

CHECK LIST HIGH PERFORMANCE COMPUTER CLUSTER

General Requirements	Comply / Not Comply
Bidder Information Form (Formulario de Información sobre el Oferente), page 48	
Offer form (Formulario de la oferta), pages 50-52 – Fill in, include the price without discount in item e) and if you have any discount write it in item f)	
Price List: Goods of origin outside Colombia to be imported (Lista de Precios: Bienes de origen fuera de Colombia a ser Importados), page 54	
Price List: Goods of origin outside of Colombia Previously Imported (Lista de Precios: Bienes de origen fuera de Colombia Previamente Importados), page 55 – (If the goods you are offering are already imported in Colombia)	
Offer Maintenance Statement (Declaración de Mantenimiento de la Oferta), pages 60-61	
Manufacturer's authorization (Autorización del fabricante), page 63	
Section VI. Fraud and Corruption (Fraude y Corrupción) page 66. – Sign it.	
List of Goods and Delivery Plan (Lista de Bienes y Plan de Entregas), page 69 – Fill in the last box with the delivery date of the Cluster	
Technical specifications (must be included as a document in which you indicate that your technical specifications comply)	
Certificate of existence and legal representation of the chamber of commerce or its equivalent	
List of clients and their corresponding contacts (preferably in Colombia and Latin America)	

Technical specifications

General Requirements	Comply / Not Comply
Offer a minimum of 5 GPU compute nodes and 15 CPU compute nodes in accordance with the technical specifications described in this document.	
Express the price of your offer in any currency fully convertible to Colombian pesos.	
The system offered must be previously assembled, tested and characterized in accordance with the parameters defined in this document.	
Deliver detailed documentation of the solution and its components, including connection diagrams, operation manuals, and reference manuals.	
Deliver a "turnkey" system: hardware, operating system, drivers and programs / libraries for basic operation of the cluster as an HPC.	
Submit the offer with a three (3) year warranty, with response times of 10 business days for the replacement of parts, diagnosed a priori and remotely or on site, by personnel from the Omicas program and the supplier.	

Include with the offer a kit of spare parts.		
Storage system (Fileserver)		
Minimum 2 processors of 12 cores each.		
Minimum 256GB of RAM.		
2 low latency solid state drives (SSD) with a minimum of 240GB each for the operating system.		
Disk Bank with the possibility of expansion to 1PB (without additional controllers and with free and available bays to add more disks to complete 1PB in the future)		
*	Disk bank with a minimum installed capacity of 500TB using 7.2K RPM SAS disks and low latency	
*	Additional 10TB with low latency Solid State Drives (SSD).	
1 Infiniband EDR network port		
1 1Gb Ethernet network port		
Dedicated out-of-band management interface		
Dual power supply and C-14 cables		
Certified hardware for the Linux operating system (eg CentOS or Ubuntu).		
Latest firmware installed.		
Linux operating system and file server software installed and configured with a ZFS manager (configured for storage by pools, copy-on-write, snapshotting, automatic data integrity verification and repair).		
Frontend node		
2 CPUs of at least 16 cores each.		
8GB of RAM per CPU core		
2 low latency solid state drives (SSD) with a minimum of 240GB each for the operating system.		
Internal CD-RW / DVD-ROM combo.		
1 Infiniband EDR network port		
Minimum 2 1Gb Ethernet network ports (preferably 4 ports)		
Dedicated out-of-band management interface		
Dual power supply and C-14 cables		
Certified hardware for the Linux operating system (eg CentOS or Ubuntu).		
Latest firmware installed.		
Nodos de cómputo CPU		
Minimum 2 CPUs with a minimum of 16 cores each.		
Minimum 8 GB of RAM per CPU core.		
2 low latency solid state drives (SSD) with a minimum of 240GB each for the operating system.		
2 drives of 2TB each of 7.2K RPM and low latency		

1 Infiniband EDR network port	
1 1Gb Ethernet network port	
Dedicated out-of-band management interface	
Dual power supply and C-14 cables	
Certified hardware for the Linux operating system (eg CentOS or Ubuntu).	
Latest firmware installed	
PXE boot capability	
Nodos de cómputo GPU	
Minimum 2 CPUs, with a minimum of 16 cores each.	
Minimum 8 GB of RAM per CPU core.	
4 graphics cards (GPUs) nVidia RTX6000 (or better in performance), handling a ratio of maximum 2 graphics cards per CPU. (The minimum total number of nVidia RTX6000 GPUs will be 20. If you want to offer nodes with fewer nVidia RTX6000 GPUs, you must offer the number of nodes necessary to guarantee the minimum of 20 GPUs, without altering the other specifications per GPU node, eg 6 nodes with 3 GPUs and 1 node with 2 GPUs, 10 nodes with 2 GPUs, etc.)	
2 low latency solid state drives (SSD) with a minimum of 240GB each for the operating system.	
2 drives of 2TB each of 7.2K RPM and low latency	
1 Infiniband EDR network port	
1 1Gb Ethernet network port	
Dedicated out-of-band management interface	
Dual power supply and C-14 cables	
Certified hardware for the Linux operating system (eg CentOS or Ubuntu).	
Latest firmware installed	
PXE boot capability	
NVIDIA certification of compatibility with the offered hardware	
CUDA libraries and NVIDIA tools installed, tested and shipped on DVD.	
Infiniband switch	
Infiniband EDR switch with “Non-blocking” ports for the connection between all the elements of the system, including the frontend node, the computing nodes (CPU and GPU) and the storage system.	
Minimum 36 ports (licensed).	
Include all cables, interface cards and other required items	
Include redundant power supply	
Include C-14 power cables.	
Ethernet 1Gb switch	

Minimum 36 ports available.	
Include all cables, interface cards and other required items	
Include C-14 power cables.	
Racks	
2 to 3 racks with 30A PDUs per rack with NEMA L6-30P connectors or 2 to 3 racks with 50A PDUs per rack with CS6369 connectors.	
8 kilowatts per rack maximum	
Maximum weight per populated rack of 1300Kg	
Other requirements	
AMD Epyc Rome or Intel Gold processors (with AVX-512), with a minimum nominal frequency of 2GHz	
All CPU compute nodes must have the same processor	
All GPU compute nodes must have the same processor	
The type of RAM must be at least DDR4-2666MHz	
All equipment components must be clearly identified, and include the corresponding assembly / disassembly instructions.	
The nodes must:	
* Allow remote access (by software)	
* Allow hardware configuration by the admin user	
* Allow active hardware monitoring (Fans, CPUs, temperature, etc.)	
Replacement parts list (spare parts kit)	
2 SAS 7.2K RPM disks of the same specification as those used in the storage system disk bank	
2 Solid State Drives (SSD) of the same specification as used in the storage system disk bank	
2 SSD disks of the same specification as those used for the operating system.	
2 disks of the same specification as those used in the compute nodes (CPU or GPU)	
4 RAM memory units (DIMMs) of the same specification as those used in the CPU nodes	
4 RAM memory units (DIMMs) of the same specification as those used in the GPU nodes	
4 RAM memory units (DIMM cards) of the same specification as those used in the storage system	
4 RAM memory units (DIMMs) of the same specification as those used in the frontend node	
1 motherboard of the same specification as used in the GPU nodes	
1 motherboard of the same specification as used in the CPU nodes	
1 nVidia RTX6000 graphics card	
<ul style="list-style-type: none"> • 1 Infiniband EDR network card 	

1 Power Supply (PSU) of the same specification as used in the CPU nodes	
1 Power Supply (PSU) of the same specification as used in the GPU nodes	
1 Power Supply (PSU) of the same specification as used in the storage system	
1 Power Supply (PSU) of the same specification as used in the frontend node	
2 PDUs of the same specification as those used in the Racks	

Note: These are the minimum technical specifications required for this selection process, which may be improved. In any case, the lowest priced offer predominates.

Recommendations to keep in mind:

1. The offer validity period will be four (4) months
2. El Incoterm is FCA MIAMI
3. Bids must be registered in the following link: <https://licitaciones.omicas.co/form/convocatoriaspublicas>
4. Your offer's files must be encrypted/protected with a secure password, in a non-editable format (PDF, DOC, DOCS, XLS, PPT, JPG, PNG).
5. The opening of the offers will be done via zoom, before starting the virtual meeting the link and password for entry will be sent.
6. During the opening meeting, the password for each offer must be verbally indicated.
7. After the notification of the intention to award the contract, the selected Bidder / Proponent must send the following financial documents:
 - a) Balance sheet of the company as of December 31 of the previous year, signed by the authorized representative.
 - b) Income statement of the company as of December 31 of the previous year, signed by the authorized representative.
 - c) Financial statements as of December 31 of the previous year, signed by the authorized representative.

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Scientific Director of the ÓMICAS Program

"OMICAS: Optimización Multiescala In-silico de Cultivos Agrícolas Sostenibles (Infraestructura y validación en Arroz y Caña de Azúcar)"