ASUS WS C422 PRO/SE LGA2066 ECC DDR4 M.2 U.2 C422 ATX Motherboard for Intel® Xeon® W-Series Processors with SafeSlot, Dual Gigabit LAN and USB 3.1 Type A / C

- **Designed for 7th generation LGA2066 socket Intel® W-Series processors** with dual M.2, front panel USB 3.1 Gen2, Dual Intel® Gigabit LAN, support for ECC DDR4, Thunderbolt 3, Intel® VROC and Intel® Optane™ Memory compatibility

- **Next-gen transfer speeds** with up to 32Gbps dual M.2 and U.2, plus up to 10Gbps USB 3.1 Type-A and Type-C connections

- **Patent-pending SafeSlot** features an injection molding process that integrates metal framing for stronger, firmly anchored PCIe slots built for heavyweight GPUs, ideal for supporting 3-Way NVIDIA® SLI® or AMD® CrossfireX™

- **Industry-leading 8-channel HD audio** enhanced by ASUS exclusive Realtek S1220A featuring Crystal Sound 3, DTS Headphone:X and driven by Japanese capacitors for warm, immersive sound

- **AURA Sync RGB lighting via Addressable RGB header** features a nearly endless spectrum of colors with the ability to synchronize effects across an ever-expanding ecosystem of AURA Sync enabled products

- **Complete IT Infrastructure Management** with ASMB9 Out-of-band remote management and In-band ASUS Control Center providing a complete server management solution reducing IT operating costs with features like remote BIOS updating, monitoring multiple systems via mobile device, and one-click software updates/dispatching.
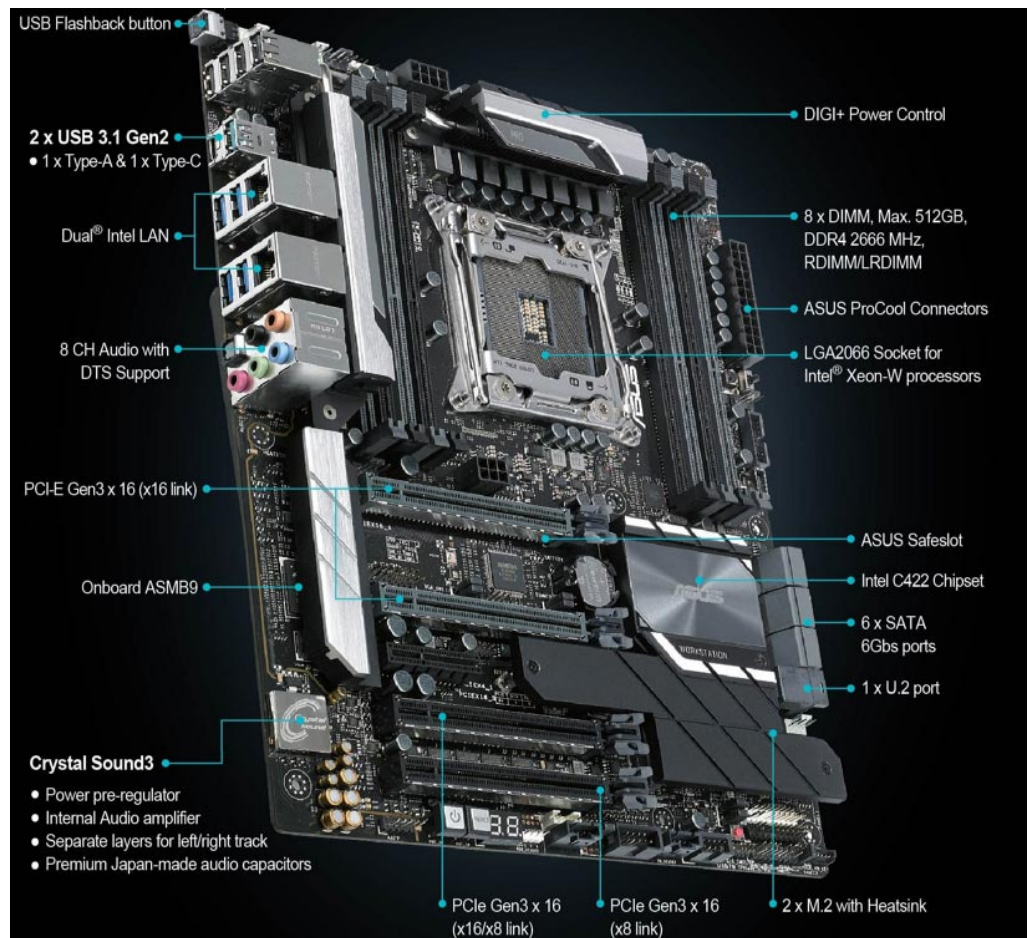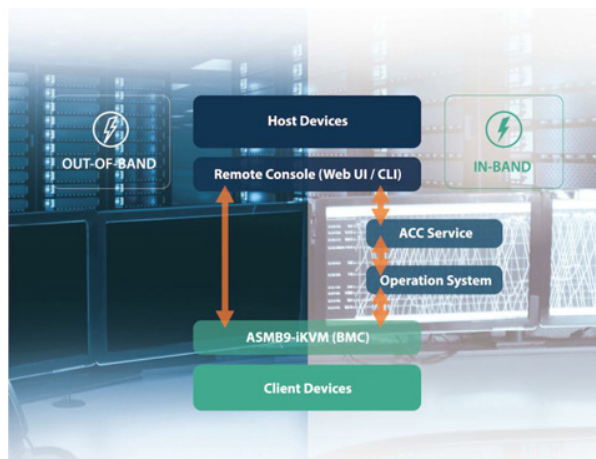
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USB Flashback button

2 x USB 3.1 Gen2
• 1 x Type-A & 1 x Type-C

Dual® Intel LAN

8 CH Audio with
DTS Support

PCI-E Gen3 x 16 (x16 link)

Onboard ASMB9

Crystal Sound3
• Power pre-regulator
• Internal Audio amplifier
• Separate layers for left/right track
• Premium Japan-made audio capacitors

DIGI+ Power Control

8 x DIMM, Max. 512GB,
DDR4 2666 MHz,
RDIMM/LRDIMM

ASUS ProCool Connectors

LGA2066 Socket for
Intel® Xeon-W processors

ASUS Safeslot

Intel C422 Chipset

6 x SATA
6Gbs ports

1 x U.2 port

PCIe Gen3 x 16
(x16/x8 link)

PCIe Gen3 x 16
(x8 link)

2 x M.2 with Heatsink

Comprehensive IT Management Software

WS C422 PRO/SE features an embedded iKVM module and is bundled with ASUS Control Center software to provide comprehensive and out-of-band management features for small and mid-size businesses:
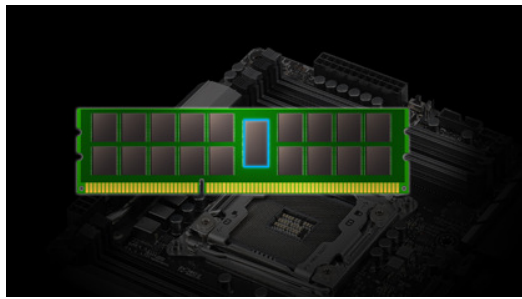
ASUS Control Center (ACC) is a centralized and integrated IT management platform for monitoring and controlling ASUS cor products, including servers, workstations and digital signage. ACC enables remote BIOS updates, monitoring of multiple systems via devices, and one-click software updates and dispatching, allowing easier server management for any IT infrastructure.

The embedded ASMB9-iKVM module supports remote BIOS updates, fans control, standalone KVM, video recording, and BSOD providing around-the-clock remote monitoring and diagnostics — even if the operating system is down or offline — through a user web-based graphical interface that works with all major browsers.

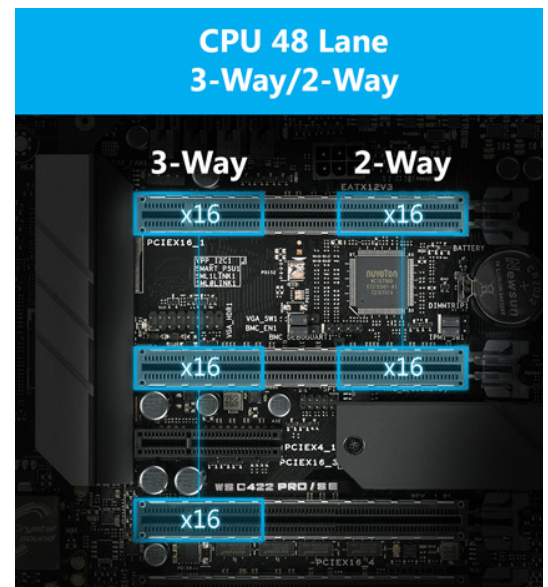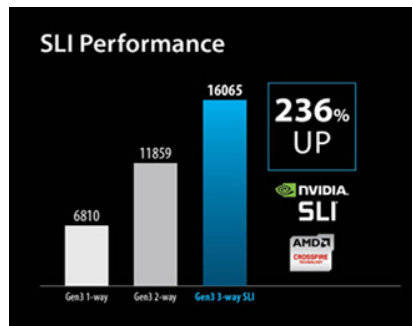## Powerful performance with Intel® Xeon® W processor and ECC memory

WS C422 PRO/SE supports server-grade Intel® Xeon® W series processors to deliver powerful, optimized performance in always-c

scenarios. Support for Error-Correcting Code (ECC) memory
automatic detection and repair of single-bit memory errors, r
the chance of system crashes and data corruption to ensure reli
responsive workstation performance.

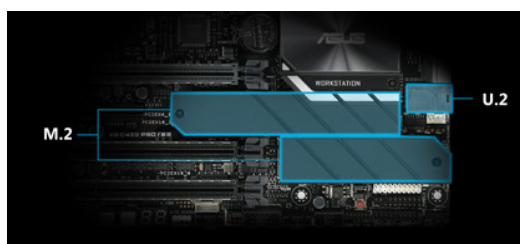## Up to 3-way Multi-GPU support with True PCIe Gen3 x 16 link

WS C422 PRO/SE features three true PCIe Gen 3 links with support
for two-way and three-way NVIDIA®SLI™ and AMD CrossFireX™
configurations to enable multiple GPU setups that harness the full
power of the latest graphics technologies to unleash maximum
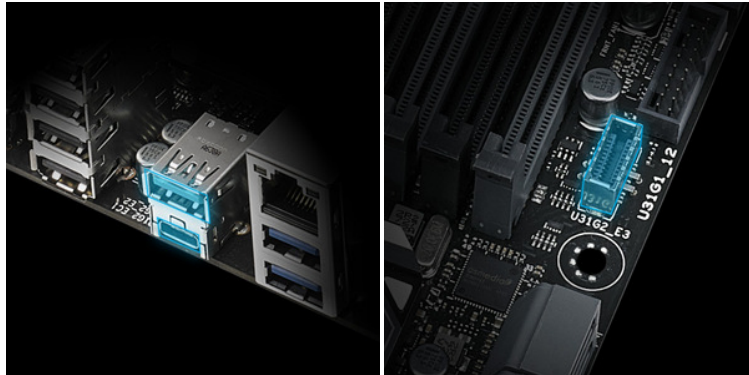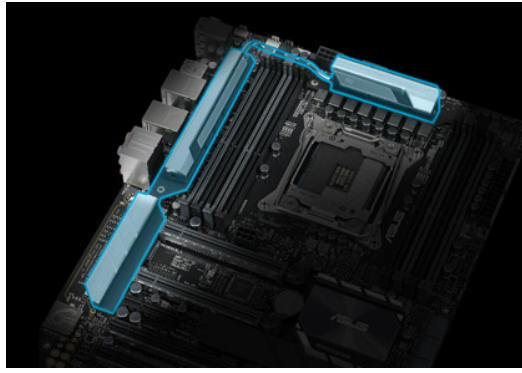graphics processing performance.

Ultra-fast storage and I/O options

Dual onboard M.2 & M.2 heatsink

WS C422 PRO/SE features dual onboard M.2 slots that suppo
22110-length SSDs and operate at PCIe Gen 3 x4 link spe
provide an abundant 32Gbps of bandwidth for up to 5.3X
performance than traditional SSDs. Both slots sit below th
chipset and are covered by a heatsink that reduces
temperatures by as much as 20°C, ensuring peak performanc
all scenarios. The revolutionary specification that lets you
scream at top speed. Simply attach your choice of dri
experience data-transfer speeds of up to 32Gbps — and fr
PCIe slot for another expansion card.

Ultra-efficient VRM Heatsink

Designed for the powerful Intel® Xeon® scalable processor with up
to 28 cores, WS C422 PRO/SE features a capable thermal design to
ensure maximum performance with no CPU throttling. Consisting of
an ultra-efficient VRM heatsink with a metal fin array design that
maximizes surface area for heat dissipation, plus two additional
heatsinks and a connecting heatpipe to further increase cooling
performance, this innovative thermal design ensures WS C422
PRO/SE is always ready to handle any task, no matter how
demanding.

10Gbps USB 3.1 onboard

With backward-compatible USB 3.1 Typ[...]
reversible USB 3.1 Type-C ports[...]
experience ultimate connection flexibi[...]
data-transfer speeds of up to 10Gbps [...]
as fast as USB 3.0.

- Front panel : 2 x USB 3.1
(Type A and Type C)
- Rear panel : 1 x USB 3.1

Supporting ThunderboltEX 3 card

WS C422 PRO/SE provides full support for a ThunderboltEX 3 card. An Intel®-certified Thunderbolt™ 3 add-on card enables breathtaking bi-directional speeds of up to 40Gbps through a single cable — up to 4X faster than other PC data-transfer protocols. Beyond sheer bandwidth, Thunderbolt™ 3 supports daisy-chaining up to six devices, utilizes a Type-C reversible connector for compatibility with the latest USB 3.1 Gen 2 Type-C devices, and meets USB Power Delivery specifications for fast, high-power charging of up to 36W. Learn More
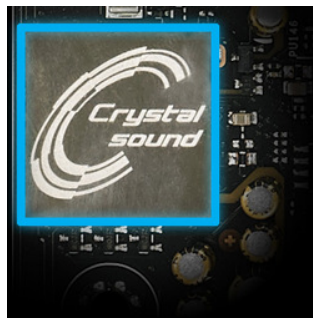
Intel® VROC

Unleash the WS C422 PRO/SE Virtual RAID on CPU (VROC) [...]
addition of an ASUS Hyper M.2 X16 card*, which allows you to a[...]
to four PCIe®3.0 x16 M.2 drives — for a total bandwidth [...]
128Gbps. PCH-based RAID arrays are bottlenecked by the 32G[...]
of the DMI bus. VROC obliterates that limit by allowing you t[...]
CPU PCIe lanes to configure a bootable RAID array that can trans[...]
at insane speeds.

*ASUS Hyper M.2 X16 card available separately for purchase.

Outstanding Audio for Content Creator

WS C422 PRO/SE has a unique audio codec designed in close collaboration with Realtek®. The Realtek®S1220A features an unprec[...]
120dB signal-to-noise ratio for the stereo line-out and an 113dB SNR for the line-in, providing pristine audio quality.

NOISE ISOLATION

Audio shielding
Ensures precision analog/digital separation and greatly reduced multi-lateral interference.
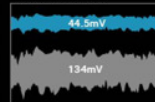
Separate layer for left and right tracks
Ensures that both channels deliver consistent, equal quality.

CLEAN POWER

Test of input power noise
(Lower is better)

44.5mV — ASUS
134mV — Other

Power pre-regulator
Reduces power-input noise to ensure consistent performance.

AUDIO ENJOYMENT

De-pop circuit
Reduces start-up popping noise to all audio outputs.

Audio amplifier
Produces the highest quality sound for headphone and speakers.

EMI protection
Prevents electrical noise to preserve audio quality.

Premium Japanese-made audio capacitors
Provides warm, natural and immersive sound with exceptional clarity and fidelity.

Right track

Left track

Immersive headphone audio

DTS Headphone:X™
Offers 3D surround-sound technology for incredibly rich audio
types of headphones.

Dual Intel® server-class Gigabit LAN

For more reliable networking, WS C422 PRO/SE features th
server-class dual Intel® Gigabit LAN ensuring lower CPU utiliza
temperatures outstanding performance as well as better sup
diverse operating systems. The dual Ethernet ports also support
which combines the network links to provide higher throug
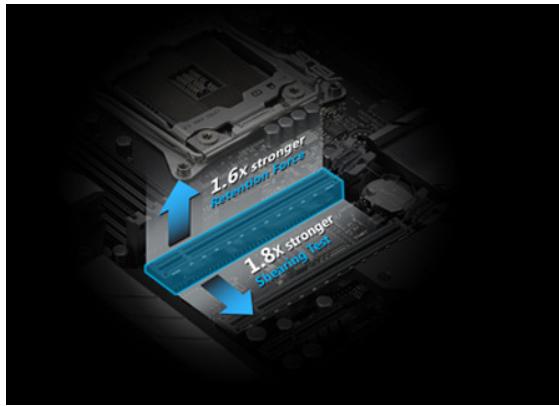redundancy in case of failure.

ASUS SafeSlot

SafeSlot is the PCIe slot reinvented by ASUS and engineered to provide superior retention and shearing resistance. Manufactured in a single step using a new insert-molding process, SafeSlot integrates the slot with fortifying metal for an inherently stronger slot, which is then firmly anchored to the PCB through additional solder points.

CPU	Intel® Socket 2066 Processors
	Supports Intel® 14 nm CPU
	Supports Intel® Turbo Boost Max Technology 2.0
	* The Intel® Turbo Boost Technology 2.0 support depends on the CPU types.
Chipset	Build in Intel® C422
Memory	8 x DIMM, Max. 512GB, DDR4 2666/2400/2133 MHz RDIMM, LR-DIMM Memory *1
	Quad Channel Memory Architecture
Multi-GPU Support	Supports NVIDIA® 3-Way SLI™ Technology
	Supports AMD 3-Way CrossFireX™ Technology
Expansion Slots	**48-Lane CPU-**
	2 x PCIe 3.0 x16 (x16 mode)
	2 x PCIe 3.0 x16 (Single at x16, dual at x8/x8)
	1 x PCIe 3.0 x4 (x4 mode)
Storage	1 x M.2 x4 Socket 3*2, with M key, type 2242/2260/2280/22110 storage devices support (PCIE 3.0 x 4 mode)
	1 x M.2 x4 Socket 3*3, with M key, type 2242/2260/2280 storage devices support (both SATA & PCIE mode)
	1 x U.2 connector*2
	6 x SATA 6Gb/s port(s)
	Support Raid 0, 1, 10
	Intel® Rapid Storage Technology Enterprise supports
	Intel® Virtual RAID (VROC) support for CPU RAID
LAN	Intel® I210-AT, 2 x Gigabit LAN Controller(s)
Audio	Realtek® ALC S1220A 8-Channel High Definition Audio CODEC featuring Crystal Sound 3
	- Power pre-regulator reduces power input noise to ensure consistent performance
	- Impedance sense for front and rear headphone outputs
	- Internal audio Amplifier to enhance the highest quality sound for headphone and speakers
	- Supports : Jack-detection, Multi-streaming, Front Panel Jack-retasking, Front Panel MIC Jack-retasking
	- High quality 120 dB SNR stereo playback output (Line-out at rear) and 113 dB SNR recording input (Line-in)
	- Supports up to 32-Bit/192kHz playback *4
	Audio Feature :
	- DTS Connect
	- DTS Headphone:X
	- Optical S/PDIF out port(s) at back panel
	- Audio Shielding: Ensures precision analog/digital separation and greatly reduced multi-lateral interference
	- Premium Japanese-made audio capacitors: Provide warm, natural and immersive sound with exceptional clarity and fidelity
	- Unique de-pop circuit: Reduces start-up popping noise to audio outputs

Separate layer for left and right track, ensuring both sound deliver equal quality

USB Ports

Intel® C422 Chipset :
6 x USB 3.1 Gen 1 port(s) (4 at back panel, , 2 at mid-board)
Intel® C422 Chipset :
6 x USB 2.0 port(s) (4 at back panel, , 2 at mid-board)
ASMedia® USB 3.1 Gen 2 controller :
2 x USB 3.1 Gen 2 port(s) (2 at back panel, , Type-A + USB Type-C^{TM})
ASMedia® USB 3.1 Gen 2 controller :
1 x USB 3.1 Gen 2 front panel connector port(s)

Special Features

ASUS 5X Protection III :
- ASUS SafeSlot Core: Fortified PCIe Slot prevents damage
- ASUS LANGuard: Protects against LAN surges, lightning strikes and static-electricity discharges!
- ASUS Enhanced DRAM Overcurrent Protection - Short circuit damage prevention
- ASUS ESD Guards - Enhanced ESD protection
AURA :
- Aura RGB Strip Headers
- Aura Lighting Effects Synchronization with compatible ASUS ROG devices
- Aura Addressable Strip Header(s)
ASUS Exclusive Features :
- MemOK!
- Ai Charger+
- Onboard Button : Power/Reset
- Turbo LAN
DIGI + Power Control :
- CPU Power: Digital 8-phase power design
DIGI + Power Control :
- DRAM Power: Digital 2-phase power design
ASUS Quiet Thermal Solution :
- Stylish Fanless Design with M.2 Heat-sink solution
ASUS EZ DIY :
- ASUS USB BIOS Flashback
ASUS Q-Design :
- ASUS Q-Shield
- ASUS Q-Code
- ASUS Q-LED (CPU, DRAM, VGA, Boot Device LED)
- ASUS Q-Slot
- ASUS Q-DIMM
M.2 and U.2 Onboard (The Latest Transfer Technology with up to 32Gb/s Data-transfer Speeds for M.2 and U.2)
Asus Control Center (ACC) IT management software supported
Intel® Virtual RAID on CPU (VROC) ready
Thunderbolt 3 support

Back I/O Ports

2 x LAN (RJ45) port(s)
2 x USB 3.1 Gen 2 Type-A + USB Type-C^{TM},
4 x USB 3.1 Gen 1 (blue) ,
4 x USB 2.0 (one port can be switched to USB BIOS Flashback)
1 x Optical S/PDIF out
1 x USB BIOS Flashback Button(s)
1 x 8-channel Audio I/O

Internal I/O Ports

1 x Aura Addressable Strip Header(s)
1 x AAFP connector
1 x Aura RGB Strip Headers
1 x USB 3.1 Gen 1(up to 5Gbps) connector(s) support(s) additional 2 USB 3.1 Gen 1 port(s)
1 x USB 2.0 connector(s) support(s) additional 2 USB 2.0 port(s)
1 x M.2 Socket 3 with M key, type 2242/2260/2280 storage devices support (SATA & PCIE 3.0 x 4 mode)
1 x M.2 Socket 3 with M key, type 2242/2260/2280/22110 storage devices support (PCIE 3.0 x 4 mode)
1 x TPM header
6 x SATA 6Gb/s connector(s)
1 x VROC_HW_Key
2 x CPU Fan connector(s)
1 x AIO_PUMP connector
1 x Thunderbolt header(s)
1 x 24-pin EATX Power connector(s)
2 x 8-pin ATX 12V Power connector(s)
1 x 5-pin EXT_FAN(Extension Fan) connector

1 x MemOK! button(s)
1 x Thermal sensor connector(s)
1 x Power-on button(s)
1 x Reset button(s)
1 x Clear CMOS button(s)
1 x U.2 connector
3 x System panel connector
1 x Front fan
1 x Rear fan
1 x COM port header
1 x Aspeed VGA header
1 x USB 3.1 Gen 2 front panel connector
1 x CPU_OV jumper
1 x PUMP Fan connector
1x 6-pin ATX 12V Power connector

BIOS

CrashFree BIOS 3
EZ Flash3
F11 EZ Tuning Wizard
ASUS UEFI BIOS EZ Mode
Multi-language BIOS

Form Factor

ATX Form Factor
12 inch x 9.6 inch (30.5 cm x 24.4 cm)

Weight

Color Box(3-in-1)
Net Weight: 4.86kg
Gross Weight: 7.49kg

Bulk Pack(5-in-1)
Net Weight: 7.2kg
Gross Weight: 8.9kg

Note

*1 Memory capacity supported depends on both CPU installed and Memory
*2 Bandwidth is shared between M.2_2 and U.2.
*3 SATA Bandwidth is shared between M.2_1 and SATA6G_1
*4 Due to limitations in HAD bandwidth, 32-Bit/192kHz is not supported for
8-channel audio. 32-Bit/192kHz is only available under Windows® 10