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**CURTISS-
WRIGHT**

PacStar 451 Small Server Module



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The PacStar 451 Small Server Module provides a high-performance computing and virtualization platform for hosting one or more software applications or virtual appliances in a compact, quick setup, rugged form factor

Designed for in-theater computing, executive communications, vehicle-mount, early entry or forward operating base or remote deployments for military, Homeland Security, first responders, and commercial/enterprise users. The PacStar 451 meets size, weight, and power (SWaP) requirements unmatched by other COTS appliances.

The PacStar 451 is available with a wide variety of pre-loaded, pre-secured, and pre-qualified software applications or virtualized appliances appropriate for use in tactical C5ISR/EW applications. These include, but are not limited to:

- Virtualized and software defined networking and WAN, routing, switching
- VPN, TLS encryption, PKI
- Cybersecurity: firewalls, IDS, threat analytics, SIEM, NetFlow
- Unified communications
- Video encoding, transcoding and analytics
- Tactical cloud deployment
- Mobile device and wireless network management
- Hyper-convergence and storage
- General-purpose application hosting

The PacStar 451 is available in a variety of configurations with Xeon processing platforms in quad-core, hexa-core, octo-core, 12-core, and 16-core variants. Flexible storage and I/O options, including high-performance NVMe SSD storage and IPMI for remote and out-of-band management, let you select the right configuration for your needs. The PacStar 451 module footprint offers the best in small size, flexible power, and environmental ruggedness.

PacStar offers a wide array of system packaging options for the PacStar 400-Series, including briefcase style, transit case style, 19" rack mount, vehicle-mount, and backpack style transport options.



Key Features

- **A wide variety of appliance options** available including networking technologies from Aruba Networks, Cisco Systems, Forcepoint, Haivision, Information Security Corp, Juniper, Palo Alto Networks, Peraton Labs, and more
- **Intel Xeon processing** platforms in quad-core, hexa-core, octo-core, 12-core, and 16-core variants
- **Option for (5) GigE ports**, (2) of which are PoE enabled
- **Option for (2) SFP+ 10 GigE ports**
- **Option for IPMI** management
- **Option for up to 2x 4TB NVMe** drives
- **TPM 2.0**
- **Compact, snap-together design** enables quick expansion with other PacStar 400-Series modules for flexible packing and transport
- **KG-250X/XS compatible** power output port
- **Extensively tested** to MIL-STD-810/461 by independent labs. Reports available on request. For more information, see: pacstar.com/testing.
- **Continuous runtime** with hot-swappable batteries
- **Small, but powerful:** only 5.3" x 7.1" x 1.7" and 2.7 lbs.

Physical Specifications

- Dimensions 5.3" x 7.1" x 1.7"
- Weight 2.7 lbs.
- Patented snap-together connector provides DC pass-through for powering additional PacStar 400-Series products
- Low power processor variants feature a fanless design for quiet operation, higher reliability, and extended battery life
- High power processor variants offer maximum performance using two small fans, externally mounted to the heat sink, so sealing boundaries are not violated
- Operational temperature range (-20C to 60C), 128 GB version is (-20C to 50C)
- Extensively tested to MIL-STD-810/461 by independent labs. Reports available on request. For more information, see: pacstar.com/testing.

Power Specifications

- Wide range DC input, 10-35V
- World-wide AC power input (with adapter cable)
- Battery snap-together connectors for 1-2 each AN/PRC-152/148 snap on radio batteries; hot-swappable with 2+ hours runtime per battery
- Regulated clean 12V DC output, 20 watts (KG-250X/XS support)

Storage Options

- User removable single 2.5" SSD (7 mm), SATA 6 Gbps, up to 15.36 TB total
- User removable, single 2.5" SSD drive cartridge (dual 2TB M.2, 4TB total) – Xeon D and Xeon E models only
- Dual, user removable, 1.3" NVMe SSD drive cartridges (up to 4TB per cartridge, 8TB total), provides up to 6X faster performance than SATA SSDs – Xeon D-NR models only

CPU	Physical Cores	RAM	Disk	IO	TPM 2.0
Intel 5th Generation (Broadwell) Xeon D	8 (50W) / 12(55W) / 16 (55W)	Up to 128 GB	Up to 15.36 TB	D	Yes
Intel 5th Generation (Broadwell) Xeon D-NR (NVMe/IPMI)	8 (50W) / 12(55W) / 16 (55W)	Up to 128 GB	Up to 8 TB (2x 4 TB NVMe drives) and 1x 240GB Boot Drive	E	Yes
Intel 9th Generation (Coffee Lake) Xeon E	4 (25W) / 6 (45W)	Up to 96 GB	Up to 15.36 TB	A	Yes
Intel 5th generation (Broadwell) Xeon E3	4 (45W)	Up to 32 GB	Up to 15.36 TB	A, B	No

IO Options	Ethernet	USB	Display*	Serial
A	5	2 (1 Micro)	Mini-DisplayPort	RS-232 (RJ45)
B	3	4 (2 USB 3.1)	DisplayPort	RS-232 (RJ45)
D	2 SFP+ 10 GigE and 2 RJ45 10/100/1000	2	HDMI	RS-232 (RJ45)
E	2 SFP+ 10 GigE and 2 RJ45 10/100/1000 with IPMI	2	HDMI KVM over IP	Serial over LAN (IPMI)

*VGA Adapter included

SUPPORTED SOFTWARE APPLIANCES

Network Function Virtualization: Providing Routing, Switching, Network Optimization

Cisco Cloud Services Router 1000v and Catalyst 8000v
Cisco Integrated Services Router 5921
Aruba Virtual Mobility Controller (Wireless Infrastructure Controller)
Riverbed Virtual SteelHead (SATCOM/WAN performance optimization)

IP-Based Unified Communications: Voice, Video and Conferencing

BlackBerry SecuSUITE – Complete UC suite
Cisco Unified Communications Manager - Complete UC suite
REDCOM Sigma® - Complete UC suite
Haivision Kraken - Video transport/transcoding and optimization

Cybersecurity: Firewall, VPN, Network Intrusion Detection, Threat Analytics, and Network Defense

Aruba ClearPass – Authentication
Cisco ASA and Firepower – Firewall, IDS, analytics, VPN
Cisco Stealthwatch - Cyber Analytics
Elastic - SIEM
Forcepoint NGFW – Firewall, IDS, VPN
Juniper vSRX – Firewall, IDS and VPN
PacStar IQ-Core Crypto Manager – PKI, Crypto and SIEM
Palo Alto Networks – Firewall, IDS and VPN
Peraton Labs SecureIO
Red Hat Enterprise Linux with Certificate Services - PKI
Information Security Corp CertAgent - PKI
Microsoft Windows Server – Domain Control, Authentication, PKI

General Purpose Application Hosting

VMware ESXi, XEN, KVM, and Hyper-V Hypervisors
General-purpose Windows servers - can host a nearly unlimited array of applications (Exchange, SQL Server, Sharepoint, etc.)
Linux Services - Can host a nearly unlimited array of applications
DoD-specific mission command applications

Hyper-Convergence and Large Scale Storage

VMware vSAN
Riverbed Virtual SteelFusion Edge
NetApp ONTAP Edge
TrueNAS



PacStar products are covered by multiple patents. Additional patent(s) pending. See www.pacstar.com/patents for details.