Product Carbon Footprint (PCF) Report

Supermicro BigTwin SuperServer SYS-621BT-DNC8R

At Supermicro, we strive to reduce the environmental impact by minimizing carbon emissions generated across our product's lifecycle. The product carbon footprint encompasses total greenhouse gas emissions (including carbon equivalents) across manufacturing, transport, use, and end-of-life stages. We calculate these emissions using the Product Attribute to Impact Algorithm (PAIA) which follows the standard IEC TR 62921 and uses data conforming to ISO 140641-1.

The product's estimated carbon footprint:

15,922 kg CO_2e*

over a 5-year lifetime in accordance with IPCC 2021 GWP100

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All estimates of carbon footprint are uncertain. Supermicro reports the 95th percentile of the carbon footprint estimate to reflect this uncertainty. For this product, that estimate has a mean of 15,922 kg CO_2e and a standard deviation of 9,290 kg CO_2e. Other organizations might report this value as 15,922+/-3,128 kg of CO_2e.

PAIA is a streamlined lifecycle analysis (LCA) tool developed by the Massachusetts Institute of Technology and partners. Please refer to the Intended Uses and Limitations of the PAIA Model here.

This calculation assumes the system operates at an average of 30% utilization, 24x7 and 365 days a year. The actual carbon footprint of the product will vary based on usage and configuration choices.

** CO2e stands for carbon dioxide equivalents*

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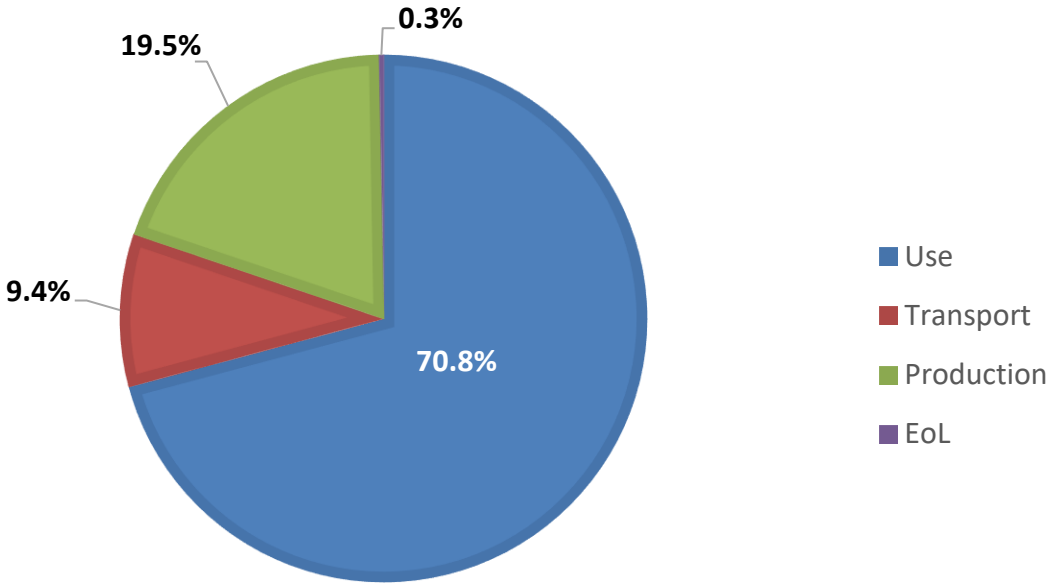
The following pie chart displays the CO_2e impact contribution of each phase in the server's lifecycle. Elements displaying 0% contribute less than 0.1%.



Configuration Used for Report			
Category	Element	Input	Unit
Product Specifications	Product Weight	36.6 80.7	kg lbs
	Number of CPUs Number of Cores per CPU	4 24	CPU cores
	Number of GPUs**	0	GPUs
	Number of SSDs	4	SSDs
	Number of M.2s	4	M.2s
	Number of HDDs	8	HDDs
	DRAM Capacity	4096	GB
Use	Location*	Europe	
	Annual Typical Energy Consumption (TEC)	5,464	kWh
	Product Lifetime	5	years
End of Life	Fraction Recycled (remainder to landfill)	0.9	fraction

The PCF was calculated using the specific attributes above.

** Carbon emissions vary by country's energy infrastructure. As of December 2024, electricity grid data is sourced from the International Energy Agency (IEA) 2023.*

*** Due to the lack of information available, the GPU manufacturing data calculations are only estimations at this time.*

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