>> Kontron Configuration Guide <<

# Kontron IP Network Server NSW1U

Document Revision 2.6

December 2010

| Revision | Date | Comments |
|---|---|---|
| 1.0 | 11/10/2006 | Original version. |
| 1.1 | 3/19/2007 | Updated at SRA. Added Front NIC Bypass SKU. |
| 1.2 | 5/17/2007 | Updated Spares list; new Rack Mount appendix; misc. updates |
| 2.0 | 4/17/2008 | Added info for Quad-Core Intel® Xeon® processor L5410 support, changed format, removed Syscon, added Z-U130 and other additional parts. |
| 2.1 | 5/13/2008 | Fixed NSWCDFILL01W to indicate it is included<br>Added TMLREK01 |
| 2.2 | 6/06/2008 | Added “Copper” to TMWHSNK01W description<br>Added NSWESCBLNK01W |
| 2.3 | 1/2009 | Added EPSD rails section to Appendix A; updated processor section with latest steppings; updated RAID BBU spare to Li-Ion version; updated SSD spare information; replaced Intel references with Kontron references. |
| 2.4 | 5/13/2009 | Removed MM# references from Kontron products. Updated PCI-E and PCI-X riser spares with different product codes. Noted discontinuance of AXXBASICRAIL and AXXHERAIL. |
| 2.5 | 6/29/2009 | New Kontron template. Removed MM# references from Intel-sourced SKUs. All SKUs are now orderable directly from Kontron. |
| 2.6 | 12/20/2010 | Added TMRDVDCBLSATAW spare. |

# Document Table of Contents

# I. Introduction

The IP Network Server NSW1U system is the first 1U rack mount server to join the IP Network Server family, characterized by having long product life and a 20” depth chassis. It features the Quad-Core Intel® Xeon® processor 5400 series, and the 64-bit Dual-Core Intel® Xeon® processor 5100 series, providing improved performance-per-watt over previous-generation rack mount servers.

IP Network Servers are suited to a host of applications in the network security and industrial environment. The server is targeted to applications requiring rugged systems including Intrusion Detection, Intrusion Protection, Firewall, VPN, SSL VPN, and Application Secure Gateways. It can also support manufacturing, industrial, utility and military applications where a rugged, highly reliable server is required for harsh environments such as dust, high altitude, fire hazard, earthquake propensity, and high ambient temperatures.

More product information is available at the following link on the Kontron website:

http://us.kontron.com/products/systems+and+platforms/communication+rackmount+servers/ip+network+servers/ip+network+server+nsw1u.html

## Purpose of this Document:

This document provides details on what parts are available for ordering of the IP Network Server NSW1U production systems and associated accessories and spares. Included are the necessary order codes and other important configuration information related to the ordering of the 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. Ordering NSW1U System SKUs

The **NSW1U System SKUs** are listed below:

| | Product Code | Description | Minimum Order Qty. |
|---|---|---|---|
| | **NSRA0201W** | IP Network Server NSW1U **Rear NIC**, Base Model 0 with **AC Power Supply**.<br>*Includes support for Quad-Core Intel® Xeon® processor **5400 series** and legacy support for Dual-Core Intel® Xeon processor **5100 series.*** | 1 |
| | **NSRD0201W** | IP Network Server NSW1U **Rear NIC**, Base Model 0 with **DC Power Supply**.<br>*Includes support for Quad-Core Intel® Xeon® processor **5400 series** and legacy support for Dual-Core Intel® Xeon processor **5100 series.*** | 1 |
| | **NSRA0401W** | IP Network Server NSW1U **Front NIC with Bypass**, Base Model 0 with **AC Power Supply**.<br>*Includes support for Quad-Core Intel® Xeon® processor **5400 series** and legacy support for Dual-Core Intel® Xeon processor **5100 series.*** | 1 |
| Legacy Support | **NSWA0201W** | IP Network Server NSW1U **Rear NIC**, Base Model 0 with **AC Power Supply**.<br>*Includes legacy support for Dual-Core Intel® Xeon processor **5100 series** only.* | 1 |
| Legacy Support | **NSWD0201W** | IP Network Server NSW1U **Rear NIC**, Base Model 0 with **DC Power Supply**.<br>*Includes legacy support for Dual-Core Intel® Xeon processor **5100 series** only.* | 1 |
| Legacy Support | **NSWA0301W** | IP Network Server NSW1U **Front NIC**, Base Model 0 with **AC Power Supply**.<br>*Includes legacy support for Dual-Core Intel® Xeon processor **5100 series** only.* | 1 |
| Legacy Support | **NSWA0401W** | IP Network Server NSW1U **Front NIC with Bypass**, Base Model 0 with **AC Power Supply**.<br>*Includes legacy support for Dual-Core Intel® Xeon processor **5100 series** only.* | 1 |

See the **NSW1U Base Model 0 Configuration** table further down in this section for a list of components included in each base model 0 SKU.

The NSW1U system SKUs are ordered using the Product Code as the order number. 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.

All 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 Kontron 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 following North American power cable using the provided product code. This power cable is RoHS-compliant.

| Product Code | Comments |
|---|---|
| **1-340000-0** | This AC power cable can be ordered by North America (NA) customers. International customers should procure their specific power cords directly. |

Note: Ensure that customers have the appropriate technical support and contact before placing their first order.

# NSW1U 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 Kontron or from third party vendors listed in the Tested Hardware and Operating System List (THOL).

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 | AC Mod 0 Configuration | DC Mod 0 Configuration |
|---|---|---|
| AC power supply (450W) | 1 included | - |
| DC power supply (450W) | - | 1 included |
| Filler Panel in 2nd power supply bay | 1 included | |
| Chassis (sheet metal, top cover, PCI carrier) | 1 included | |
| Bezel (unpainted) | 1 included | |
| S5000PHB Baseboard | 1 included | |
| FH-FL Bracket with PCI-Express Riser | 1 included | |
| FB-DIMM slots (memory not included) | 6 included | |
| Drive bays for 3.5" SATA HDD (w/ carrier) | 2 included | |
| Server Deployment Toolkit (CD) | 1 included | |
| Quick Start Guide | 1 included | |
| Power cable | Purchase separately[1] | |
| SW RAID 0/1/10 | Supported | |
| Mounting kit for Z-U130 Solid State Drives | Optional Accessory[2] | |
| Intel® Remove Management Module 2 | Optional Accessory[2] | |
| PCI-X Riser | Optional Accessory[2] | |
| NIC Cable | Optional Accessory[2] | |
| Cable Management Bracket | Optional Accessory[2] | |
| Bypass Ethernet Ports | Optional Accessory[3] | |
| Rack Mount Kits | Optional Accessory[4] | |
| Rail Enabling Kit (to enable AXXBASRAIL13, AXXHERAIL2, AXXBASICRAIL, and AXXHERAIL kits) | Optional Accessory[4] | |
| Processor (refer to "Details on Ordering Processors") | Purchase separately[5] | |
| Heatsink (copper required) | Accessory or purchase separately | |
| Memory | Purchase separately[5] | |
| Hard Disk Drive | Purchase separately[5] | |
| DVD-CDR Optical Drive | Purchase separately[5] | |
| CD-ROM Carrier | SKU Dependant[6] | |

Some items above available as optional accessories as noted:

[1]Refer to AC power cord accessory in this section

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

[3]Refer to "Quad Port Bypass NIC Capability" in section IV

[4]Refer to "Rack Mounts" in Appendix A

[5]Should be purchased separately (parts not listed in this document)

[6]Production SKUs NSRA0201W, NSRD0201W, and NSRA0401W include the CD-ROM carrier in the accessory pack. For other SKUs (NSWxxxxxx), the CD-ROM carrier is not included but may be ordered separately.

## Notes on the NSW1U Model 0 Configuration and Options:

- **PCI Riser**
  - The base configuration comes standard with one full-height, full-length PCI Riser supporting one PCI-Express (PCIe) slot.
  - An alternate full-height, full-length, single-slot PCI-X riser is also supported. It is available as an accessory (*refer to "Production Spares/Accessories List" in section III*) and may be purchased as a replacement for the PCIe riser.

- **SW RAID**
  - The NSW1U supports only SW (Software/Firmware) RAID 0/1.

- **Solid State Drives**
  - Support for solid state drives (with USB interface) is available by purchasing a mounting kit accessory (**TMWVSSDRIVE01W**) to mount the drive inside the chassis (*refer to "Production Spares/Accessories List" in section III*).
  - The following solid state drives are supported:
    - SMART Z-U130 eUSB Drive (*http://www.smartm.com/product/m_intel_z-u130.cfm*)
      - *Note: This replaces the Intel® Z-U130 Value Solid State Drive*
    - Intel® Z-U130 Value Solid State Drive (legacy support)
  - Solid state drives are available in several sizes and securely mount inside the chassis. They enabling an array of product customization options.
    - 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

- **Rack Mounting Options**
  - Rack mounting kits for 2-post or 4-post, 19-inch or 23-inch racks are offered by Kontron for this product. These include TMLCMOUNT21, TMLPMOUNT41, TMLPMOUNT51, TMLPMOUNT52, and TMLPSLIDE01. The Rail Enabling Kit (TMLREK01) is not required for these rack mount kits.
    - *Please refer to Appendix A to determine the correct options to suit your needs. For ordering details, refer to "Production Spares/Accessories List" in section III.*
  - If AXXBASRAIL13, AXXHERAIL2, AXXBASICRAIL, or AXXHERAIL from Intel will be used, then a Rail Enabling Kit (TMLREK01) must be purchased from Kontron to enable support of these rails.
    - *For ordering details, refer to "Production Spares/Accessories List" in section III.*

# Details on Ordering Processors:

The NSW1U supports the Quad-Core Intel® Xeon® processor 5400 Series and the Dual-Core Intel® Xeon processor 5100 series shown in the table below.

## Processors Supported by NSW1U:

| | Processor Number | Cores | Speed | TDP | FSB | Kontron P/N | Intel P/N | Intel MM# |
|---|---|---|---|---|---|---|---|---|
| | **E5440** | Quad | 2.83 GHz | 80W | 1333 MHz | K00008-001 | AT80574KJ073N | 898592 |
| | **L5410** | Quad | 2.33 GHz | 50W | 1333 MHz | K00029-001 | AT80574JJ053N | 898603 |
| *Legacy* | **5140** | Dual | 2.33 GHz | 65W | 1333 MHz | *N/A* | HH80556KJ0534M | 891730 |
| *Legacy* | **5130** | Dual | 2.00 GHz | 65W | 1333 MHz | *N/A* | HH80556KJ0414M | 891731 |
| *Legacy* | **LV 5148** | Dual | 2.33 GHz | 40W | 1333 MHz | *N/A* | HH80556JJ0534M | 891675 |
| *Legacy* | **LV 5128** | Dual | 1.86 GHz | 40W | 1066 MHz | *N/A* | HH80556JH0364M | 891704 |

**Notes:**

- All above processors are on Intel's long life roadmap.
- The E5440 or L5410 processors are recommended with the NSW1U for highest performance and longest availability and support. They are orderable from Kontron or Intel using the indicated part numbers.
- The above 5100 processor SKUs are also supported on the NSW1U for legacy purposes, and are orderable from Intel only.
- Heat Sinks
    - 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 thermal requirements. For this reason, **Kontron does not recommend the use of Boxed processors with this product.**

# III. Ordering NSW1U Spares/Accessories

Below are the Spares parts and Accessories that may be ordered with the NSW1U system. Please read the following notes regarding this parts list.

- **Spares:** Any of these items may be ordered as 'Spares' for part replacement purposes.
- **Accessories:** Some of these items are not included in the NSW1U Mod0 base model, but may be ordered as 'Accessories' to upgrade the base model with additional features.
- **3rd Party Accessories:** For a listing of compatible 3rd party accessories, please refer to the Tested Hardware and Operating System List (THOL) document.

| Product Code | Description | Contents | Included in Base Model (Y/N) | Minimum Order Size |
|---|---|---|---|---|
| **TMWACPSU01W** | TIGW1U/NSW1U AC Power Supply | AC power supply | Y<br>*one in AC SKU* | 1 |
| **TMWDCPSU01W** | TIGW1U/NSW1U DC Power Supply | DC power supply, input power connector | Y<br>*one in DC SKU* | 1 |
| **TMWHSNK01W** | TIGW1U/NSW1U CPU Heatsink | Heatsink (Copper) | N | 12<br>*(order in multiples of 12)* |
| **Remote Management** | | | | |
| **AXXRMM2** | Intel® Remote Management Module 2 (RMM2) - Single Pack | RMM2 with GCM (single-pack) | N | 1 |
| **AXXRMM2BULK** | Intel® Remote Management Module 2 (RMM2) - Bulk Pack (10) | RMM2 with GCM (10-pack) | N | 1<br>*(specify '1' for each 10-pack)* |
| **Solid State Drive Support** | | | | |
| **TMWVSSDRIVE01W** | Mounting kit for Z-U130 Solid State Drives<br><br>*Interface support for:*<br>• *SMART Z-U130 eUSB Drive*<br>• *Intel® Z-U130 Value Solid State Drive (legacy)*<br>*(drives purchased separately)* | Interposer board, cable, mounting screws *(flash drive not included)* | N | 1 |
| **PCI Risers** | | | | |
| **TMWPCIERSR01W** | 1U PCI-Express Riser | Riser | Y | 1 |
| **TMWPCIXRSR01W** | 1U PCI-X Riser | Riser | N | 1 |
| **Spares** | | | | |
| **TMWCDRMC01W** | TIGW1U CD-ROM Carrier; i/f board (no drive) | Carrier, PBA, screws, pwr cable, signal cable | N | 1 |
| **NSWFBZL01W** | NSW1U Bezel - Rear NIC | Bezel | Y<br>*one in Rear NIC SKU* | 1 |

| Product Code | Description | Contents | Included in Base Model (Y/N) | Minimum Order Size |
|---|---|---|---|---|
| **NSWFBZL02W** | NSW1U Bezel – Front NIC & ByPass | Bezel | Y<br>*one in Front NIC SKU and Bypass SKU* | 1 |
| **NSWCBLBRK01W** | NSW1U Cable Management Bracket | Bracket for chassis face | N | 5<br>*(order in multiples of 5)* |
| **TMRDVDCBLSATAW** | SATA optical drive power/data cable kit | 5 cables, install guide | N | 1 |
| **NSWCDFILL01W** | NSW1U CD-ROM filler | CD filler | Y | 1 |
| **NSWSATAHDD01W** | NSW1U SATA HDD Carriers | 2 carriers | Y | 1 |
| **NSWFANSET01W** | NSW1U Fanset | Fans, bracket, air ducts | Y | 1 |
| **TMWCBL01W** | TIGW1U Cables, CD-ROM power, spare | System cables—Flex, CD-ROM power, CD-ROM signal, SATA Signal, Front Panel Panel, Battery | Y | 1 |
| **TMWPDB01W** | TIGW1U/NSW1U Power Distribution Board | Board | Y | 1 |
| **NSWEFPR01W** | NSW1U Ethernet Front Panel I/O Board - Rear NIC, Litepipe | Board, litepipe | Y<br>*one in Rear NIC SKU* | 1 |
| **NSWEFPF01W** | NSW1U Ethernet Front Panel I/O Board - Front NIC, Litepipe | Board, litepipe | Y<br>*one in Front NIC SKU* | 1 |
| **NSWBYPSBRD01W** | NSW1U Ethernet Front Panel - Front NIC with Bypass | Board | Y<br>*one in Front NIC SKU* | 1 |
| **Rack Mount Kits** *(refer to Appendix A for additional details)* | | | | |
| **TMLCMOUNT21** | Server Spare TMLPMOUNT21 | | N | 10 |
| **TMLPMOUNT41** | Server Spare TMLPMOUNT41 | | N | 10 |
| **TMLPMOUNT51** | Server Spare TMLPMOUNT51 | | N | 1 |
| **TMLPMOUNT52** | Server Spare TMLPMOUNT52 | | N | 1 |
| **TMLPSLIDE01** | Server Spare TMLPSLIDE01 | | N | 10 |
| **AXXBASRAIL13**<br>*(orderable from Intel only – MM# 899080* | Basic Slide Rail Kit *(replaces AXXBASICRAIL)*<br>*NOTE: Does not support Cable Management Arm.*<br>*NOTE: Requires TMLREK01 to attach to NSW1U chassis* | | N | 1 |
| **AXXHERAIL2**<br>*(orderable from Intel only – MM#* 901082 | Fully extending Slide Rail Kit *(replaces AXXHERAIL)*<br>*NOTE: Requires TMLREK01 to attach to NSW1U chassis* | | N | 1 |
| **AXXRACKARM2**<br>*(orderable from Intel only – MM#* 901084 | Cable Management Arm<br>*NOTE: To be used with AXXHERAIL2 only* | | N | 1 |

| Product Code | Description | Contents | Included in Base Model (Y/N) | Minimum Order Size |
|---|---|---|---|---|
| **AXXBASICRAIL** *(discontinued by Intel)* | Basic Slide Rail Kit. *NOTE: Requires TMLREK01 to attach to NSW1U chassis* | | N | 1 |
| **AXXHERAIL** *( discontinued by Intel)* | Tool-less, full extension sliding rail kit. *NOTE: Requires TMLREK01 to attach to NSW1U chassis* | | N | 1 |
| **TMLREK01** | Rail Enabling Kit<br>Enables AXXBASRAIL13, AXXBASICRAIL, and AXXHERAIL kits<br>• *Supported by NSW1U servers with an "R" in the 3rd position of their order numbers.* | Rackmount ears (2), rackmount shoulder screws (4), screws (2) per kit | N | 10 *(order in multiples of 10)* |
| The following PID Order Code below with the "R" in the 3rd position may be used in all servers as a spare part, and have support for Quad-Core Intel® Xeon® processor 5400 series and Dual-Core Intel® Xeon processor 5100 series. It may be used in all servers with either an "R" or "W" in the 3rd digit of the PID Order Code. | | | | |
| **NSRBSBRDR01W** | NSW1U Baseboard - Rear NIC and ByPass | Board | Y *one in Rear NIC SKU and ByPass SKU* | 1 |
| The following 2 PID Order Codes below with the "W" in the 3rd position may be used in all servers as a spare part, and have legacy support for Dual-Core Intel® Xeon processor 5100 series only, and may only be used in the appropriate server with "W" in the 3rd digit of the PID Order Code. | | | | |
| **NSWBSBRDR01W** | NSW1U Baseboard - Rear NIC | Board | Y *one in Rear NIC SKU* | 1 |
| **NSWBSBRDF01W** | NSW1U Baseboard - Front NIC | Board | Y *one in Front NIC SKU* | 1 |

# IV. Quad Port Bypass NIC Capability

This section is intended for customers that plan to add Intel Quad Port NIC with Bypass capability to the NSW1U. It describes what parts must be ordered to enable this capability.

The IP Network Server NSW1U Front NIC with Bypass has built in support for four ports of bypass Copper Ethernet ports. In addition, all NSW1U servers are capable of supporting:

- A single FH/FL PCIe NIC board with four ports of bypass Gigabit Ethernet (either Copper or Fiber) using the Quad NIC adapters designed by Intel.
- The front-accessible NIC configuration also requires the purchase of an internal cabling/mounting kit including an escutcheon for securing the front ports.

The Quad Bypass adapters and the cabling/mounting kits come in packages of five units each. These kits include five of the NIC cables designed for the NSW1U system, as well as the escutcheons, cable management bracket, and associated screws to complete the installation of the Bypass adapter in the system. Also there are bulk pack (48 count) escutcheon kits (copper, fiber, and filler panel) available to streamline the customization and painting process of the system.

Below are the Accessories that may be ordered to enable the Quad Port Bypass NIC capability on the NSW1U system. Parts indicated with an asterisk (*) should be ordered from Intel. All other parts should be ordered from Kontron.

| Product Order Code | Description | Contents | Included in Base Model (Y/N) | Min. Order Qty |
|---|---|---|---|---|
| **Copper NIC** | | | | |
| *** EXPI9014PTBLK** (Bypass rear access) *(orderable from Intel)* | Intel® PRO/1000 PT Quad Port Bypass Adapter (Copper) – 5 Pack | Quad-port design, based on two Intel® 82571GB dual-port PCI Express* GbE controllers | N | 5 |
| *** EXPI9024PTBLK** (Bypass NIC-in-front) *(orderable from Intel)* | Intel® PRO/1000 PT Quad Port Bypass Adapter (Copper, NIC-in-Front) – 5 Pack | Quad-port design, based on two Intel® 82571GB dual-port PCI Express* GbE controllers | N | 5 |
| **NSWDBCBL01W** | NSW1U Copper NIF Kit | Cable, PCI Support Bracket, escutcheon, screws | N | 5 *(order in multiples of 5)* |

| Product Order Code | Description | Contents | Included in Base Model (Y/N) | Min. Order Qty |
|---|---|---|---|---|
| **NSIESCCPR100** | Copper escutcheon (unpainted), packaged in cartons of 48 | Escutcheons (48-pack) | N | 48 *(order in multiples of 48)* |
| **Blank Fillers** | | | | |
| **NSWESCBLNK01W** | Blank escutcheon (unpainted), packaged in cartons of 48 | Escutcheons (48-pack) | N | 48 *(order in multiples of 48)* |
| **Fiber NIC** | | | | |
| *** EXPI9014PFBLK** (Bypass rear access) *(orderable from Intel)* | Intel® PRO/1000 PF Quad Port Bypass Adapter (Fiber) – 5 Pack | Quad-port design, based on two Intel® 82571GB dual-port PCI Express* GbE controllers | N | 5 |
| *** EXPI9024PFBLK** (Bypass NIC-in-front) *(orderable from Intel)* | Intel® PRO/1000 PF Quad Port Bypass Adapter (Fiber, NIC-in-Front) – 5 Pack | Quad-port design, based on two Intel® 82571GB dual-port PCI Express* GbE controllers | N | 5 |
| **NSWJBCBL01W** | NSW1U Fiber NIF Kit | LED cable, PCI Support Bracket, escutcheon, LC connectors screws | N | 5 *(order in multiples of 5* |
| **NSIESCFBR100** | Fiber Escutcheon (unpainted), packaged in cartons of 48 | Escutcheons (48-pack) | N | 48 *(order in multiples of 48)* |

*Note: For a list of other tested Network Interface Cards (NICs) refer to the Tested Hardware and Operating System List (THOL).*

## Overview of Intel® PRO/1000 Quad Port Bypass Server Adapters:

The Intel® PRO/1000 PT and PF Quad Port Bypass Server Adapters provide in-line server appliances, such as Intrusion Protection Servers (IPSes), with high-performance, low-latency, in-line connectivity, and a bypass mode to ensure business continuity. These adapters also use the PCI Express* serial bus for greater throughput, and they support Intel® I/O Acceleration Technology (Intel® I/OAT) for further performance enhancement, including the reduced overhead so important to IPS applications.

The Intel® PRO/1000 PT and PF Quad Port Bypass Server Adapters are intended for use by equipment manufacturer hardware designers in application-specific in-line server appliances, where a bypass mode is desirable. Given that equipment manufacturers typically write specific software applications for their in-line platforms, Intel only provides open source reference drivers for these adapters. Interested hardware designers may contact their local Intel representative for additional product or purchase information.

More information on **Intel® PRO/1000 Quad Port Bypass Server Adapters** is available at:

http://www.intel.com/network/connectivity/products/pro1000_quad_bypass_server_adapters.htm

# Appendix A. Rack Mounting Options for 1U and 2U 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 Communications Rack Mount Servers. Installation instructions are included in each kit.

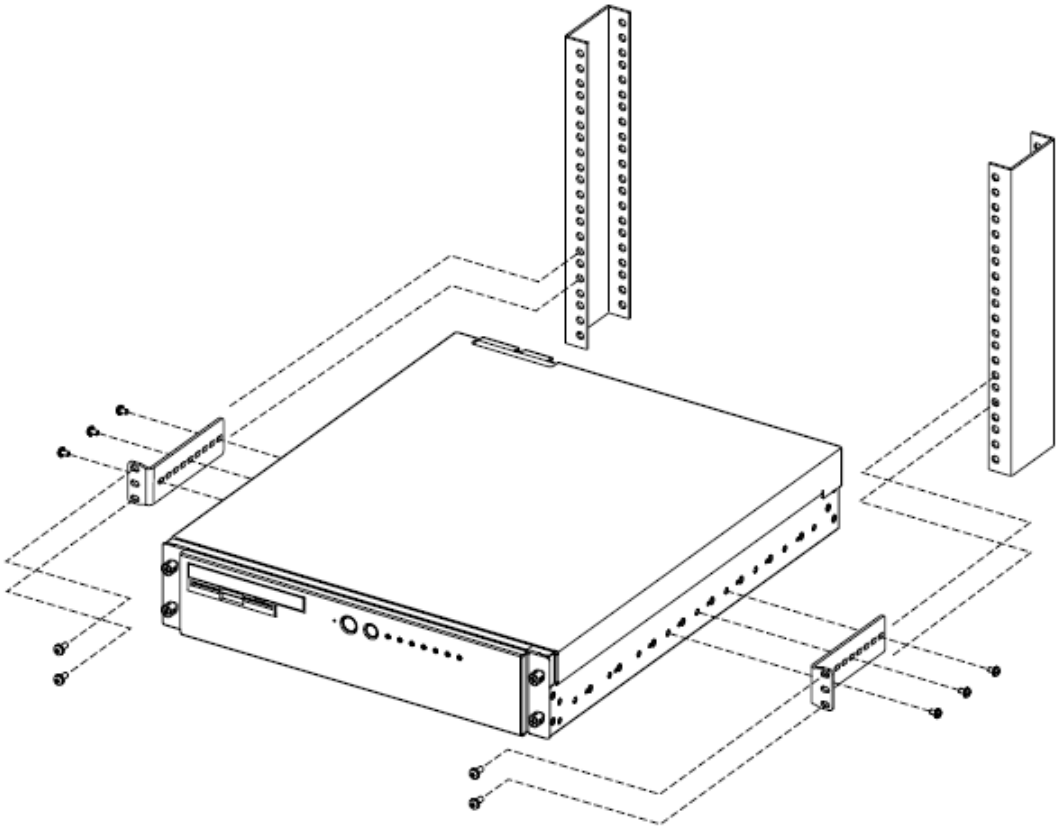
| 2-post Rack Mounting Kit Options | | | | | | | |
|---|---|---|---|---|---|---|---|
| Applicable kits: | Rack width | | Post depth | | Rack fastener hole spacing | | |
| | 19 inch | 23 inch | 3 inch | 5 inch | EIA-Wide | EIA-Universal | ETSI |
| TMLCMOUNT**21** | ● | | ● | ● | ● | ● | |
| TMLPMOUNT**41** | ● | | ● | ● | | ● | |
| TMLPMOUNT**51** | ● | | ● | ● | ● | ● | |
| TMLPMOUNT**52** | | ● | ● | ● | ● | ● | ● |

| 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 |
| TMLPMOUNT**41** | ● | | 20 | 24 | | ● | |
| TMLPMOUNT**51** | ● | | 20 | 24 | ● | ● | |
| TMLPMOUNT**52** | | ● | 20 | 24 | ● | ● | ● |
| TMLP**SLIDE01**[†] | ● | | 22.5 | 28 or **34**[††] | | ● | |

[†]The **TMLPSLIDE01** kit contains server securing brackets.
[††]**34-inch** span requires the optional Accuride "Long Bracket" kit.

**TMLCMOUNT21**

The TMLCMOUNT21 kit mounts 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**

TMLPMOUNT**41/51/52** series mounts Communication Rack Mount Servers to 2-post or 4-post racks.

TMLPMOUNT**41** and TMLPMOUNT**51** are used for mounting servers on 19" wide racks. These racks are considered standard EIA (universal hole spacing) racks.

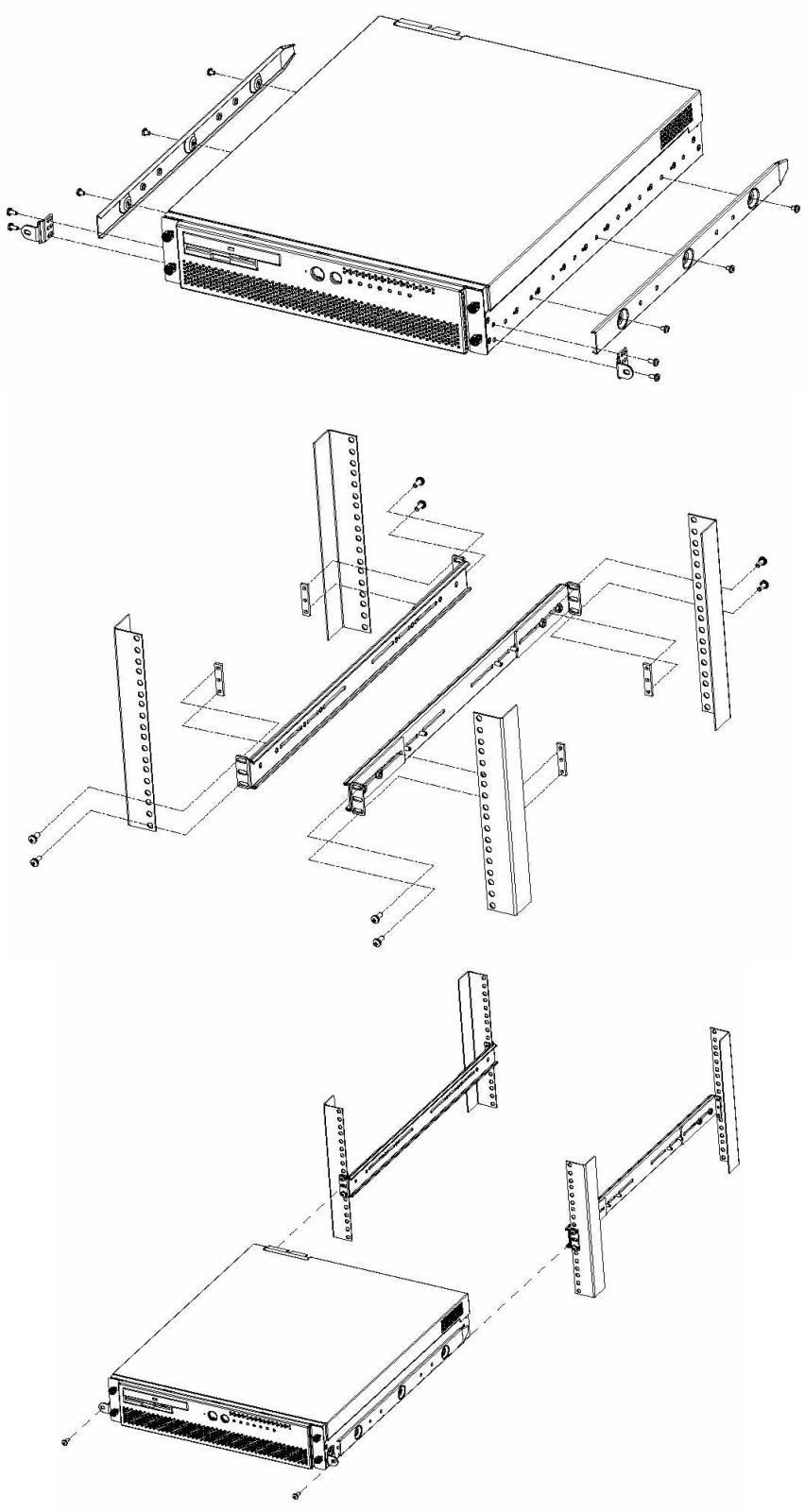
TMLPMOUNT**52** is used for mounting servers on 23" wide racks. These racks could be standard EIA (universal or wide hole spacing) or ETSI (European) racks.

TMLPMOUNT**41/51/52** 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"** |
| TMLPMOUNT**41** | No[1] | Plastic strips[2] | EIA-Universal | Not included | Side access[6] | Interference |
| TMLPMOUNT**51** | Yes | Xylan coating[3] | EIA-Wide or EIA-Universal[4] | Included[5] | Front access | No Interference |
| TMLPMOUNT**52** | Yes | Xylan coating[3] | EIA-Wide, EIA-Universal or ETSI | Included[5] | Front access | N/A |

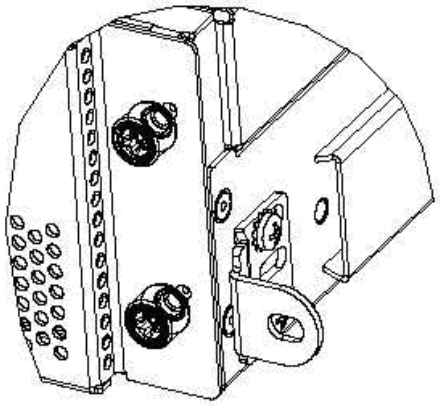
Notes:

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.

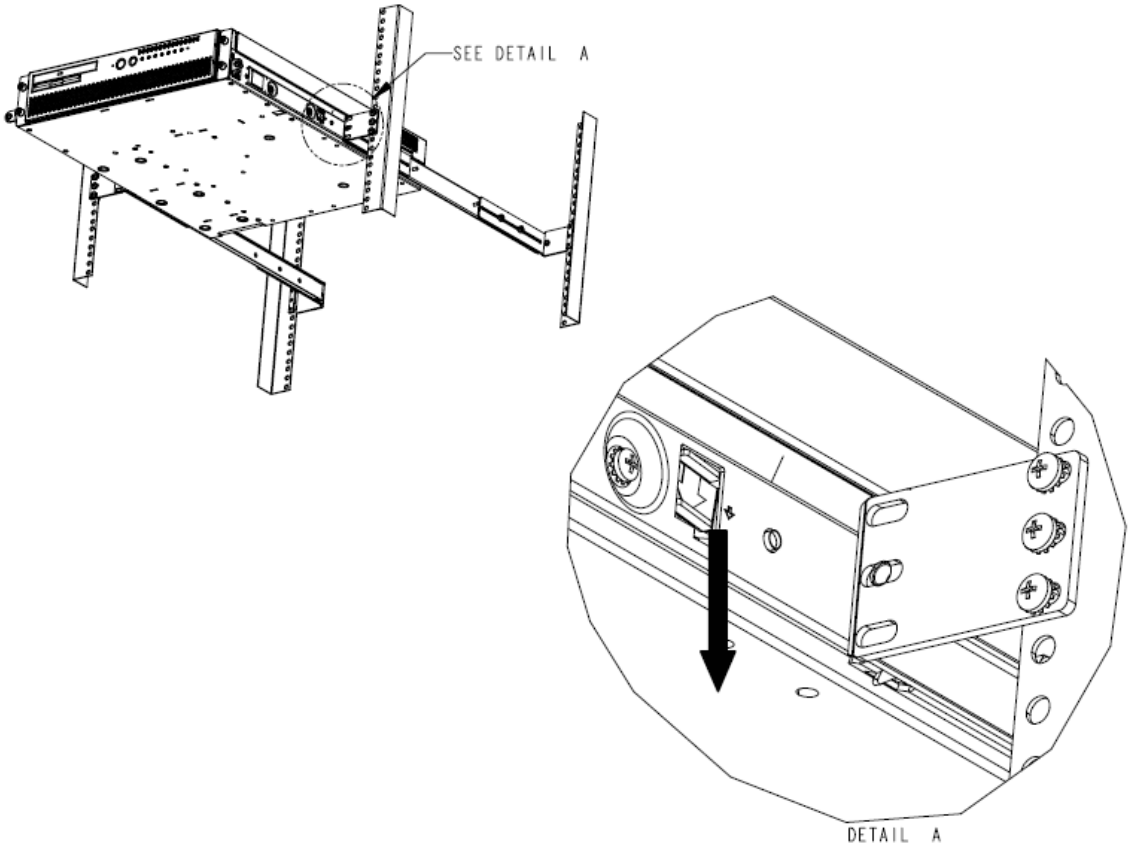


The diagrams above summarize the components and “slide-in rail-type” system of the TMLPMOUNT41. It can be adapted for a 2-post or 4-post installation.

The main difference between the TMLPMOUNT**41** and TMLPMOUNT**51/52** series is that the TMLPMOUNT**41** series uses a screw to lock the server in place via the Universal Mounting Bracket, whilst the TMLPMOUNT**51/52** series has an additional Slide Pull-Out Locking feature.



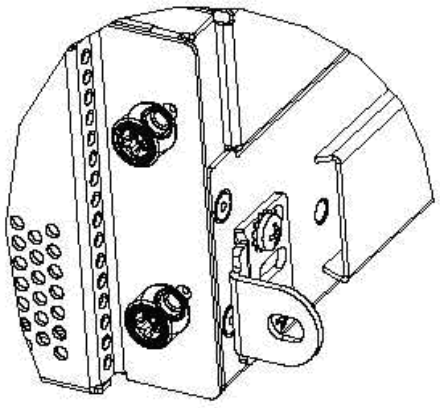
**The Universal Front Mounting Bracket on the TMLPMOUNT41**




**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.**