
7. Push the drive in until the drive connectors are flush with the rear of the cage.
8. Line up the screws holes in the sides of the cage with the screw holes in the drive.
9. Use four screws (screw A), attach the drive to the cage.

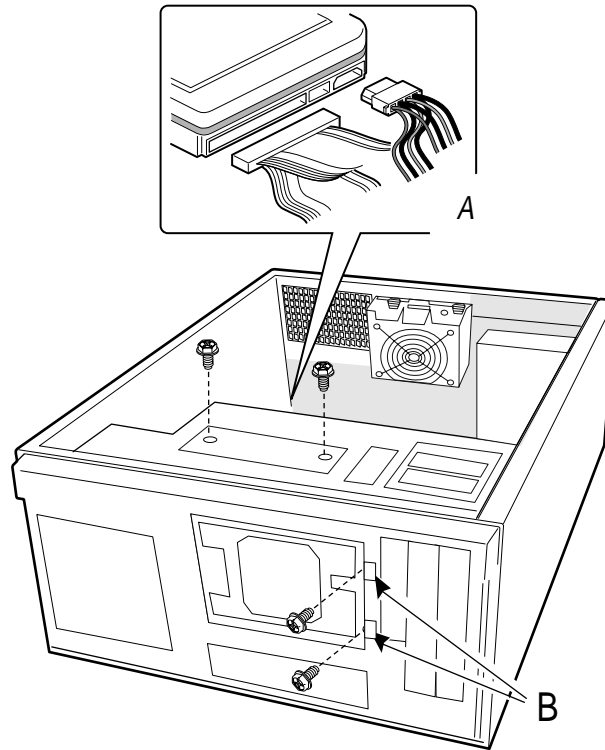


TP00063

- A. Screw tabs. Point up when installing drives.
- B. Leave top and bottom empty for proper airflow.

Figure 12. Attaching a Hard Drive to a Cage

10. After all drives are installed into the cage, slide the cage into the chassis, making sure the arrow and the screw tabs point toward the top of the chassis.
11. Insert and tighten the four screws removed in Step 1.
12. Attach data and power cables to the drive(s).



TP00066

- A. Data and power cables
- B. Screw tabs. Point toward top of chassis.

Figure 13. Installing the Hard Drive Bay Cage

Connect Cables to the Server Board

See your server board product guide or Quick Start User's Guide for connector locations.

1. Connect the power cables to the server board.
 - The large plug labeled P1 plugs into the main power connector on the server board
 - The plug labeled P2 plugs into the +12V CPU Power connector on the server board
2. Connect the front panel cable to the server board.
3. Connect the USB cable to the server board.
4. Connect the fan cables to the server board.
5. Connect the IDE cable(s) to the server board. Cable provided with server board.
6. Connect the floppy cable to the server board. Cable provided with server board.
7. Connect the chassis intrusion cable to the server board.
8. If desired, connect the serial port cable to the server board and mount it on the rear of the chassis.

⇒ NOTE

Use caution in routing cables to ensure they do not obstruct the airflow from the fans.

Installing an Add-in Board

You may want to install an operating system before installing any add-in boards. If so, skip this step and return to it when you are ready.



CAUTIONS

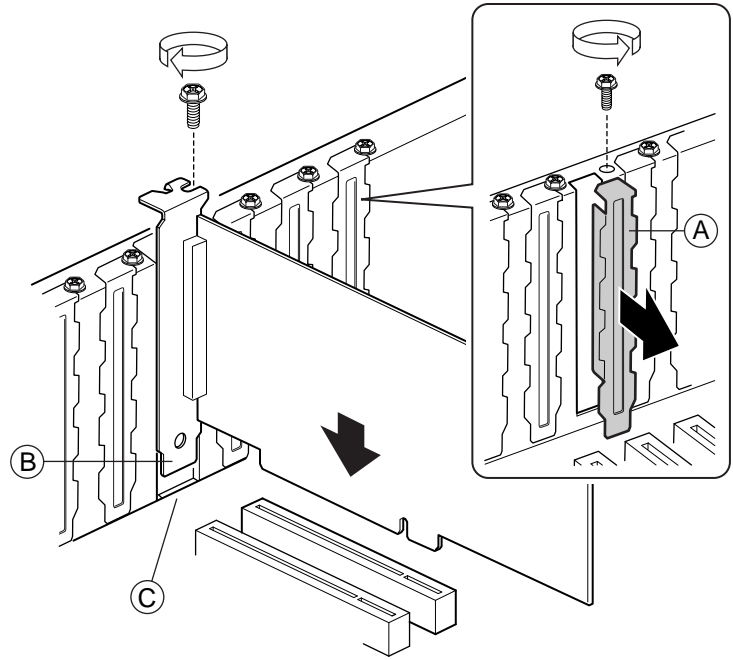
Do not overload the server board by installing add-in boards that draw excessive current.

Add-in boards can be extremely sensitive to ESD and always require careful handling. After removing the board from its protective wrapper or from the server board, place it component side up on a grounded, static free surface or conductive foam pad if available. Do not slide the board over any surface.

1. Remove the screw for the expansion slot.
2. Remove and save the expansion slot cover in case you later remove the add-in card.
3. Remove the add-in board from its protective wrapper. Be careful not to touch the components or gold edge connectors. Place board on an antistatic surface.
4. Record the type and serial number of the add-in board in your equipment log.
5. Set jumpers or switches according to the manufacturer's instructions.
6. Hold board by its top edge or upper corners. Firmly press it into an expansion slot on the server board. The end of a full-length expansion card must slide into the plastic card guide slot at the front of the chassis and the tapered foot on the expansion card bracket must fit into the slot in the retention slot frame.
7. Align the rounded notch in the retaining bracket of the expansion card with the threaded hole in the frame. The bracket fits the space that was occupied by the slot cover.
8. Use the screw removed earlier. Insert it into the threaded hole, and tighten it firmly. Attach cables if necessary.

⇒ NOTE

When removing a full-length add-in card, you must pull back on the latch on the plastic card guide at the front of the chassis to release the card from the card guide.



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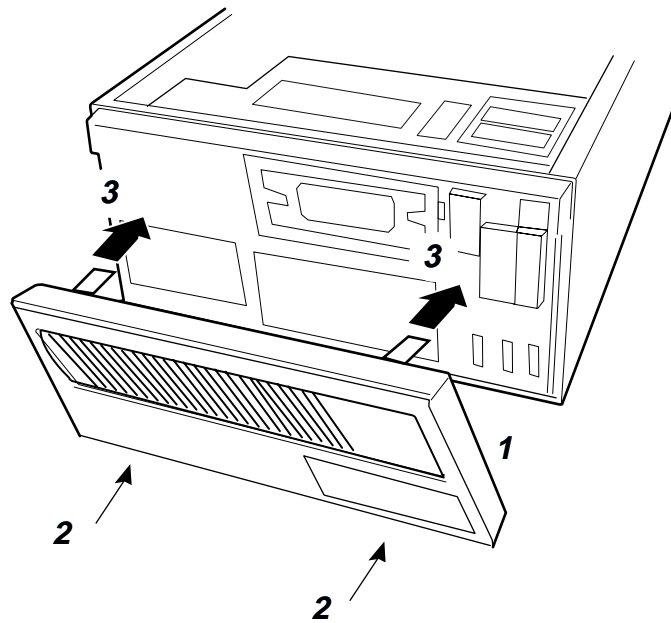
- A. Snap-in slot cover
- B. Tapered foot
- C. Slot

Figure 14. Installing an Add-in Board

Install the Front Bezel

1. Angle the bezel toward the chassis as shown by number 1 in the figure below.
2. Insert the latches on the right side of the bezel (facing down in the figure below) into the corresponding slots in the chassis. See number 2 in the figure.
3. Rotate the left side of the bezel (facing up in the figure below) over the side of the chassis to engage the two tabs. See number 3 in the figure.

The installation of the chassis access cover will prevent the bezel from being removed.

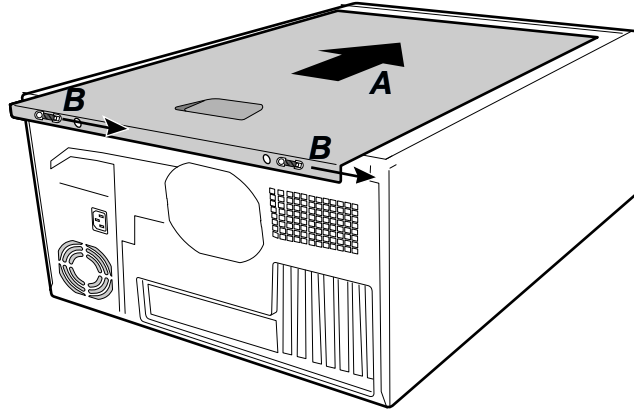


TP00056

Figure 15. Installing the Front Bezel

Install the Access Cover

1. Place the cover so the tabs on the cover fit into the slots on the server. The cover should be flush against the chassis.
2. Slide the cover forward until it stops (letter A in the figure below).
3. Slide the two thumb latches to the right to the “lock” position (letter B in figure). For additional security, you can also replace the shipping screws if desired.



TP00067

Figure 16. Installing the Access Cover

4 Maintaining Your Server

This chapter describes how to replace components in your server after it has been set up.

Tools and Supplies Needed

- Phillips (cross head) screwdriver (#2 bit)
- Small flathead screwdriver
- Antistatic wrist strap (recommended)
- Needle-nosed pliers

Safety: Before You Remove the Access Cover(s)

Before removing the access cover for any reason, observe these safety guidelines:

1. Turn off all peripheral devices connected to the server.
2. Turn off the server by pressing the power button on the front of the chassis.
3. Unplug the AC power cord from the chassis or wall outlet.
4. Label and disconnect all peripheral cables and all telecommunication lines connected to I/O connectors or ports on the back of the chassis.
5. Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—when handling components.

Warnings and Cautions

These warnings and cautions apply whenever you remove the access cover(s) to access components inside the server. Only a technically qualified person should integrate and configure the server.



WARNINGS

The power button on the front panel DOES NOT turn off the AC power. To remove power from server, you must unplug the AC power cord from the wall outlet or the chassis.

Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the server and disconnect the power cords, telecommunications systems, networks, and modems attached to the server before opening it. Otherwise, personal injury or equipment damage can result.

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



CAUTIONS

ESD can damage disk drives, boards, and other parts. Perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground—any unpainted metal surface—on your server when handling parts.

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. Do not touch the connector contacts. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. If you place the server board on a conductive surface, the battery leads may short out. If they do, this will result in a loss of CMOS data and will drain the battery. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

For proper cooling and airflow, always install the access cover before turning on the server. Operating the server without the cover in place can damage system parts.

Replacing Fans

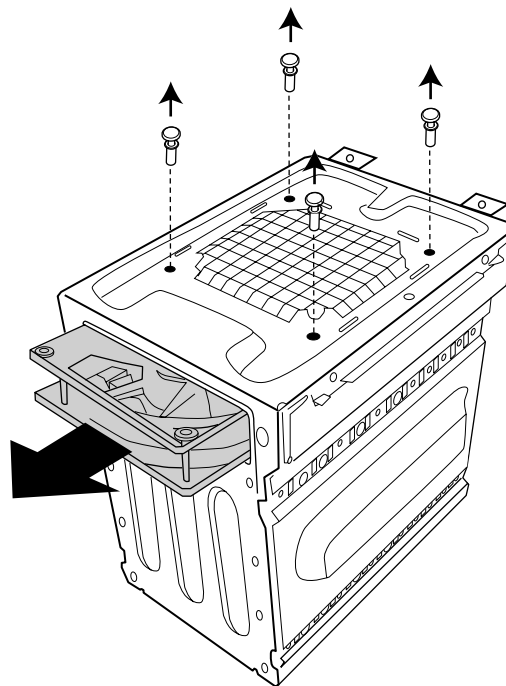
The chassis contains two replaceable system fans. The power supply fan(s) are not replaceable. Your replacement fan should be the same size and type as the fan you are removing.

Replacing a Front System Fan

Standard Hard Drive Bay Cage

The front system fan is located inside the hard drive bay cage. To replace it, the cage must be removed. It is not necessary to remove the hard drives from the cage.

1. Remove the left access cover.
2. Remove the bezel.
3. Disconnect the fan cable from the server board.
4. Disconnect the cables from all hard drives.
5. Remove the two screws at the front of the hard drive bay cage and the two screws at the side of the cage.
6. Slide the cage from the chassis. It may be necessary to push the cage out from the back.
7. Use a flat-head screwdriver to pry up the four nylon rivets that hold the fan in place.
8. Slide the fan out through the fan opening.



TP00078

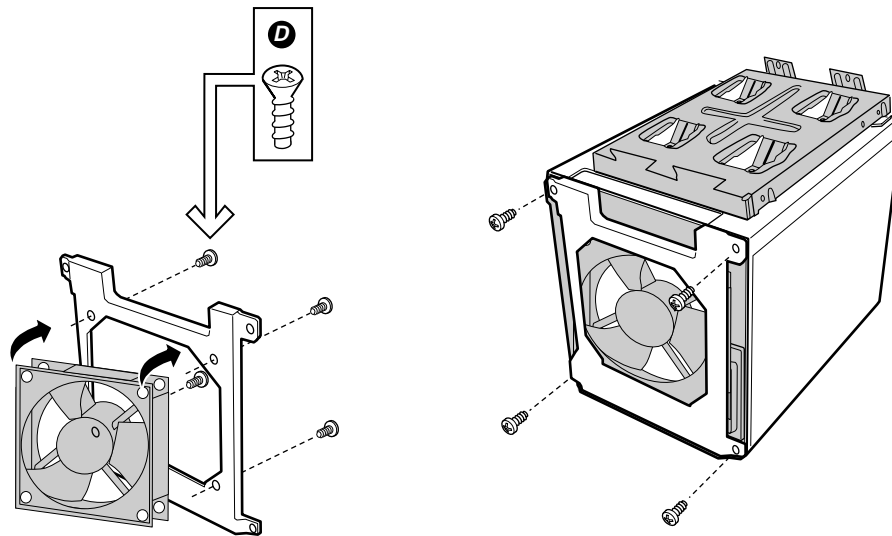
Figure 17. Replacing the Front System Fan in a Standard Drive Cage

9. Slide the new fan in through the fan opening. Make sure the airflow is towards the server board. This means the label should face the server board.
10. Replace the nylon rivets to attach the fan to the hard drive bay cage.
11. Replace the hard drive bay cage in the chassis. Make sure the fan opening faces the bottom of the chassis.
12. Connect the fan cable to the server board and reconnect the hard drives.
13. Replace the bezel.
14. Replace the access cover.

Hot-Swap Drive Bay

When the hot-swap drive bay is installed, the front system fan is located on the hot-swap drive bay. To replace it, the hard drive bay cage must be removed. It is not necessary to remove the hard drives from the bay.

1. Remove the left access cover.
2. Remove the bezel.
3. Disconnect the fan cable from the server board.
4. Disconnect the SCSI cable and power cable from the SCSI hot-swap drive bay.
5. Remove the hot-swap drive bay by unscrewing the four screws at the front of the chassis and the two at the side of the chassis.
6. Slide the bay from the chassis. It may be necessary to push the bay out from the back.
7. Remove the four screws that hold the plastic fan bracket to the drive bay.
8. Remove the four screws that hold the fan to the bracket.



TP00059

Figure 18. Replacing the Front System Fan in a Hot-swap Drive Bay

9. Use the four screws (fastener D) removed in step 8 to attach the new fan to the bracket. Make sure the airflow is towards the server board. When installed back into the chassis, the label should face the server board.
10. Reattach the fan bracket, with the new fan attached, to the drive bay.
11. Replace the hard drive bay in the chassis. When installed correctly, the latches for the hot-swap drives will open from right to left, with the finger latches at the right.
12. Connect the fan cable to the server board and reconnect the hard drives.
13. Replace the bezel.
14. Replace the access cover.

Replacing a Rear System Fan

1. Remove the left access cover.
2. Disconnect the fan cable from the server board.
3. Remove the fan from the bracket. No tools are necessary; the fan snaps in and out of the bracket.
4. Remove the finger guard from the fan by using a flathead screwdriver to pry the four nylon rivets from the corners.
5. Attach the finger guard with the rivets to the side of the new fan that does not have the label on it.
6. Place the new fan into the bracket. Make sure the airflow is out of the back of the chassis. This means the label should face the back of the chassis and the finger guard should face the server board.
7. Connect the fan cable to the server board.
8. Replace the access cover.

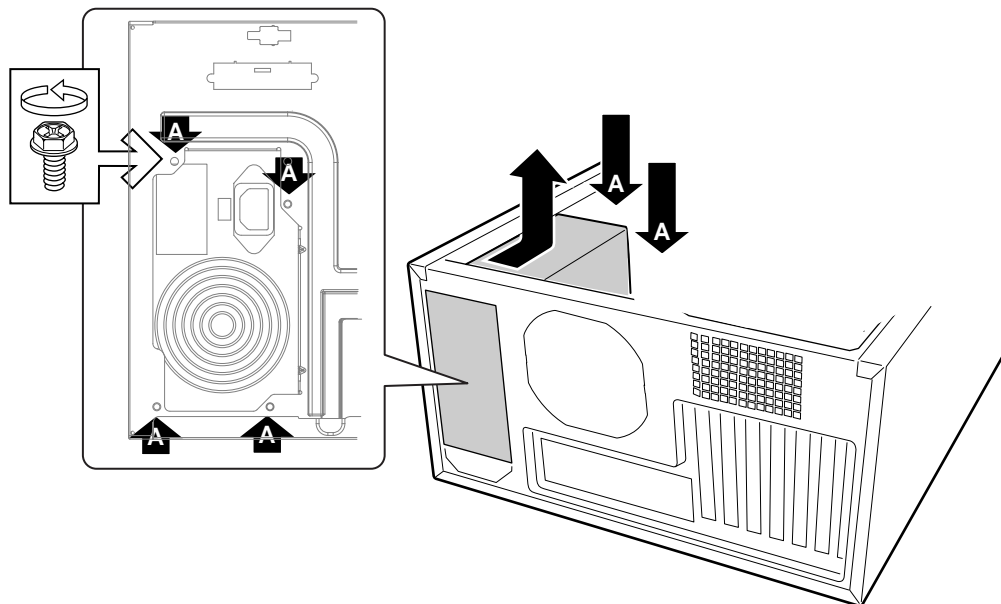
Replacing the Power Supply

WARNINGS

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

To replace the power supply:

1. Disconnect the A/C power from the power supply.
2. Remove the left access cover.
3. Disconnect all of the power cables inside the chassis.
4. Remove and save the four screws that hold the power supply to the back of the chassis.
5. Remove the two screws holding the front of the power supply to the bottom inside of the chassis.
6. Remove the power supply from the chassis.
7. Insert the replacement power supply into the chassis.
8. Insert and tighten the screws that hold the power supply the chassis (four at the back of the chassis, two inside the chassis).
9. Connect the power cables to the server board and peripherals.
10. Replace the access cover.
11. Connect the A/C power to the power supply.



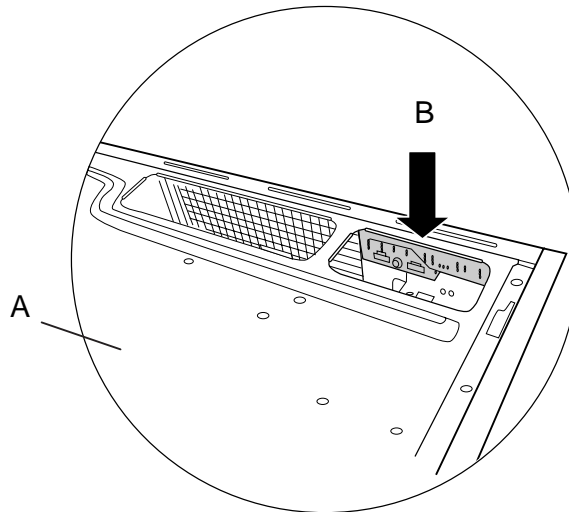
TP00068

A. Screw locations

Figure 19. Replacing the AC Power Supply

Replacing the Front Panel Board

1. Remove the left access cover.
2. Remove the bezel.
3. Remove the two screws at the rear of the chassis that hold the right access cover in place.
4. Remove the right access cover. A rectangular opening at the right side of the chassis provides access to the front panel board.

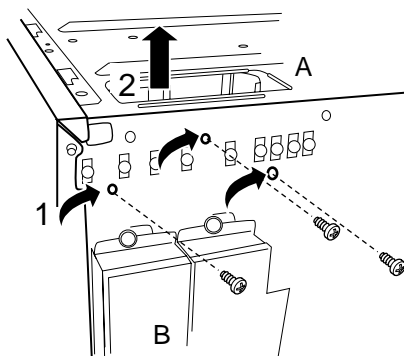


TP00069

- A. Right side of chassis, access cover removed
- B. Access to Front Panel Board

Figure 20. Front Panel Board Access

5. Disconnect the front panel cable from the front panel board.
6. Remove and save the three screws holding the front panel board to the chassis. See number 1 in the figure below
7. Remove the front panel board through the access hole. See number 2 in the figure below

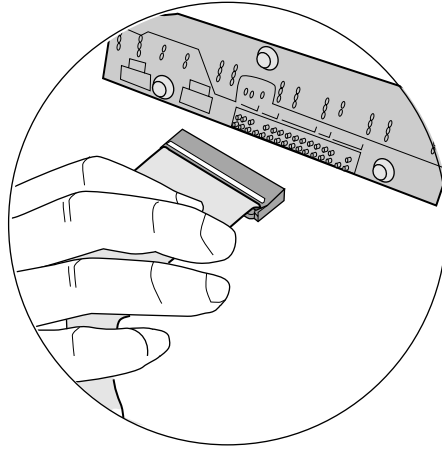


TP00064

- A. Right side of chassis
- B. Front of chassis

Figure 21. Removing the Front Panel Board

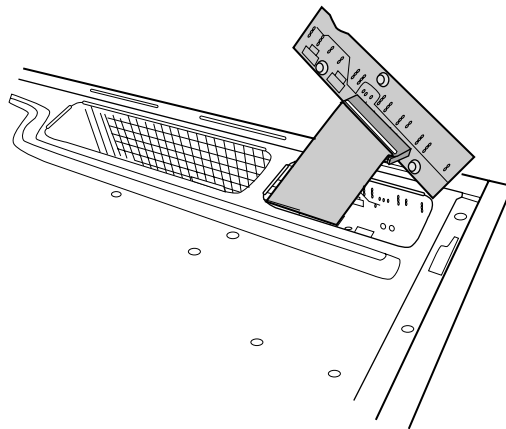
- Slide the end of front panel board cable through the front panel opening and attach it to the new front panel board. Attach the cable before installing the new front panel board into the chassis to ensure the cable pins line up correctly.



TP00082

Figure 22. Attaching the Front Panel Cable

- Place the new front panel board in the chassis.
- Insert and tighten the three screws removed earlier.



TP00083

Figure 23. Inserting the Front Panel Board

- Replace the right access cover.
- Replace the bezel.
- Replace the left access cover.

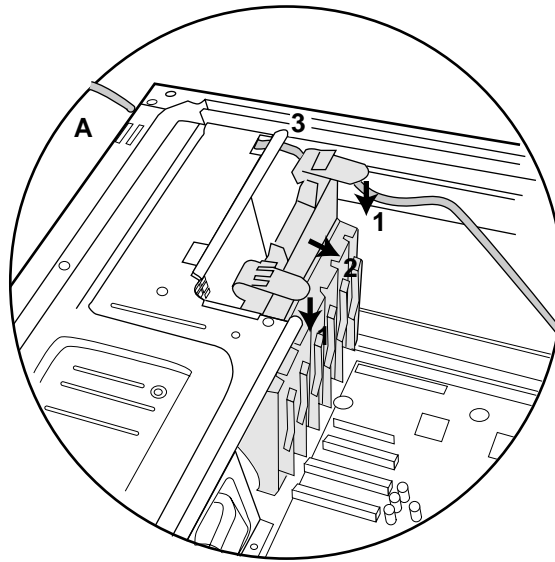
Replacing the USB Cable

1. Remove the left access cover.
2. Remove the bezel.
3. Disconnect the existing USB cable from the server board.
4. Disconnect the bracket that attaches the USB cable to the front of the chassis.
5. Remove all add-in boards.

⇒ NOTE

When removing a full-length add-in card, you must pull back on the latch on the plastic card guide at the front of the chassis to release the card from the card guide.

6. Push down on the latches for the add-in board retention bracket at the front of the chassis to disengage it.
7. Tip the retention bracket slightly forward to create a gap between the top of the device and the chassis frame.
8. Slide the USB cable out through the hole at the front of the chassis, indicated by the letter A in the figure below.
9. Insert the replacement USB cable through the hole at the front of the chassis.
10. Route the cable next to over the add-in board retention bracket as shown in the figure below.
11. Attach the USB cable to the server board.



TP00079

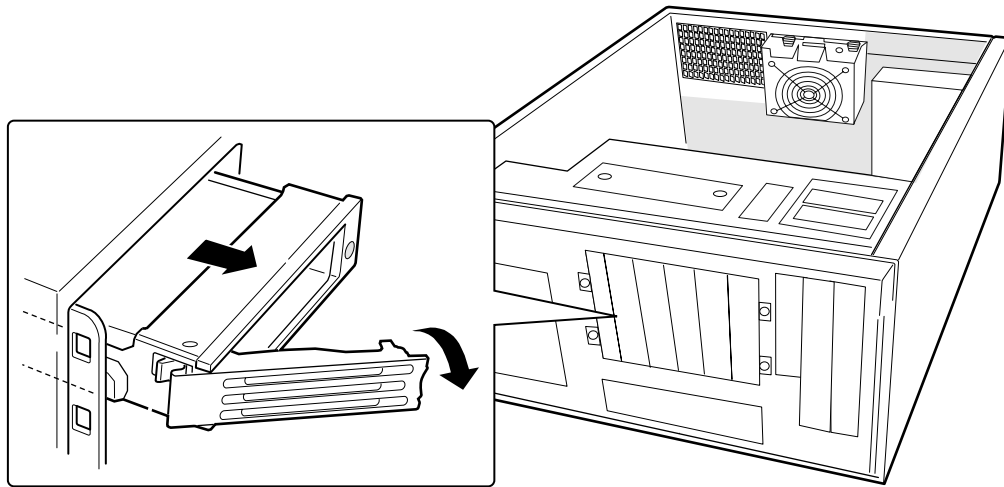
Figure 24. Installing the USB Cable

12. Install the bracket over the USB port at the front of the chassis.
13. Reinstall all add-in cards.
14. Replace the bezel.
15. Replace the access cover.

Replacing the SCSI Backplane and SAF-TE Card

The following instructions apply only if you have installed the optional Hot Swap Drive Bay upgrade kit.

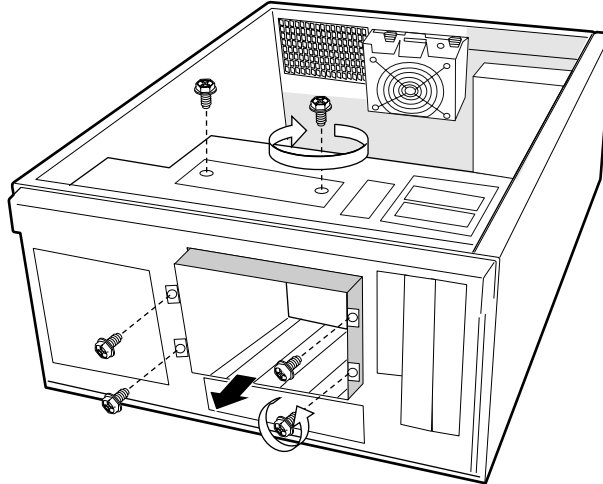
1. Open the access cover.
2. Disconnect the SCSI cable and power cable from the drive bay.
3. Remove the hot swap drives from the drive bay. Set them aside on an anti-static device.



TP00070

Figure 25. Removing the Hot Swap Drive Bay

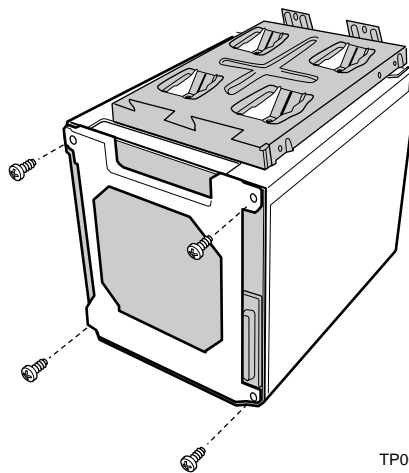
4. Remove the hard drive bay cage by unscrewing the four screws at the front of the chassis and the two (four?) at the side of the chassis.
5. Slide the bay from the chassis. It may be necessary to push the bay out from the back.



TP00071

Figure 26. Removing the Hot Swap Drive Bay

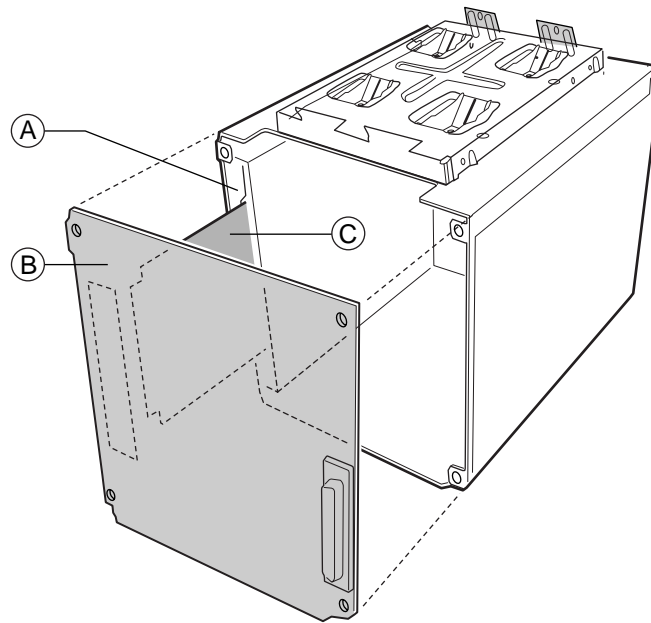
6. Remove and save the four screws that hold the backplane with the attached fan to the bay.



TP00073

Figure 27. Removing the SCSI Backplane

7. Carefully pull the backplane straight out from the bay. The SAF-TE card is connected to the backplane and may be damaged if you do not pull it straight out.

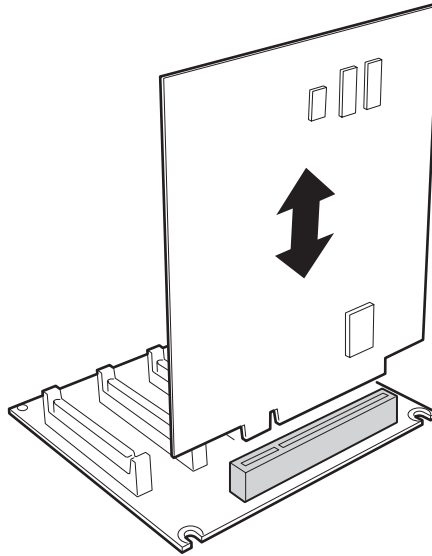


TP00084

- A. Notch for SAF-TE card
- B. SCSI backplane
- C. SAF-TE card

Figure 28. Replacing the SCSI Backplane

8. If you are replacing the SCSI backplane, do the following:
 - a. Remove the SAF-TE card from the old SCSI backplane.
 - b. Plug the SAF-TE card into the new SCSI backplane.
9. If you are replacing the SAFE-TE card, do the following:
 - a. Remove the old SAF-TE card from the SCSI backplane.
 - b. Plug the new SAF-TE card into the SCSI backplane.



OM11959

Figure 29. SAF-TE Card and SCSI Backplane

10. Carefully slide the SAF-TE card/SCSI backplane assembly into place on the hot swap bay. The SAF-TE card slides through two notches on the bay.
11. Place the bracket on the backplane.
12. Insert and tighten the four screws that hold the backplane and fan in place.
13. Slide the bay back into the chassis.
14. Reconnect the SCSI, fan cable, and power cables.
15. Insert and tighten the six screws that hold the bay in the chassis.
16. Replace the bezel.
17. Replace the access cover.

5 Technical Reference

Power Supply Specifications

450Watt Single Power Supply Input Voltages

450 Watt Power Supply

- 100-127 V~ at 50/60 Hz; 8.5 A max.
- 200-240 V~ at 50/60 Hz; 4.3 A max.

450W Single Power Supply Output Voltages

450 Watt Power Supply

The table below lists the total wattage available from the power subsystem for each voltage. If you configure your system heavily, ensure that your loads do not exceed the combined total wattage of 450 Watts. For information about calculating the power usage for your configuration, see page 73.

Table 7. Power Supply System Output Capability

Voltage	Maximum Current
+3.3 V	24 A
+5.0 V	20 A
+5 V Standby	2 A
+12.0 V1 (P2)	18 A
+12.0 V2	18 A
-12.0 V	0.5 A



CAUTION

Do not exceed a combined power output of 179 Watts for the +5 V and +3.3 V outputs. Exceeding a combined 179 Watts will overload the power subsystem and may cause the power supplies to overheat and malfunction.

The expansion slots on the server board are rated for no more than 25 Watts for any one slot. The average current usage per slot should not exceed 13 Watts.

System Environmental Specifications

Table 8. Environmental Specifications

Temperature Non-operating Operating	–40 ° to 70 °C. 5 ° to 35 °C; derated 0.5 °C for every 1000 ft (305 m) to a maximum of 10,000 ft.
Humidity Non-operating	95% relative humidity (non-condensing) at 30 °C.
Shock Operating Packaged	2.0 g, 11 msec, 1/2 sine Operational after an 18" free fall.
Acoustic noise	50 dBA in a typical office ambient temperature (65-75 °F). Your selection of peripherals may change the noise level.
Electrostatic discharge (ESD)	Tested to 15 kilovolts (kV); no component damage.

A Equipment Log and Worksheets

Equipment Log

Use the blank equipment log provided here to record information about your server. You will need some of this information when you run the SSU.

Item	Manufacturer Name and Model Number	Serial Number	Date Installed
Chassis			
Server Board			
Processor Speed and Cache			
Memory			
Video Display			
Keyboard			
Mouse			
Diskette Drive A			
CD-ROM Drive			
Additional 5.25" Peripheral			
Hard Disk Drive			
Hard Disk Drive			
Hard Disk Drive			
Hard Disk Drive			
Hard Disk Drive			
Hard Disk Drive			
Hard Disk Drive			
Hard Disk Drive			

continued

Equipment Log (continued)

Item	Manufacturer Name and Model Number	Serial Number	Date Installed

Current Usage

Calculating Power Usage

The total combined wattage for your configuration **must be less than the wattage rating for your power supply**. Use the two worksheets in this section to calculate the total used by your configuration. For current and voltage requirements of add-in boards and peripherals, see your vendor documents.

Worksheet, Calculating DC Power Usage

Table 9. Power Usage Worksheet 1

Device	Current (maximum) at voltage level:					
	+3.3 V	+5 V	-5 V	+12 V	-12 V	5 V Standby
Baseboard, Front Panel Board and Fans						
Processor(s)						
Memory						
3.5-inch Diskette Drive						
CD-ROM Drive						
Second 5.25-inch Device						
Third 5.25-inch Device						
1st Hard Drive						
2nd Hard Drive						
3rd Hard Drive						
4th Hard Drive						
5th Hard Drive						
6th Hard Drive						
Expansion Board 1						
Expansion Board 2						
Expansion Board 3						
Expansion Board 4						
Expansion Board 5						
Expansion Board 6						
Expansion Board 7						
Total Current						

Worksheet, Total Combined Power Used by the Server

1. From the previous worksheet, enter the total current for each column.
2. Multiply the voltage by the total current to get the total wattage for each voltage level.
3. Add the total wattage for each voltage level to arrive at the total combined power usage for the power subsystem.

Table 10. Power Usage Worksheet 2

Voltage level and total current (V X A = W)	Total Watts for each voltage level
(+3.3 V) X (_____ A)	_____ W
(+5 V) X (_____ A)	_____ W
(-5 V) X (_____ A)	_____ W
(+12 V) X (_____ A)	_____ W
(-12 V) X (_____ A)	_____ W
(5 V standby) X (_____ A)	_____ W
Total Combined Wattage	_____ W



CAUTION

Do not exceed a combined power output of 120 Watts for the +5 V and +3.3 V outputs. Exceeding a combined 120 Watts will overload the power subsystem and may cause the power supplies to overheat and malfunction.

B Warranty

Limited Warranty for Intel® Chassis Subassembly Products

Intel warrants that the Products (defined herein as the Intel® chassis subassembly and all of its various components and software delivered with or as part of the Products) to be delivered hereunder, if properly used and installed, will be free from defects in material and workmanship and will substantially conform to Intel's publicly available specifications for a period of three (3) years after the date the Product was purchased from an Intel authorized distributor. Software of any kind delivered with or as part of products is expressly provided "as is" unless specifically provided for otherwise in any software license accompanying the software.

If any Product furnished by Intel 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 Product by means of hardware and/or software; OR
- REPLACE the Product with another Product; OR
- REFUND the then-current value of the Product if Intel is unable to repair or replace the Product.

If such Product is defective, transportation charges for the return of Product to buyer within the USA will be paid by Intel. For all other locations, the warranty excludes all costs of shipping, customs clearance, and other related charges. Intel will have a reasonable time to make repairs or to replace Product or to refund the then-current value of the Product.

In no event will Intel be liable for any other costs associated with the replacement or repair of Product, including labor, installation or other costs incurred by buyer.

This Limited Warranty, and any implied warranties that may exist under state law, apply only to the original purchaser of the Product.

Extent of Limited Warranty

Intel does not warrant that Products to be delivered hereunder, whether delivered stand-alone or integrated with other Products, including without limitation semiconductor components, will be free from design defects or errors known as "errata". Current characterized errata are available upon request.

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.

Warranty Limitations and Exclusions

These warranties replace all other warranties, expressed or implied including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Intel makes no expressed warranties beyond those stated here. Intel disclaims all other warranties, expressed or implied including, without limitation, implied warranties of merchantability and fitness for a particular purpose. Some jurisdictions do not allow the exclusion of implied warranties, so this limitation may not apply.

All expressed and implied warranties are limited in duration to the limited warranty period. No warranties apply after that period. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Limitations of Liability

Intel's responsibility under this, or any other warranty, implied or expressed, is limited to repair, replacement or refund, as set forth above. These remedies are the sole and exclusive remedies for any breach of warranty. Intel is not responsible for direct, special, incidental, or consequential damages resulting from any breach of warranty under another legal theory including, but not limited to, lost profits, downtime, goodwill, damage to or replacement of equipment and property, and any costs of recovering, reprogramming, or reproducing any program or data stored in or used with a system containing this product. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This limited warranty gives you specific legal rights, and you may also have other rights that vary from jurisdiction to jurisdiction.

Any and all disputes arising under or related to this Limited Warranty shall be adjudicated in the following forums and governed by the following laws: for the United States of America, Canada, North America and South America, the forum shall be Santa Clara, California, USA and the applicable law shall be that of the State of California, USA; for the Asia Pacific region, the forum shall be Singapore and the applicable law shall be that of Singapore; for Europe and the rest of the world, the forum shall be London and the applicable law shall be that of the United Kingdom.

In the event of any conflict between the English language version and any other translated version(s) of this Limited Warranty, the English language version shall control.

How to Obtain Warranty Service

To obtain warranty service for this Product, you may contact Intel or your authorized distributor.

North America—Call Intel at 1-800-628-8686 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) model name and serial number of the Product; (3) an explanation of the problem. The customer service representative may need additional information from you depending on the nature of the problem.

In Europe, Asia, or South America—Contact your original authorized distributor for warranty service.

Any replacement Product is warranted under this written warranty and is subject to the same limitations and exclusions for the remainder of the original warranty period.

Telephone Support

All calls are billed US \$25.00 per incident, levied in local currency at the applicable credit card exchange rate plus applicable taxes.

In U.S. and Canada		1-800-404-2284	
In Europe			
UK	0870 6072439	Finland	9 693 79297
France	01 41 918529	Denmark	38 487077
Germany	069 9509 6099	Norway	23 1620 50
Italy	02 696 33276	Sweden	08 445 1251
Spain	91 377 8166	Holland	020 487 4562
In Asia-Pacific region			
Australia	1800 649931	Indonesian	001-803 65 7249
Hong Kong	852 2 844 4456	Malaysia	1-800 80 1390
Korea	822 767 2595	New Zealand	0800 444 365
PRC	800 820 1100	Pakistan	632 6368415
Singapore	65 831-1311	Philippines	1-800 1 651 0117
Taiwan	2 2718 9915	Thailand	001-800 6310003
India	0006517-2-830 3634	Vietnam	632 6368416
In Japan			
0120-868686 (Domestic)		81-298-47-0800 (outside country)	
In Latin America			
Brazil	0021-0811-408-5540	Ecuador	999-119, 800-628-8686 (via AT&T)
Mexico	001-800-628-8686	Guatemala	99-99-190, 800-628-8686 (via AT&T)
Colombia	980-9-122-118	Venezuela	800-11-120, 800-628-8686 (via AT&T)
Costa Rica	0-800-011-0395	Argentina	001-800-222-1001, 800-628-8686 (via AT&T)
Panama	001-800-628-8686	Paraguay	008-11, 800-628-8686 (via AT&T)
Chile	800-532-992	Peru	0-800-50000, 800-628-8686 (via AT&T)
Miami	1-800-621-8423	Uruguay	000-410, 800-628-8686 (via AT&T)

Returning a Defective Product

Before returning any product, call your authorized dealer/distribution authority. If the customer support group verifies that your product is defective, you will receive a Return Material Authorization (RMA) number to place on the outer package of the product. Intel can not accept any product without an RMA number on the package.