



Equipamentos da Ilha OpenRAN

Especificações e Valores

Custos estimados dos Equipamentos



Equipamentos	Valor Unitário	Valor CIF
<u>Servidores de alto desempenho DU + CU</u>	R\$ 126.000,00	R\$ 126.000,00
<u>Servidores de alto desempenho RIC + GPU</u>	R\$ 100.000,00	R\$ 170.000,00
<u>Servidores de alto desempenho Orquestração</u>	R\$ 126.000,00	R\$ 214.200,00
<u>Switch ToR + Grandmaster</u>	R\$ 98.000,00	R\$ 166.000,00
<u>Antena GNSS</u>	R\$ 5.500,00	R\$9.350,00
<u>Unidade de rádio indoor</u>	R\$ 49.000,00	R\$ 83.300,00
<u>Unidade de rádio outdoor</u>	R\$ 120.000,00	R\$ 204.000,00
<u>Jetson J3011 + Modem 5G + Antena 5G (UEs)</u>	R\$ 10.000,00	R\$ 17.000,00
<u>Celulares (UEs)</u>	R\$ 2.500,00	R\$ 2.500,00
Transceptores ópticos	R\$ 36.400,00	R\$ 36.400,00

Servidor de Alto Desempenho DU + CU



- Form Factor: 1U
- Equipped with an Intel® Xeon® 6 SoC 6726P-B processor, 235W TDP, including Intel Quick Assist Technology and Intel vRAN accelerator
- 256GB RAM, composed of 4 × 64GB DDR5 6400MHz LP ECC RDIMM modules
- Two 960GB NVMe PCIe 4.0 3DTLC U.3 drives, rated at 1DWPD
- Two 25GbE SFP28 network interfaces
- Two 100GbE QSFP28 network interfaces
- One 10GbE network interface
- Dedicated 1GbE BASE-T management interface
- TPM 2.0 module
- Two redundant (1+1) 800W power supplies, 80 Plus Platinum certified
- Two C13-C14 power cables
- Rack installation kit included

<https://www.supermicro.com/en/products/system/iot/1u/svs-112d-42c-fn8p>



Servidor de Alto Desempenho RIC + GPU



- Form Factor: 1U
- Equipped with an Intel® Xeon® 6 SoC 6726P-B processor, 235W TDP, including Intel Quick Assist Technology and Intel vRAN accelerator
- 256GB RAM, composed of 4 × 64GB DDR5 6400MHz LP ECC RDIMM modules
- Two 960GB NVMe PCIe 4.0 3DTLC U.3 drives, rated at 1DWPD
- NVIDIA Ada L4 GPU with 24GB GDDR6, compatible with PCIe Gen 4
- Two 25GbE SFP28 network interfaces
- Two 100GbE QSFP28 network interfaces
- One 10GbE network interface
- Dedicated 1GbE BASE-T management interface
- TPM 2.0 module
- Two redundant (1+1) 800W power supplies, 80 Plus Platinum certified
- Two C13-C14 power cables
- Rack installation kit included

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Servidor de Alto Desempenho Orquestração



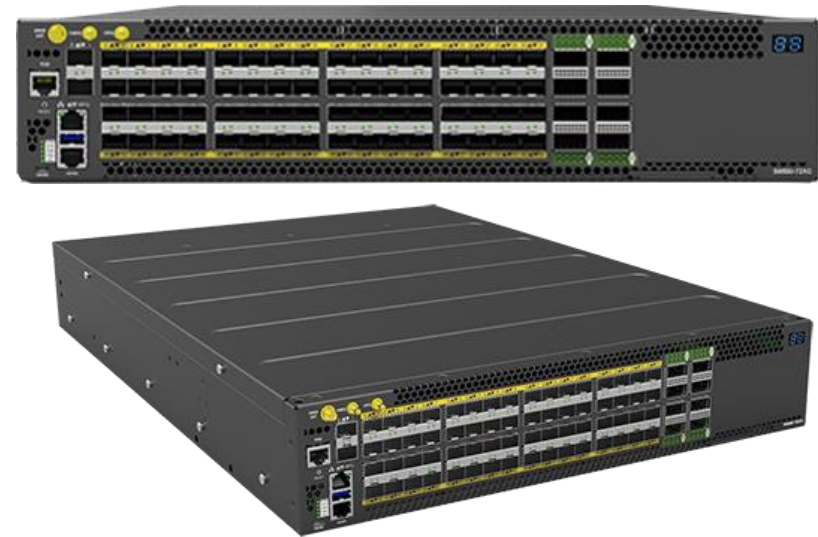
- **Servidor Fusion Server 2288H V7**
 - Intel Xeon Gold 6542Y(2.9GHz/24-Core/60MB/250W)
 - 256 GB DDR5 RDIMM,288pin,0.357ns,5600000KHz,1.1V,ECC
 - 960GB SSD,SATA 6Gb/s,Read intensive,ER3 Series,2.5inch
 - 7680 GB SSD, NVMe PCIe,Read Intensive,UH711a-Y Series,2.5inch
 - One Ethernet Adapter 25GE(Intel E810) Dual-Port
 - One Network Card 40 Gigabit(EXL710QDA2G1P5) Dual-Port
 - One Ethernet Card 1Gbps(I350) - Dual Port - RJ45 - OCP 3.0
 - <https://www.xfusion.com/en/resource/fusionserver-2288h-v7-technical-white-paper?category=>



Switch ToR + Grandmaster



- **UFISPACE S9600-72XC Open Aggregation Router**
 - 64 x 1/10/25G SFP28 ports
 - 8 x 40/100G QSFP28 ports
 - GNSS, 1PPS, 10MHz, and ToD timing ports
 - NOS: ARRCUS OS FEATURES
 - Supports SyncE and IEEE 1588 PTP
 - Telecom Grand Master Clock (GM)
 - Telecom Boundary Clock (BC)
 - Transparent Clock (TC)
 - G.8261, G.8262 profile
 - G.8275.1, G8275.2 profile
 - Segment Routing, MPLS, VLAN and QINQ
 - <https://www.ufispace.com/files/3S/UfiSpace-Open-Aggregation-Router-S9600-72XC-Datasheet.pdf>





- **GNSS MULTI-CONSTELLATION ANTENNA**

- CALIAN GNSS ANTENNA TW3740
- Supports Constalation
 - BeiDou B1
 - Galileo E1
 - GPS-L1
 - GLONASS G1 and
 - SBAS (WAAS, EGNOS, QZSS & MSAS)
- Frequency band (1559 to 1606 MHz).
- Wide voltage input range (2.5 to 16 VDC)
- IP69K weatherproof housing
- Gain 42 dB typ., 40 dB min
- Noise Figure 1 dB typ.
- [TW3740 Single Band GNSS Antenna - Advanced Technologies](#)



Unidade de rádio indoor



- **INDOOR ORAN N78 Lite-ON**
 - LITEON 7.2 O-RU, FR1 N78 (FlexFi O-RU series, 4T4R)
 - 3GPP Compliance Release 15 5G AS
 - Duplex Mode TDD
 - Bandwidth up to 100 MHz
 - Antenna Type Internal Antenna
 - RFTxPower 1W in total. 24dBm per chain
 - MIMO Order 4x4 MIMO
 - Tx/RxPath 4T4R
 - Modulation DL:256QAM/UL:64QAM
 - Timing Source GNSS,IEEE1588v2,Sync-E
 - Fronthaul Connectivity 10GSFP+,1GRJ45
 - Ingress Protection Indoor:IP20
 - OAMAspects with LITEON LiteNetics: FM, CM, AM, PM, SM
 - RIC Management O1 Interface : non-Real Time RIC
 - Active Users Support 64 active users
 - Deployment



Unidade de rádio outdoor



- **OUTDOOR ORAN N78**

- BENETEL 5G Split 7.2x Outdoor RAN650 n78 Radio Unit
 - RF Frequency Range n78 (3300 - 3800 MHz)
 - Instantaneous Bandwidth Up to 100 MHz
 - Power Supply -48 V
 - Power Consumption 100 W (typical)
 - Antenna Configurations Up to 4T4R
 - Receiver Noise Figure 4 dB typical
 - Transmit Output Power O/P 37 +/- 2.5 dBm (at antenna port)
 - TX adjustable 20 dB
 - ACLR at max power 47 dBc (typical)*
 - EVM 3.5% 256 QAM*
 - Frequency error 100 ppb*
 - Reference Sensitivity -98 dBm (typical)*
 - Modulation Support 256 QAM DL / 64 QAM UL
 - Sub carrier spacing (SCS) 30 kHz
 - Time Alignment Error *3GPP 5G NR Compliance +/-1.5 us end to end,
 - 10Gbe Ethernet SFP+
 - Transmit/Receive Antenna N-type
 - Power Supply Connector 3-Pin Circular female DC -48V
 - GPS SMA
 - RAN650 - Benetel
 - Alpha Wireless Band 78 Antenna AW3161-M-F-V2
 - Alpha Wireless 3.3-3.8GHz, 4 port, 65 degree, 18dBi, Panel Antenna
 - Range 500 - 1000 mts



Benetel™



- **Samsung S24**
 - Android 14 Samsung One UI 6.1
 - SAMSUNG Exynos 2400
 - 4x 1.95 GHz Cortex-A520
 - A-PS/GLONASS/BeiDou/Galileo/QZSS
 - DL 9640 Mbps/UP 2550 Mbps
- **Jetson Orin Nano 8G/ Seed Studio J3011 + Modem 5G Fibocom FM160 + Antena 5G 600-6000 Mhz**

