



S4U5.5 & W4U5.3

# 4U SERVERS & WORKSTATIONS

DESIGNED FOR  
MISSION-CRITICAL APPLICATIONS

DESIGNED IN-HOUSE IN FRANCE  
ADAPTABLE TO ALL REQUIREMENTS  
SUPERIOR QUALITY



DEVELOPED  
& DESIGNED  
IN FRANCE



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The S4U5.5 and W4U5.3 series are the high-performance solutions in APLUS Système Automation's rugged servers and workstations line.

## Performance, Reliability, and Ruggedness

The S4U5.5 and W4U5.3 are ideal for Industrial and Military applications that need exceptional performance, reliability, and ruggedness. Featuring two Intel® Xeon® processors, the S4U5.5 provides outstanding processing power in an ultra-short depth, making it perfect for rugged computing needs in harsh environments. The W4U5.3, in the same form factor, offers an exceptional performance and is designed to meet various application requirements.

## Scalable and Versatile

The S4U5.5 and W4U5.3 offer the ideal computing solution for Industrial, Heavy Industrial, or Military applications. Users can choose the options that best fit their needs, ensuring that the base configuration can be adapted to a wide range of requirements. Both models support up to seven full length and full height add-on cards, providing extensive expansion capabilities. Additionally, various power supply options are available to ensure compatibility with different environments.

## Designed for mission-critical applications

Our Servers and Workstations are built to perform reliably in harsh environments. Marine-grade 316L stainless steel chassis offers durability and resilience. The ventilation system with silent block-mounted fans optimize airflow and reduce noise. Support brackets secure all expansion cards, ensuring stability against shocks and vibrations. Additionally, honeycomb openings help our systems meet the highest standards for electrical and electromagnetic protection, including military requirements.

Three ruggedness grades – industrial, rugged, and military – are available to ensure optimal performance in any challenging environment:



### Industrial Grade

IS4U5.5 | IW4U5.3



### Rugged Grade

RS4U5.5 | RW4U5.3



### Military Grade

MS4U5.5 | MW4U5.3

## Certified add-on boards for Military grade systems:

- GPU nVidia Tesla L4
- Sunhillo PCE335: 4 high-speed serial lines supporting multiple protocols (X.25, HDLC, TA-LIB, LI6, etc.)
- Intel® Ethernet Adapters (E810)
- LSI MR-SAS9560: 12 Gbit/s throughput for enhanced system performance

# 4U Server & Workstation

## Grade-specific technological enhancements

	Industrial	Rugged	Military
Hard Disk Drives (HDDs)	No	No	No
Solid State Drives (SSDs)	Yes	Yes	Yes
Secure bonding for all internal connectors	No	Yes	Yes
Screws with enhanced thread locking	No	Option	Yes
Tropicalized electronics	No	Option	Yes
Shock & vibration-resistant electronic cards	No	No	Yes
Electronic Core on stiffener	No	No	Yes

## Environmental performances

	Industrial	Rugged	Military
Operating Temperature	0°C to +50°C (+32°F to 122°F)		-10°C to +50°C (+14°F to 122°F) MIL-STD-810G, Method 502.5, Procedure II, 4 hours MIL-STD-810G, Method 501.5, Procedure II, 12 hours
Storage Temperature	-20°C to +70°C (-4°F to +158°F)		-40°C to +75°C (-40°F to +167°F) MIL-STD-810G, Method 501.5, Procedure I, 4 hours
Operating Relative Humidity Range	5% to 90%, non condensing, at +35°C (+95°F)		95% RH at +40°C EN 60068-2-3, Test Cab: +40°C ±2°C (+104°F ±3.6°F), 95% RH, 10 days
Storage Relative Humidity Range	5% to 95%, non condensing, at +45°C (+113°F)		95% at +25°C to 55°C (+77°F to +131°F) EN 60068-2-30, Test Db, Variant 2: +25°C ±3°C to +55°C ±2°C (+71.6°F ±3.6°F to +127.4°F ±3.6°F), 95% ±4% RH, 6 cycles, 24 hours per cycle
Operational Atmospheric Pressure Range	650 hPa to 1100 hPa		550 hPa to 1100 hPa
Shock Resistance	15g for 11ms across 6 axes with SSD	20g for 11ms across 6 axes with SSD	20g for 18ms across 6 axes with SSD MIL-STD-810F, method 516.5, procedure I
Vibration Resistance	5 Hz to 100 Hz at 0.8g	5 Hz to 300 Hz at 0.8g	MIL-STD-167-1A No critical frequency under 100Hz Endurance @ 33Hz, 1g, 2 hours
Random Vibrations	5 Hz to 500 Hz at 0.8g	5 Hz to 500 Hz at 1g	MIL-STD-810F method 514-5, procedure I 5 Hz to 2000 Hz at 18 m/s <sup>2</sup> , 8 hours per axis, 2.5 (m/s <sup>2</sup> ) <sup>2</sup> /Hz max PSD
Acceleration Tolerance: Emergency Landing	5g		8g
Acceleration Tolerance: Transportation	3g		4.5g
EMC	CE Mark Class B (EN 61000-6-2, EN55022, EN 55024)		
Electrical Safety Standards	EN 62368-1		
Surge immunity	EN 61000-4-5, STANAG 1008		
Susceptibility to Radiated Interferences	-	-	NRS01, NRS02, NRS04 tests of AECTP-500
Radiated Electromagnetic Emissions	-	-	NRE01, NRE02 tests of AECTP-500
Susceptibility to Conducted Interferences	-	-	NCS01, NCS07, NCS08, NCS09, NCS11, NCS12, NCS13 tests of AECTP-500
Conducted Electromagnetic Emissions	-	-	NCE01, NCE02, NCE04, NCE05 tests of AECTP-500
External Enclosure Grounding	10 mΩ @ 1A	5 mΩ @ 5A	5 mΩ @ 10A
Internal Enclosure Grounding	-	-	10 mΩ @ 10A
Noise Level at Full Speed	66 dB(A)		

# Technical specifications

	S4U5.5	W4U5.3	
<b>Processor System</b>			
<b>Processor</b>	Up to 2x Intel® Xeon® Scalable 5 <sup>th</sup> generation processors supporting up to 52 cores per socket	Intel® Core™ i3/i5/i7/i9, Pentium® or Celeron® processors, 12 <sup>th</sup> & 13 <sup>th</sup> generation, supporting up to 24 cores	
<b>Supported processors (partial list)</b>	2x Intel® Xeon® Platinum 8571N (52 cores, 104 threads, 2.4 GHz) 2x Intel® Xeon® Gold 6538N (32 cores, 64 threads, 2.1 GHz) 2x Intel® Xeon® Gold 6530 (32 cores, 64 threads, 2.1 GHz) 2x Intel® Xeon® Gold 5520+ (28 cores, 56 threads, 2.2 GHz) 2x Intel® Xeon® Silver 4516Y+ (24 cores, 48 threads, 2.2 GHz) 2x Intel® Xeon® Silver 4510T (12 cores, 24 threads, 2.0 GHz) 2x Intel® Xeon® Bronze 3508U (8 cores, 8 threads, 2.1 GHz)	Intel® Core™ i9-13900TE (24 cores, 32 threads, 5.0 GHz) Intel® Core™ i7-13700TE (16 cores, 24 threads, 4.8 GHz) Intel® Core™ i5-13500TE (14 cores, 20 threads, 4.5 GHz) Intel® Core™ i3-13100TE (4 cores, 8 threads, 4.1 GHz) Intel® Pentium® Gold G7400TE (2 cores, 4 threads, 3.0 GHz) Intel® Celeron® G6900TE (2 cores, 2 threads, 2.4 GHz)	
<b>Memory</b>	16x DDR5 ECC Reg 4800 MHz, up to 4 TB	4x DDR5 ECC up to 4400 MHz, up to 128 GB	
<b>Chipset</b>	Intel® C741	Intel® R680E	
<b>Expansion Slot</b>		<b>W4U5.31</b>	<b>W4U5.32</b>
<b>PCI/PCIe</b>	5x PCIe 5.0 x16 low-profile 1x PCIe 5.0 x8 low-profile	1x PCIe 5.0 x16 2x PCIe 4.0 x4	2x PCIe 4.0 x16 3x PCIe 4.0 x4 1x PCIe 3.0 x4 (co-lay M.2 M key) 1x PCI
<b>M.2</b>	2x M.2 M key (PCIe 5.0 x4)	1x M.2 M key (PCIe 4.0 x4)	1x M.2 E key 1x M.2 A key (supports M2-OOB) 1x M.2 M key (PCIe x4 NVMe, SATA) 1x M.2 M key (co-lay PCIe 3.0 x4)
<b>Management</b>		<b>W4U5.31</b>	<b>W4U5.32</b>
<b>BMC</b>	AST2600 supports iKVM with dedicated LAN, IPMI & Redfish	AST2600 with dedicated LAN	No
<b>Data Storage</b>			
<b>Storage Drive</b>	3x 3.5" bays for up to 9x 2.5" SATA/SAS SSD or 6x NVMe SSD 1x 5.25" bay for up to 8 SSDs (SATA/NVMe)		
<b>General I/O</b>		<b>W4U5.31</b>	<b>W4U5.32</b>
<b>Ethernet</b>	2x 10Gb Base-T Ethernet	2x 2.5Gb Ethernet	4x 2.5Gb Ethernet
<b>Front I/O</b>	2x USB 3 4x status LED (Power, Disk, Ethernet, Redundant PSU Fault) 3x switches (Power On/Off, Reset, Redundant PSU Alarm Reset)		
<b>Rear I/O</b>	4x USB 3.0	4x USB 3.2	8x USB 3.2
<b>Display</b>	1x VGA	1x VGA 1x DVI-D 1x HDMI 2x DisplayPort	1x VGA 1x HDMI 2x DisplayPort
<b>Security &amp; Hardware Control</b>			
<b>Monitoring</b>	Optional Power Supply monitoring through PM Bus		
<b>TPM</b>	TPM 2.0		
<b>Security</b>	Top cover intrusion detection switch Watchdog / NMI		
<b>Power</b>	with optional PM Bus monitoring		
<b>Single AC</b>	350W / 550W / 1200W, 90V-264V AC High Efficiency*		
<b>Redundant AC</b>	2x 350W, 90V-264V AC High Efficiency 2x 1200W / 2x 800W / 2x 500W, 90V-264V AC High Efficiency*		
<b>Single DC</b>	460W, 18V-36V DC High Efficiency 460W / 500W / 550W 36V-72V DC High Efficiency		
<b>Mechanical</b>			
<b>Material</b>	Marine grade 316L stainless steel		
<b>Size</b>	Rackable 2U, 400mm (15.74") depth (EN 60297-3-100 compliant)		
<b>Weight</b>	Industrial & Rugged grade: 14.8 kg (32.62 lb) / Military grade: 16.2 kg (35.71 lb)		
<b>Software</b>			
<b>OS Support</b>	Microsoft Windows Server 2019 Microsoft Windows Server 2022 Linux Red Hat Enterprise 8.7 Linux Red Hat Enterprise 9.1 / 9.2 Oracle 8.7 SUSE Linux Enterprise Server 15 SP4 Ubuntu 22.04.1 Server VMWare ESXi 8.0	Microsoft Windows 10/11 IoT Enterprise (64 bits) Microsoft Windows Server 2022 Linux Red Hat (64 bits) Linux Ubuntu 20/21 (64 bits)	