VELOCITY MS-100

VIPERA

MV Concept

Where Technology Meets Productivity.

CORSAIR SUPERMICRO intel NVIDIA PNY COMINO

CONCEPT

- 2 Systems inside 1 Chassis
- Ultra low temperature (all Systems are Liquid Cool)
  - GPU Liquid Cool (max 50 Deg Celsius)
  - CPU Liquid Cool (Max 54 Deg Celsius)
- Cooling loop independent per System:
  - Big System = Open Loop with Quick Disconnect = Close Loop
  - Small System = Close Loop (corsair iCUE H100i Elite CAPELLIX Liquid CPU Cooler)

CONCEPT

- 2 Systems inside 1 Chassis
  - Direct Connection Between the 2 Systems (no network Bottleneck)
  - Concurrent Dual Os Possible compare to Standard Workstation
  - In Vdi that System can Host up to 60 Users Which is 26W/Users = Best Performance / Watt
  - Flexible Pricing and Evolutive configuration
  - Easy Maintenance thanks to the Quick Disconnect.

CHASSIS PRESENTATION

Component	Specs
Case Dimension	800mm x 505mm x 800mm
Form Factor	FULL TOWER
Case Windowed	Tempered Glass
Case Material	Steel, Aluminum, Tempered Glass
PSU	ATX
COOLING	480mm DUAL front

ARCHITECTURE BIG SYSTEM

Component	Specification	Qty
MOTHERBOARD	X12SPA-TF	1
CPU	Intel® Xeon® W-3375 Processor	Up to 38 cores
MEMORY	16 Samsung 32GB	Up to 4TB
STORAGE	MP600 PRO XT M.2 NVMe PCIe Gen. 4 x4 SSD	Up to 32TB
GPU	Up to 4: • A100 80GB • Or A40 48GB • Or RTX A6000 48GB	
PSU	AX1600i Digital ATX Power Supply	1600 Watt
COOLING	1Radiator Hydro X Series XR7 Water Cooling	480mm x 120mm

ARCHITECTURE SMALL SYSTEM

Component	Specification	Qty
MOTHERBOARD	ROG STRIX Z690-I GAMING WIFI	1
CPU	Intel® Core™ i9-12900KS Processor	16 CORES
MEMORY	2 Corsair DDR5	64GB
STORAGE	MP600 PRO XT M.2 NVMe PCIe Gen. 4 x4 SSD	Up to 16TB
GPU	• A40 48GB • OR RTX A6000 48GB	
PSU	SF Series™ SF750	750 Watt
COOLING	iCUE H100i ELITE CAPELLIX Liquid CPU Cooler	

MOTHERBOARD BIG SYS. PRESENTATION

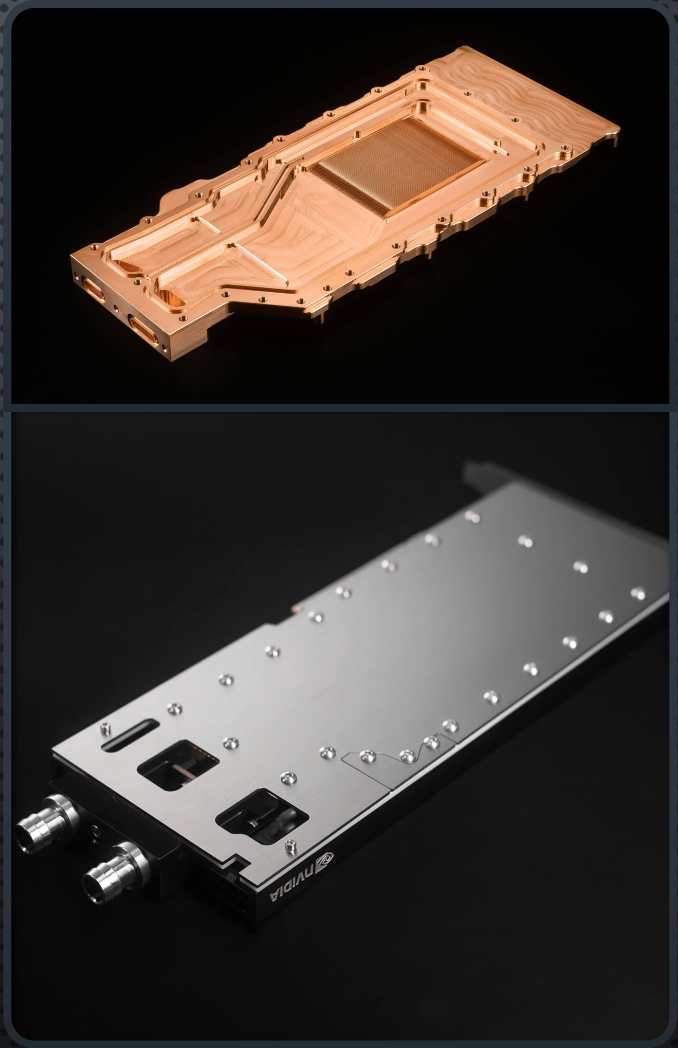
X12SPA-TF	SPECS
Chipset	Intel® C621A
Memory	Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz Up to 4TB Intel® Optane™ Persistent Memory, DDR4-3200MHz, in 16 DIMM slots
M.2	M.2 Interface: 4 PCI-E 4.0 x4 M.2 Form Factor: 2260/2280/22110 M.2 Key: M-Key M.2 support to RAID 0,1, 5, 10, VROC key is required for RAID.
CPU	Intel W-3375

MOTHERBOARD SMALL SYS. PRESENTATION

ROG STRIX Z690-I	SPECS
Chipset	Intel® Z690 Chipset
Memory	2 x DIMM, Max. 64GB
Capacity	Total supports 2 x M.2 slots and 4 x SATA 6Gb/s ports*
CPU	Intel® Core™ i9-12900KS Processor 24 Threads @ 5.2GHz

GPU PRESENTATION

GPU Specifications	**A100 Liquid cool Up to 4**
GPU Memory	80 GB HBM2e
GPU Memory Bandwidth	1,935GB/s
TDP	300W
TEMPERATURE	30o-40oC



HTTPS://WWW.NVIDIA.COM/CONTENT/DAM/EN-ZZ/SOLUTIONS/DATA-CENTER/A100/PDF/NVIDIA-A100-DATASHEET-NVIDIA-US-2188504-WEB.PDF

GPU COOLING PRESENTATION BIG SYSTEM

GPU Specifications	**A100 Liquid cool Up to 4**
Comino GPU WCB for NVIDIA A100 80Gb, Cu-Steel	GPU Manufacturer: NVidia Compatible GPU Model: NVidia A100 TESLA Waterblock Materials: Copper, Stainless Steel, Plastic, NBR Backplate Materials: Aluminum Thread Adapter Materials: POM, Stainless Steel
Key Features	• Designed for NVIDIA A100 80Gb • Fullcover Waterblock cools the GPU, GDDR, and the VRM altogether • Thermally-tested and quality guaranteed. Low ΔTo between the chip and inlet coolant temperatures is assured Only non-corrosive materials (Copper, Stainless Steel, Plastic) Heat dissipation increased up to 10 times as compared to the air-cooling Single PCI Design Fittings on the Back – Server Ready 90° Adapter Option – Workstation Ready

https://www.comino.com/products/gpu-waterblock-for-nvidia-a100-80gb

GPU PRESENTATION SMALL SYSTEM

GPU Specifications	**RTX A6000**
GPU Memory	80 GB HBM2e
GPU Memory Bandwidth	1,935GB/s
TDP	300W
TEMPERATURE	30o-40oC

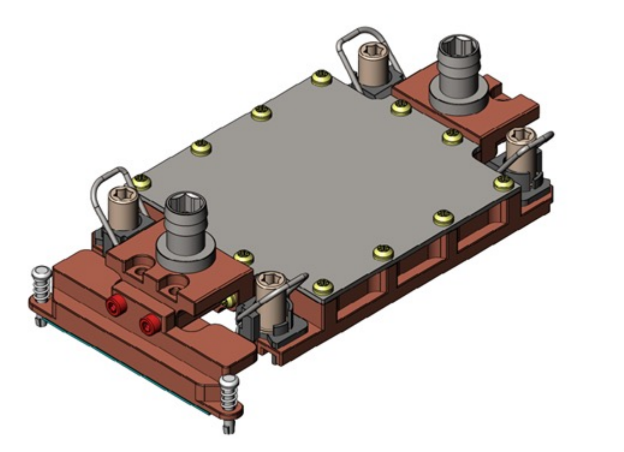
HTTPS://WWW.NVIDIA.COM/CONTENT/DAM/EN-ZZ/SOLUTIONS/DATA-CENTER/A100/PDF/NVIDIA-A100-DATASHEET-NVIDIA-US-2188504-WEB.PDF

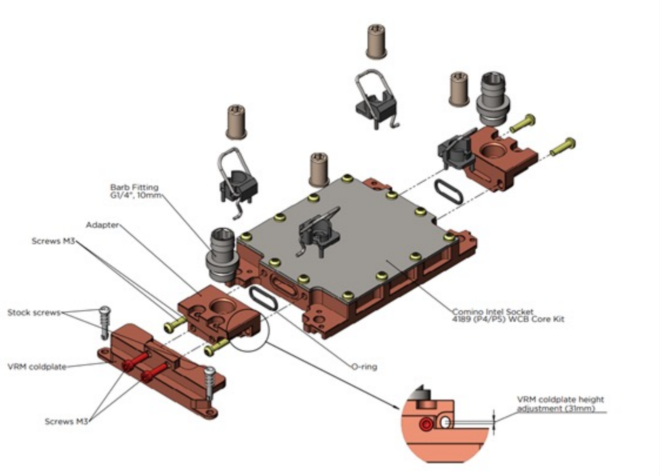
CPU BIG SYS. PRESENTATION

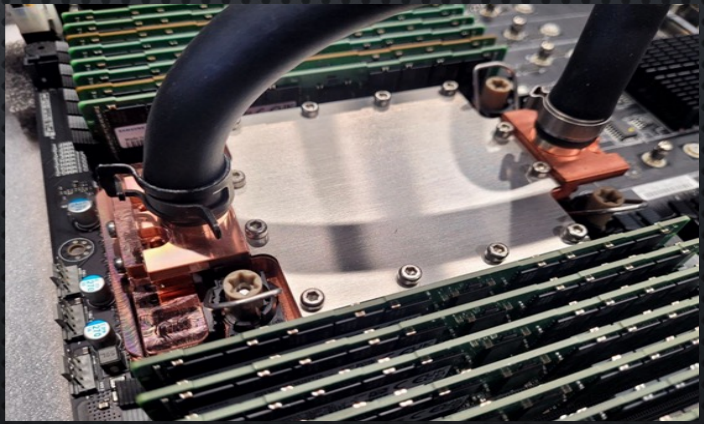
CPU Specifications	W-3375
Total Cores	38
Total Threads	76
Max Turbo Freq	4 GHz
Processor Base Freq	2.5 GHz
Cache	57 MB
TDP	270 W

CPU COOLING BIG SYS. PRESENTATION

CPU Specifications	W-3375
Key Features	• High quality liquid cooling of the CPU and the VRM modules on the motherboard • Thermally-tested and quality guaranteed. Low ΔT between the chip and inlet coolant temperatures is assured • Only non-corrosive materials (Copper, Stainless Steel, Plastic) • Heat dissipation increased up to 10 times as compared to the air-cooling • Use the same CPU waterblock with different motherboards – unique design for the CPU waterblocks with interchangeable VRM coldplates • Level-varied VRM coldplates to achieve perfect contact patch and heat transfer • Slim waterblock design can be used in 1U servers.







https://www.comino.com/products/cpu-waterblock-for-socket-lga-4189-4677-3rd-4th-generation-intel-r-xeon-r

CPU SMALL SYS. PRESENTATION

CPU Specifications	I9-12900KS
Total Cores	16
Total Threads	24
Max Turbo Freq	5.50 GHz
Processor Base Freq	2.5 GHz
Cache	30 MB
TDP	150 W

https://ark.intel.com/content/www/us/en/ark/products/225916/intel-core-i912900ks-processor-30m-cache-up-to-5-50-ghz.html

CPU SMALL SYS. COOLING PRESENTATION

Cooling Specifications	iCUE H100i ELITE CAPELLIX Liquid CPU Cooler
Cold Plate Material	Copper
Radiator Material	Aluminum
Radiator Dimensions	277mm x 120mm x 27mm
Fan Dimensions	120mm x 25mm
Fan Speed	2400 RPM

https://www.corsair.com/us/en/Categories/Products/Liquid-Cooling/iCUE-ELITE-CAPELLIX-Liquid-CPU-Cooler/p/CW-9060046-WW#tab-tech-specs

USAGE

HIGH PERFORMANCE COMPUTING

VDI (VIRTUAL DESKTOP INFRASTRUCTURE)

SOFTWARE DEVELOPMENT SYSTEM

AI

HIGH PERFORMANCE COMPUTING

- Fsatest 2 in 1 HPC Workstation in the World
- Small System (pre and post processing)
  - https://www.youtube.com/watch?v=akUvpkQtep4
  - https://www.youtube.com/watch?v=lXBpACx2Gvw
  - https://www.ansys.com/blog/unleashing-the-full-power-of-gpus-for-ansys-fluent-part-2?campaignid=7013g000000Y8tzAAC&utm_campaign=social-organic&utm_source=linkedin&utm_medium=fluids&campaignID=7013g000000Y8tzAAC&utm_content=digital_fluids_oktopost-Ansys+Fluids_oktopost-Fluids+%28General%29
  - https://blogs.sw.siemens.com/simcenter/les-on-gpus/
- Big System Computing

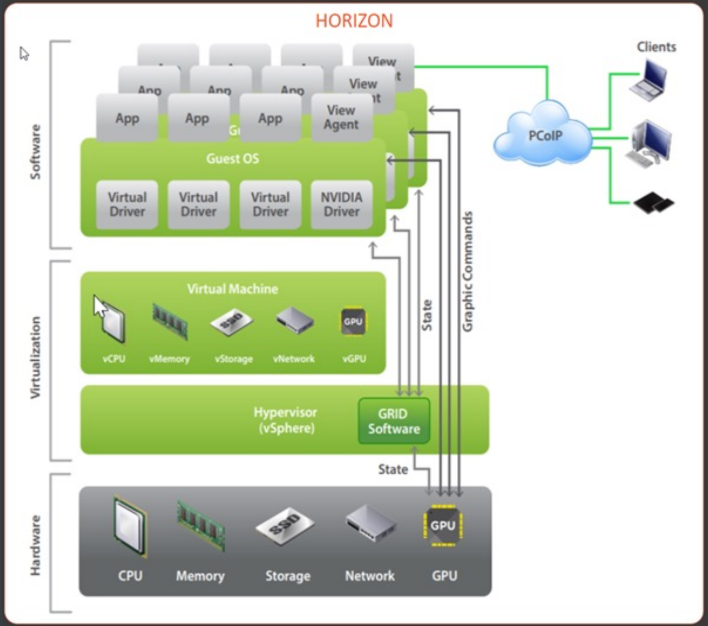
VIRTUAL DESKTOP INFRASTRUCTURE

- Virtual desktops offer centralized management
- lower maintenance costs
- improved security
- Up to 32 Concurrent Users
- Best Price / performance per Watts

https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/techpaper/vmware-horizon-6-view-virtual-desktop-3d-graphics-reference-architecture.pdf

VIRTUAL DESKTOP INFRASTRUCTURE

- UP TO 32 CONCURRENT USERS
- 500GB / USERS
- 32GB MEMORY / USERS
- 1TB MEMORY
- 2 * 8TB + 2*4TB
- FOR CALCULATION
- TOTAL PRICE / 32



ARTIFICIAL INTELLIGENCE DATA CENTER IN A BOX

- MS-100 IS A DEDICATED RESOURCE THAT CAN PLUG IN ANYWHERE AND PROVIDE MAXIMUM PERFORMANCE FOR MULTIPLE, SIMULTANEOUS USERS ANYWHERE IN THE WORLD.
- MS-100 BRINGS AI SUPERCOMPUTING TO DATA SCIENCE TEAMS, OFFERING DATA CENTER TECHNOLOGY WITHOUT A DATA CENTER OR ADDITIONAL IT INFRASTRUCTURE.
- IT'S A FULLY OPTIMIZED SOFTWARE STACK WITH POWERFUL PERFORMANCE

DATA CENTER PERFORMANCE ANYWHERE!

- AI Supercomputing for Data Science Teams
- Data Center Performance without the Data Center
- An AI Appliance You Can Place Anywhere
- ✓ Bigger Models, Faster Answers

ARTIFICAL INTELLIGENCE TRAINING

MS-100 IS DESIGNED TO DELIVER THE FASTEST TIME TO SOLUTION ON COMPLEX AI MODELS COMPARED WITH PCIE-BASED WORKSTATIONS.

ARTIFICAL INTELLIGENCE INTERFERENCE

MS-100 IS SUITED FOR TESTING INFERENCE PERFORMANCE AND RESULTS BEFORE DEPLOYING IN THE DATA CENTER. USING INTEGRATED TECHNOLOGIES THAT ACCELERATE INFERENCE WORKLOADS AND PROVIDE THE HIGHEST THROUGHPUT AND REAL-TIME RESPONSIVENESS NEEDED TO BRING AI APPLICATIONS TO LIFE.

DATA ANALYTICS

THE MORE DATA YOU HAVE, THE MORE YOU CAN LEARN. WITH MS-100, DATA SCIENCE TEAMS CAN DERIVE ACTIONABLE INSIGHTS FROM THEIR DATA FASTER THAN EVER BEFORE.

HIGH-PERFORMANCE COMPUTING

FOR DEVELOPERS, THE MS-100 PROVIDES AN IDEAL PLATFORM FOR TESTING SCIENTIFIC WORKLOADS BEFORE DEPLOYING ON THEIR HPC CLUSTERS, ENABLING THEM TO DELIVER BREAKTHROUGH PERFORMANCE ANYWHERE.

PERFORM AND INNOVATE FASTER

High-performance training accelerates your productivity, which means faster time to insight and faster time to market.