

Intel[®] Carrier Grade Server TIGW1U

Configuration Guide System / Spares / Accessories List

April 2008
Rev 2.1

Reference guide to assist customers and the field in ordering the servers,
accessories and spares

~Subject to Change Without Notice~

May 2008

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Revision	Date	Comments
0.8	11/10/2007	Initial preliminary draft
0.9	4/10/2007	Updated preliminary draft
0.91	4/11/2007	Minor corrections
1.0	5/17/2007	SRA version.
2.0	4/18/2008	Added info for Quad-Core Intel® Xeon® processor L5410 support, changed format, removed Syscon, added Z-U130 and other additional parts.
2.1	5/01/2008	Added TMWFANSET02W and TMLREK01 parts.

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I. Introduction

The Intel® Carrier Grade Server TIGW1U is a NEBS-3 and ETSI compliant carrier-grade rack server, providing industry-leading CPU performance and power efficiency in a compact package. It features the Quad-Core Intel® Xeon® processor L5410, and the 64-bit Dual-Core Intel® Xeon® processor LV 5148 and LV 5128, providing improved performance-per-watt over previous-generation rack mount servers.

This high-performing server is an excellent choice for the demanding environment and limited space of the central office and highly available data centers. It is also ideal for Services over IP (SoIP) for next-generation telecom solutions and communications networks. Offered as a standard building block, the Intel Carrier Grade Server TIGW1U enables OEMs and TEMs to create their own value-added solutions for a variety of telecom applications including unified messaging, SoIP, call control, media and signaling gateways, and operational system support. In addition, the TIGW1U raises the performance bar for telecom solutions with support for Intel® I/O Acceleration Technology (Intel® I/OAT)+, Intel® 64 Technology\$ (Intel® 64) and dual-channel Fully Buffered DIMM (FB-DIMM) technology at either 533 or 667 MHz for maximized bandwidth.

More product information is available at the following websites:

<http://www.intel.com/design/servers/cg/tigw1u/>

Intel® Carrier Grade Server TIGW1U support web site:

<http://support.intel.com/support/telecom/computeboards/tigw1u/index.htm>

Purpose of this Document:

This document provides details on what parts are available for ordering of the Intel® Carrier Grade Server TIGW1U production systems. This includes PID and MM# information for System SKUs, Accessories & Spares, as well as other Intel parts that are supported by the TIGW1U product.

Supported third-party components are not covered by this document, and may be found in the Tested Hardware and Operating System List (THOL) for this product.

II. Production SKUs

Intel® Carrier Grade Servers

PID Order Code	Description	MM#	Minimum Order Qty.
TMRA0201W	Intel® Carrier Grade Server TIGW1U, 1U, BaseModel 0. Includes (1) 450W AC Power Supply. With support for Quad-Core Intel® Xeon® processor L5410 and Dual-Core Intel® Xeon processor L5128 and L5148	893696	1
TMRD0201W	Intel® Carrier Grade Server TIGW1U, 1U, BaseModel 0. Includes (1) 450W DC Power Supply. With support for Quad-Core Intel® Xeon® processor L5410 and Dual-Core Intel® Xeon processor L5128 and L5148	893697	1
TMWA0201W	Intel® Carrier Grade Server TIGW1U, 1U, BaseModel 0. Includes (1) 450W AC Power Supply. With Dual-Core Intel® Xeon processor L5128 and L5148 for legacy support.	885431	1
TMWD0201W	Intel® Carrier Grade Server TIGW1U, 1U, BaseModel 0. Includes (1) 450W DC Power Supply. With Dual-Core Intel® Xeon processor L5128 and L5148 for legacy support.	885430	1

See the **TIGW1U Base Model 0 Configuration** table further down in this section for a list of components included in each base model 0 SKU.

Production SKUs are offered as either an AC or a DC version. The Product Identification code or PID of all SKUs contains the letter "A" for AC or "D" for DC as the 4th digit of the PID.

Both Production SKUs are base model 0 SKUs, (no processor, heatsink, memory, hard drive, power cord, operating system, or plug-in adapters are provided). Those components must be ordered separately as Accessories from Intel or from third party vendors listed in the Tested Hardware and Operating System List (THOL).

Power Cords are not included with the Mod 0 system. For AC Power cords, order the NA - North American power cord below. This power cable is RoHS-compliant.

PID	MM#	Comments
PWRCABLEUS	816324	This AC power cable can be ordered by North America (NA) customers. International customers should procure their specific power cords directly.

TIGW1U Base Model 0 Configuration

All Production SKUs are base model 0 SKUs (no CPU, heatsink, memory, hard drive or plug-in adapters are provided). Those components must be ordered separately as Accessories from Intel or from third party vendors listed in the Tested Hardware and Operating System List (THOL). The below table lists how many of each component is included in the Production model 0 SKU.

The table below lists which components are included in the base model 0 SKUs and which ones must be ordered separately or as optional accessories.

Component Description	Configuration AC SKU	Configuration DC SKU
Chassis (bezel, sheet metal, top cover, PCI carrier)	1	1
S5000PHB Baseboard -CPUs/Heat Sinks not included	1	1
FH-FL Bracket with PCI-X Riser	1	1
AC power supply (450W)	1	-
DC power supply (450W)	-	1
Power Supply Filler Panel	1	1
DVD-CDR Optical Drive	1	1
CD-ROM Carrier	1	1
Drive bays for hot-swap 2.5" SAS HDD	3	3
Server Deployment Toolkit (CD)	1	1
Quick Start Guide	1	1
Power cable ¹	Purchase separately	Purchase separately
PCI-Express Riser ²	Optional Accessory	Optional Accessory
HW RAID 5 Kit	Optional Accessory	Optional Accessory
Intel® Z-U130 Value Solid State Drive ²	Optional Accessory	Optional Accessory
Intel® Remote Management Module 2 ²	Optional Accessory	Optional Accessory
Rack Mount Kits ³	Optional Accessory	Optional Accessory

Some items above available as optional accessories as noted:

¹Refer to AC power cord accessory in section III

²Refer to "Production Spares/Accessory List" in section IV

³Refer to "Rack Mounts" in Appendix B

Note: For these SKUs to be functional, one or more of the following is required: Power cord, CPU, Memory, Hard Drive, Operating System, Heat Sinks (Copper Heat Sinks are required).

Notes on the TIGW1U Model 0 Configuration and Options:

- **PCI Riser**
 - The base configuration comes standard with one PCI Risers supporting One PCI-X slot.
 - An additional full-height, full-length riser (below) is supported and available as accessories (*refer to "Production Spares/Accessories List" in section III*).
 - Single PCI-Express (PCIe) slot
- **HW RAID**
 - While SW (Software/Firmware) RAID 0/1/10 is supported on the base configuration, HW (Hardware) RAID 0/1/10 and RAID 5 support can be enabled via a set of optional accessories (*refer to "Production Spares/Accessories List" in section III*).
 - Components required are **NSCRAID01W** (NSC2U RAID5 Kit - includes the I-Button (license), battery cable) and the **AXXMINIDIMM** (128 MB Mini DIMM registered DDR-2 for RAID cache.)
 - An additional option is the **AXXRSBBU3** (Intel® RAID Smart Battery Backup module provides up to 72 hours of cache memory retention when used with AXXMINIDIMM). The cable to connect the battery is included in the NSCRAID01W kit.
- **Intel® Z-U130 Value Solid State Drive**
 - Support for the Intel® Z-U130 Value Solid State Drive is available via a selection of optional accessories (*refer to "Production Spares/Accessories List" in section III*).
 - Components required are an Intel® Z-U130 Value Solid State (select desired capacity) as well as a mounting kit (**TMWVSSDRIVE01W**) to mount it inside the chassis.
 - Solid state drives are available in several sizes, enabling an array of product customization options. These drives securely mount inside the chassis offering
 - Storage: independent of traditional disk drives
 - Boot OS from solid state drive; store data on hard drive
 - Store backup image of boot drive
 - Add a server partition to the server
 - Any other customer design options
- **Air Filters** are not provided with the TIGW1U base system.

For more detailed information on the TIGW1U, refer to the web links below.

Additional Product Details

Check the following web site for more information on the TIGW1U:

<http://www.intel.com/design/servers/cg/TIGW1U/>

Support.Intel.Com Users

Product information including specifications, compatibility, user's guides, drivers, firmware, and software associated with the Intel® Carrier Grade Server TIGW1U is available from Intel Customer Support.

If you can not access the documents using the links provided, please contact your FAE/FSE for assistance.

Details on Ordering of Processors:

The TIGW1U supports the Quad-Core Intel® Xeon® processor 5400 Series, and the Dual-Core Intel® Xeon processor L5100 series listed below. Ordering details for the CPUs for use in TIGW1U are listed below:

Processors Supported by TIGW1U:

Processor Number	Long Life	Cores	Speed	TDP	FSB	Tray Processor	
						Product Code	MM#
L5410	Yes	Quad	2.33 GHz	50W	1333 MHz	EU80574JJ053N	893491
LV 5148	Yes	Dual	2.33 GHz	40W	1333 MHz	HH80556JJ0534M	891675
LV 5128	Yes	Dual	1.86 GHz	40W	1066 MHz	HH80556JH0364M	891704

Notes:

- The above processors are tested and supported by Intel and are recommended for long availability and support.
- Heatsinks
 - Only Tray processors are recommended with this product. The processor thermal solution for this server must include the use of a copper heat sink (e.g. see TMWHSNK01W in the Spares/Accessories list below). There are no clips needed for this heat sink, since the heat sink includes captive screws.
 - The boxed processors previously listed in the “supported” table have been removed since these now include an aluminum heat sink which does not provide sufficient heat dissipation to meet NEBS thermal requirements. For this reason, Intel does not recommend the use of Boxed processors with this product.

Note that CPU product codes can change, and that the above is a snapshot current as of 5/1/2008. Please consult with your Intel representative for SSpec or MM# which may be needed for ordering the CPU. Any differences in functionality is reported in Monthly Specification updates available on <http://developer.intel.com>.

III. Production Spares/Accessory List

Below are the Spares parts and Accessories that may be ordered with the TIGW1U system. Any of these parts may be ordered as spares for part replacement purposes or as additional customer inventory. Some of the parts below are not included in the TIGW1U system base model and may be ordered as accessories for purposes of upgrading the base model to include additional features.

Many of these parts are common to the Intel® Carrier Grade Server NSW1U product. For a listing of additional compatible accessories, such as Optical Devices for use with the CD-ROM carrier, please refer to the Tested Hardware and Operating System List (THOL).

PID Order Code	Description	Contents	Included in Base Model (Y/N)	MM#	Minimum Order Size
TMWACPSU01W	TIGW1U AC Power Supply	AC power supply	Y <i>one in AC SKU</i>	886492	1
TMWDCPSU01W	TIGW1U DC Power Supply	DC power supply, input power connector	Y <i>one in DC SKU</i>	886537	1
TMWHSNK01W	TIGW1U CPU Heatsink	Heatsink	N	887151	12 <i>order in multiples of 12</i>
Hardware RAID					
NSCRAID01W	NSC2U RAID5 Kit: Enables full intelligent SAS RAID solution engineered around the Intel® 80333 I/O Processor @ 500MHz. Note: enabling RAID capability also requires mini DIMM – Intel AXXMINIDIMM (or qualified 3rd party mini DIMM).	I-Button (license), battery cable <i>(battery or mini-DIMM not included)</i>	N	890202	1
AXXRSBBU3	Intel® RAID Smart Battery Backup module: for use with Intel® Integrated Server RAID (requires NSCRAID01W plus mini DIMM), provides up to 72 hours of cache memory retention when used with AXXMINIDIMM.	Battery backup kit	N	883471	5
AXXMINIDIMM	128 MB Mini DIMM registered DDR-2 for RAID cache. Note: enabling RAID capability also requires Intel RAID Activation Key–NSCRAID01W	Mini-DIMM	N	881258	5

PID Order Code	Description	Contents	Included in Base Model (Y/N)	MM#	Minimum Order Size
Remote Management					
AXXRMM2	Intel® Remote Management Module 2 (RMM2) - Single Pack	RMM2 with GCM (single-pack)	N	894383	1
AXXRMM2BULK	Intel® Remote Management Module 2 (RMM2) - Bulk Pack (10)	RMM2 with GCM (10-pack)	N	894385	1 (specify '1' for each 10-pack)
Solid State Drives					
TMWVSSDRIVE01W	Mounting kit for Intel® Z-U130 Value Solid State Drive Requires Intel® Z-U130 Value Solid State Drive (purchased separately).	Interposer board, cable, mounting screws (flash drive not included)	N	893165	1
SSDUSMS0001GL10	Intel® Z-U130 Value Solid State Drive - 1 GB, Low Profile Connector <i>Requires TMWVSSDRIVE01W</i>	1 GB Module – Low Profile Connector	N	890945	10
SSDUSMS0002GL10	Intel® Z-U130 Value Solid State Drive – 2 GB, Low Profile Connector <i>Requires TMWVSSDRIVE01W</i>	2 GB Module – Low Profile Connector	N	890943	10
SSDUSMS0004GL10	Intel® Z-U130 Value Solid State Drive - 4 GB, Low Profile Connector <i>Requires TMWVSSDRIVE01W</i>	4 GB Module – Low Profile Connector	N	890941	10
PCI Risers					
ABKPCIEXPUP	1U PCI-Express Riser	Riser	N	878705	1
ABKPCIXUP	1U PCI-X Riser	Riser	Y	878706	1
Spares					
TMWMBZL01W	TIGW1U Painted Bezel	Bezel	Y	886855	1
TBD	TIGW1U Unpainted Bezel	Bezel	N	TBD	12
TMWCBL01W	TIGW1U Cables, CD-ROM power, spare	System Cables— Flex, CD-ROM power, CD-ROM signal, SATA Signal, Front Panel Panel, Battery	Y	886613	1
TMWCDRMC01W	TIGW1U CD-ROM Carrier; i/f board (no drive)	Carrier, PBA, screws, pwr cable, signal cable	Y	886842	1
TMWFANSET01W	TIGW1U Fanset – for TMW SKU	Fans	Y	886563	1
TMWFANSET02W	TIGW1U Fanset for TMR SKU	Fans	Y	894963	1

PID Order Code	Description	Contents	Included in Base Model (Y/N)	MM#	Minimum Order Size
Spares					
FXX25HDDCAR	TIGW1U SAS HDD carrier	Carrier, black plastic filler, screws (4)	Y	881681	10
TMRBSBRD01W	TIGW1U Baseboard - With support for Quad-Core Intel® Xeon® processor L5410	Board	Y (TMRA0201W and TMRD0201W)	893720	1
TMWBSBRD01W	TIGW1U Baseboard	Board	Y (TMWA0201W and TMWD0201W)	886850	1
TMWPDB01W	TIGW1U Power Distribution Board	Board	Y	886538	1
TMWSASFP01W	TIGW1U SAS Front Panel I/O board	Board, light pipe	Y	886539	1
TMLREK01	Rail Enabling Kit to enable AXXBASICRAIL, AXXBASICRAIL13, and AXXHERAIL kits	10 sets in an overpack of: Rackmount easr, Shoulder Screws, screws	N	898926	10

Appendix A. Rack Mounting Options for 1U and 2U Intel® Communications Rack Mount Servers

Rack mounting kits for 2-post or 4-post, 19-inch or 23-inch racks are offered for this product. Please refer to the tables below for the correct options to suit your needs.

All rack mount kits listed are suitable for 1U and 2U Intel® Communications Rack Mount Servers. Installation instructions are included in each kit.

2-post Rack Mounting Kit Options							
Applicable kits:	Rack width		Post depth		Rack fastener hole spacing		
	19 inch	23 inch	3 inch	5 inch	EIA-Wide	EIA-Universal	ETSI
TMLCMOUNT21	●		●	●	●	●	
TMLPMOUNT41	●		●	●		●	
TMLPMOUNT51	●		●	●	●	●	
TMLPMOUNT52		●	●	●	●	●	●

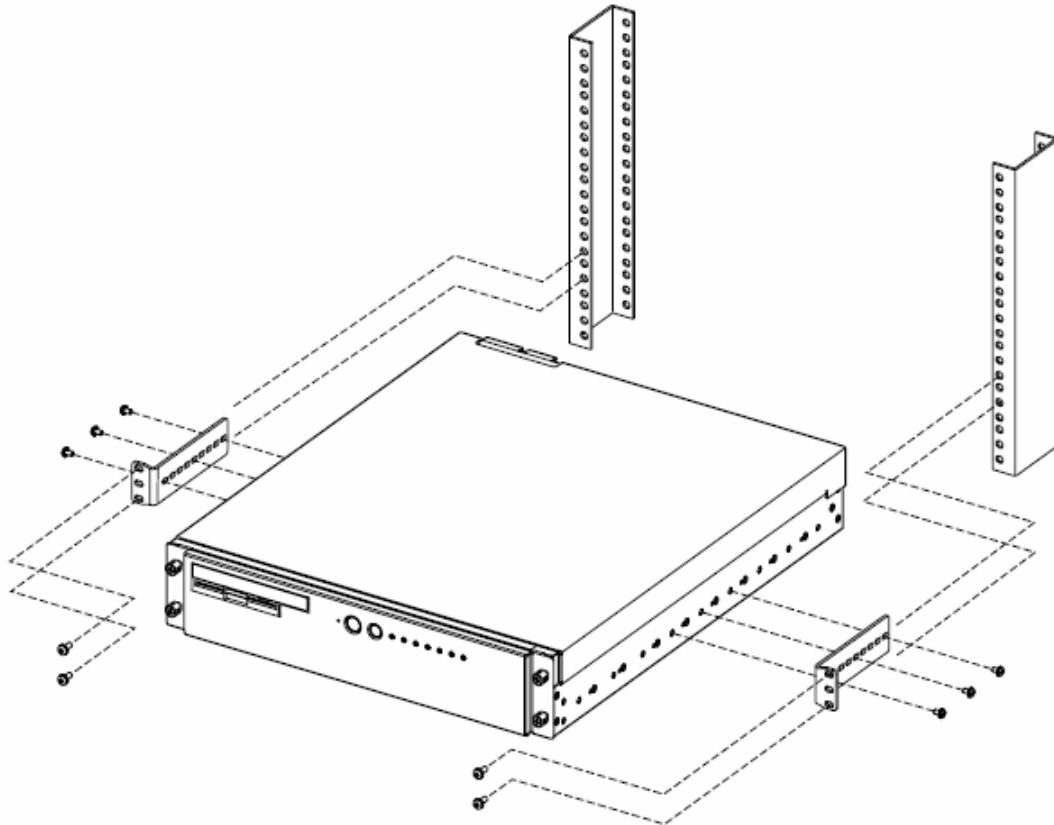
4-post Rack Mounting Kit Options							
Applicable kits:	Rack width		Front-post to rear-post distance		Rack fastener hole spacing		
	19 inch	23 inch	Min (inches)	Max (inches)	EIA-Wide	EIA-Universal	ETSI
TMLPMOUNT41	●		20	24		●	
TMLPMOUNT51	●		20	24	●	●	
TMLPMOUNT52		●	20	24	●	●	●
TMLPSLIDE01 [†]	●		22.5	28 or 34 ^{††}		●	

[†]The TMLPSLIDE01 kit contains server securing brackets. The rails and other options for mounting the server are available through other vendors such as Accuride (<http://www accuride.com/index2.php>).

^{††}34-inch span requires the optional Accuride "Long Bracket" kit.

TMLCMOUNT21

The TMLCMOUNT21 kit mounts Intel® Communication Rack Mount Servers to a 2-post, central office type, 19" wide rack. This kit consists of simple L-shaped brackets; which fasten to the sides of the server and to the rack.



TMLCMOUNT21

TMLPMOUNT41, TMLPMOUNT51 and TMLPMOUNT52

TMLPMOUNT41/51/52 series mounts Intel® Communication Rack Mount Servers to 2-post or 4-post racks.

TMLPMOUNT41 and TMLPMOUNT51 are used for mounting servers on 19" wide racks. These racks are considered standard EIA (universal hole spacing) racks.

TMLPMOUNT52 is used for mounting servers on 23" wide racks. These racks could be standard EIA (universal or wide hole spacing) or ETSI (European) racks.

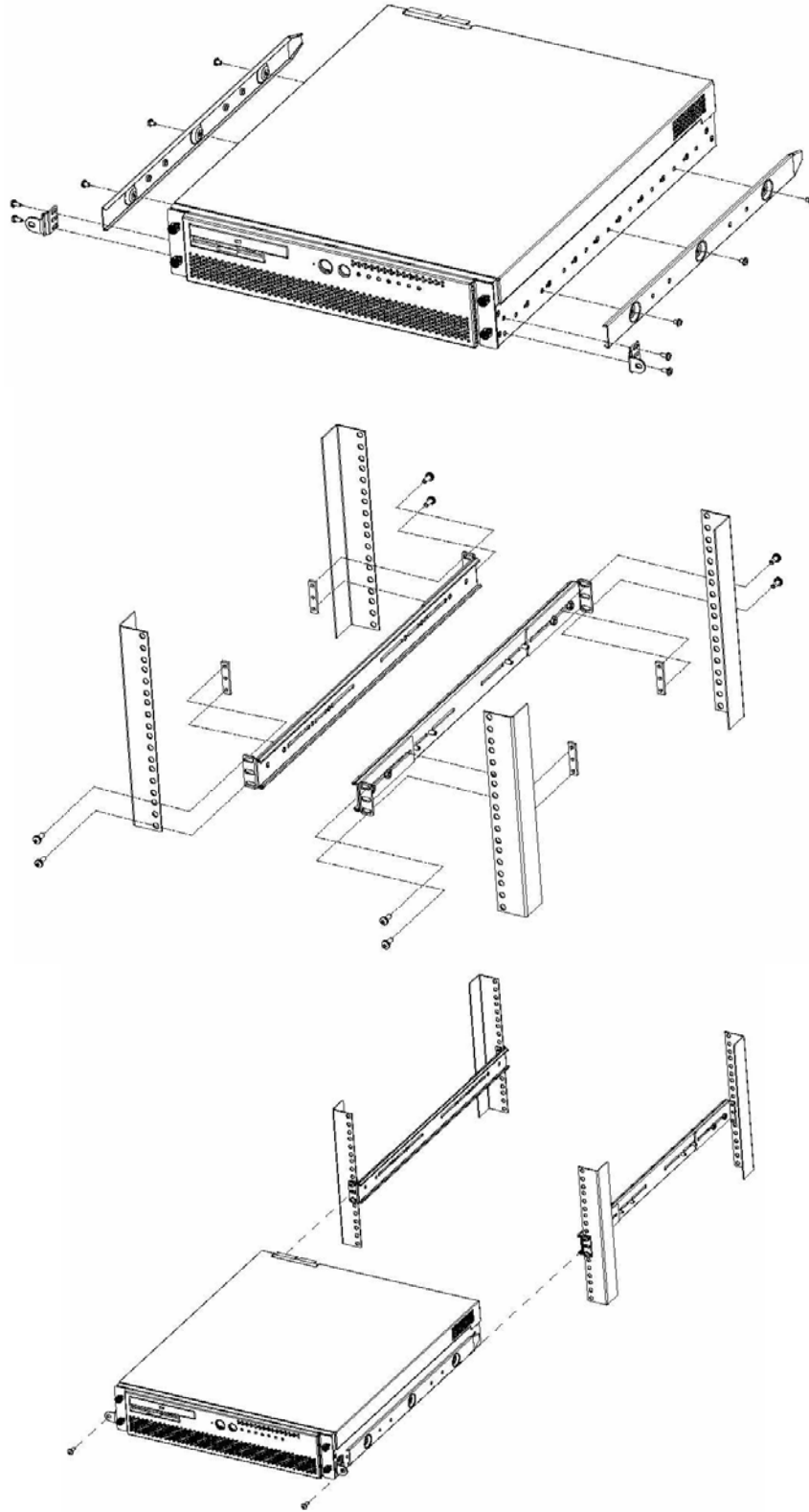
TMLPMOUNT41/51/52 series are designed with a slide-in rail-type system. Although the mounts are designed as rails, they are not sliding rails. This means the servers can be slid into the racks for installation purpose, but the rails are not designed to support a mounted server during service.

TMLPMOUNT4x/5x feature comparison						
	Slide pull-out locking feature	Slide interface material	4-post rack hole spacing	2U-tall nut bar	2-post chassis securing screw location	"HP Mulan rack interference"
TMLPMOUNT41	No ¹	Plastic strips ²	EIA-Universal	Not included	Side access ⁶	Interference
TMLPMOUNT51	Yes	Xylan coating ³	EIA-Wide or EIA-Universal ⁴	Included ⁵	Front access	No Interference
TMLPMOUNT52	Yes	Xylan coating ³	EIA-Wide, EIA-Universal or ETSI	Included ⁵	Front access	N/A

Notes:

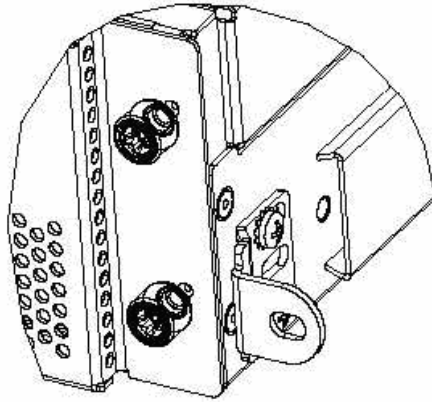
1. Extra care must be exercised with TMLPMOUNT41 to securely hold the server with one's hands when sliding it out of the rack, else the server may fall to the ground as its being removed.
2. Plastic strips on TMLPMOUNT41 have peeled off in some customer installations. Consequence: The parts are usable, but the server may have somewhat of a "scrape-in feel" rather than "slide in". Also, the rails will fit sloppier, so the side-located chassis securing screws may be difficult to align in 2-post installations. Replacement material is available from the plastic strip manufacturer.
3. Xylan is a tough, low-friction coating similar to Teflon.

4. EIA-Wide spacing doesn't have the interstitial hole that is present in EIA-Universal. TMLPMOUNT51 contains an adapter bracket to overcome this EIA-Wide issue.
5. This component (2U Nut Bar) enables installation of a rail kit into a 1U rack slot when there is already equipment installed both above and below that open slot.
6. The sides of the server must be accessible when using TMLPMOUNT41 in 2-post racks.

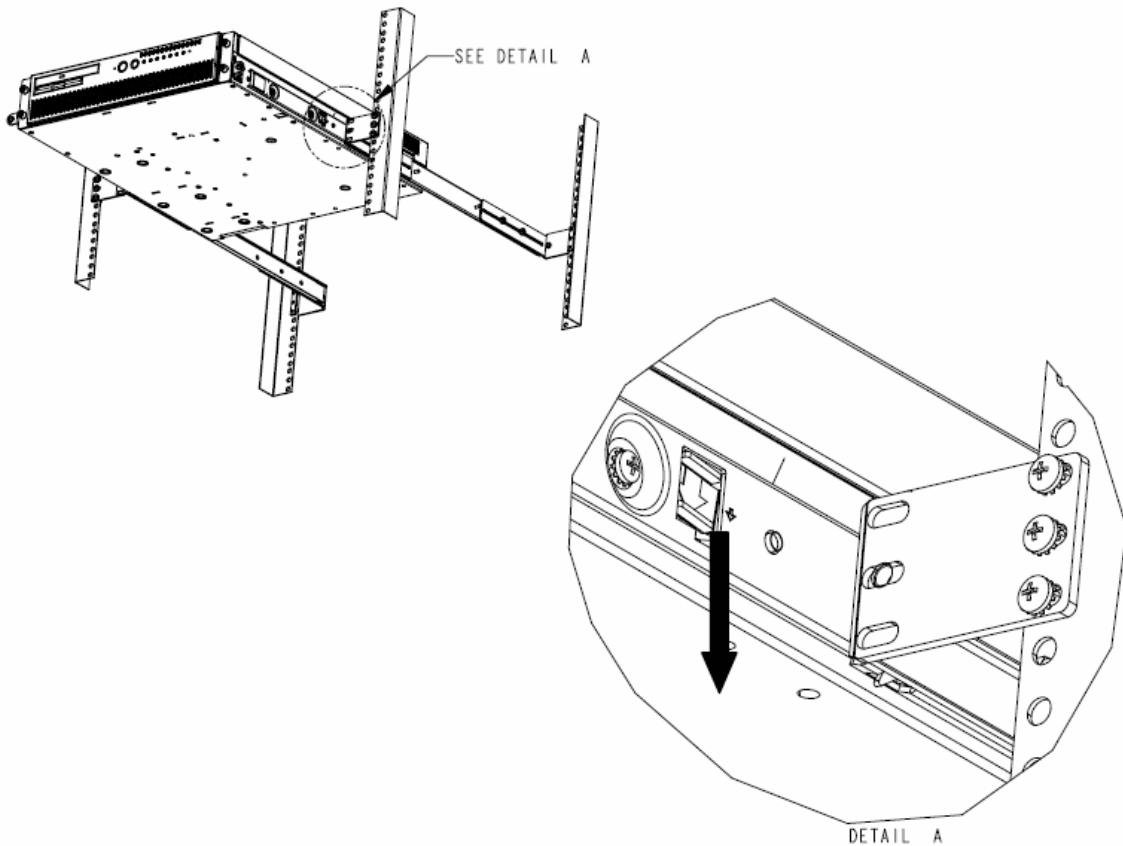


The diagrams above summarize the components and “slide-in rail-type” system of the TMLPMOUNT41. It can be adapted for a 2-post or 4-post installation.

The main difference between the TMLPMOUNT41 and TMLPMOUNT51/52 series is that the TMLPMOUNT41 series uses a screw to lock the server in place via the Universal Mounting Bracket, whilst the TMLPMOUNT51/52 series has an additional Slide Pull-Out Locking feature.



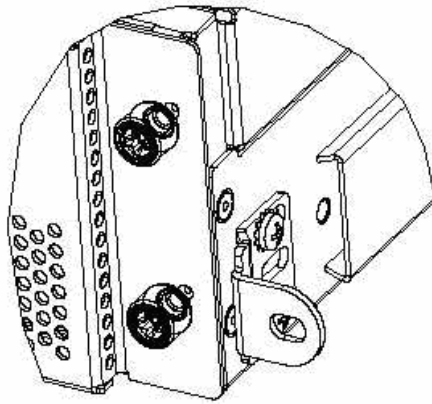
The Universal Front Mounting Bracket on the TMLPMOUNT41



The Slide Pull-Out Locking feature on the TMLPMOUNT51/52

TMLPSLIDE01

The TMLPSLIDE01 is an **accessory kit** designed for use in conjunction with slide rails to produce a rack mounted serviceable server. The TMLPSLIDE01 kit contains two Universal Front Mounting Brackets that secure the server to the front of the rack. The sliding rails and optional mounting brackets required to mount the server must be purchased through the channel. For example, the Accuride 22-inch Model 305A-LR slide rails are designed to mount a server for “in-rack service.” This example would also use an Accuride mounting bracket kit and the TMLPSLIDE01.



Universal Front Mounting Bracket with securing tab

Note: Using slide rails may result in non-compliance with Seismic Zone 4 requirements of NEBS-3 certification.

Ordering Information

PID	Non-RoHS MM#	RoHS MM#	Minimum Order Quantity
TMLCMOUNT21	862501	881904	10
TMLPMOUNT41	838890	881907	10
TMLPMOUNT51	851760	881934	1
TMLPMOUNT52	851745	881935	1
TMLPSLIDE01	845583	881915	10

Customers should order RoHS items for shipments going to the European Union (EU).

Although these mounts have been designed for industry standard racks, please consult with your Intel Field Application or Sales Engineer before selecting racks for these servers.

Compatible rack mounting kits may also be obtained from 3rd party suppliers.

