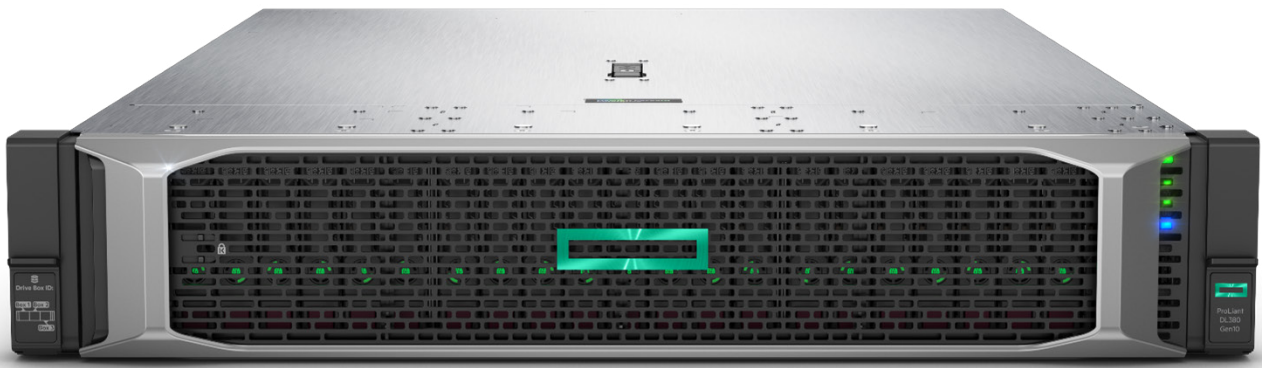


# HPE product carbon footprint

## HPE ProLiant DL380 Gen10 Server



Hewlett Packard Enterprise recognizes the imperative to help minimize our environmental footprint and it is a core part of our strategy. This product carbon footprint (PCF) sums up the total greenhouse gas (GHG) emissions generated over this product’s lifecycle. The product lifecycle includes manufacturing, transportation, use, and end of life. [Read more about our approach to the circular economy.](#)

This PCF uses Product Attribute to Impact Algorithm (PAIA) version 1.3.2 for manufacturing and end of life GHG emissions. PAIA is a streamlined lifecycle assessment (LCA) tool developed by the Massachusetts Institute of Technology’s Materials Systems Laboratory. [Read more about the intended uses and limitations of the PAIA model from “PAIA Intended Use” document.](#)

### Product input information

#### [HPE ProLiant DL380 Gen10 Server](#)

**Table 1.** Configuration inputs used to estimate the PCF

Lifecycle stage	Component	Base	Mainstream	Performance
Manufacturing	CPU	1x Intel® Xeon® Silver 12-core	2x Intel Xeon Silver 16-core	2x Intel® Xeon® Gold 24-core
	DRAM	64 GB	256 GB	768 GB
	Network adapter	1	2	3
	Storage controller	1x P408i-a	1x P408i-a	2x P816i-a/P408i-p
	SSD	2x 480 GB SATA RI	6x 800 GB SAS MU	24x 1.6 TB SAS MU
	Power supply	2x 800W Platinum	2x 800W Platinum	2x 800W Platinum
	Product weight	15 kg	17 kg	20 kg
Use	Product lifetime	4 years	4 years	4 years
	PUE	1.55	1.55	1.55
	Yearly energy (TEC)	801 kWh	1605 kWh	3633 kWh

Yearly energy is modeled using the [HPE Power Advisor tool](#) and assumes the server is operated at an average of 30% utilization 24 hours a day and 365 days a year. [Power usage effectiveness \(PUE\)](#) is sourced from [Uptime Institute Global Data Center Survey Results 2022](#).

## Product carbon footprints

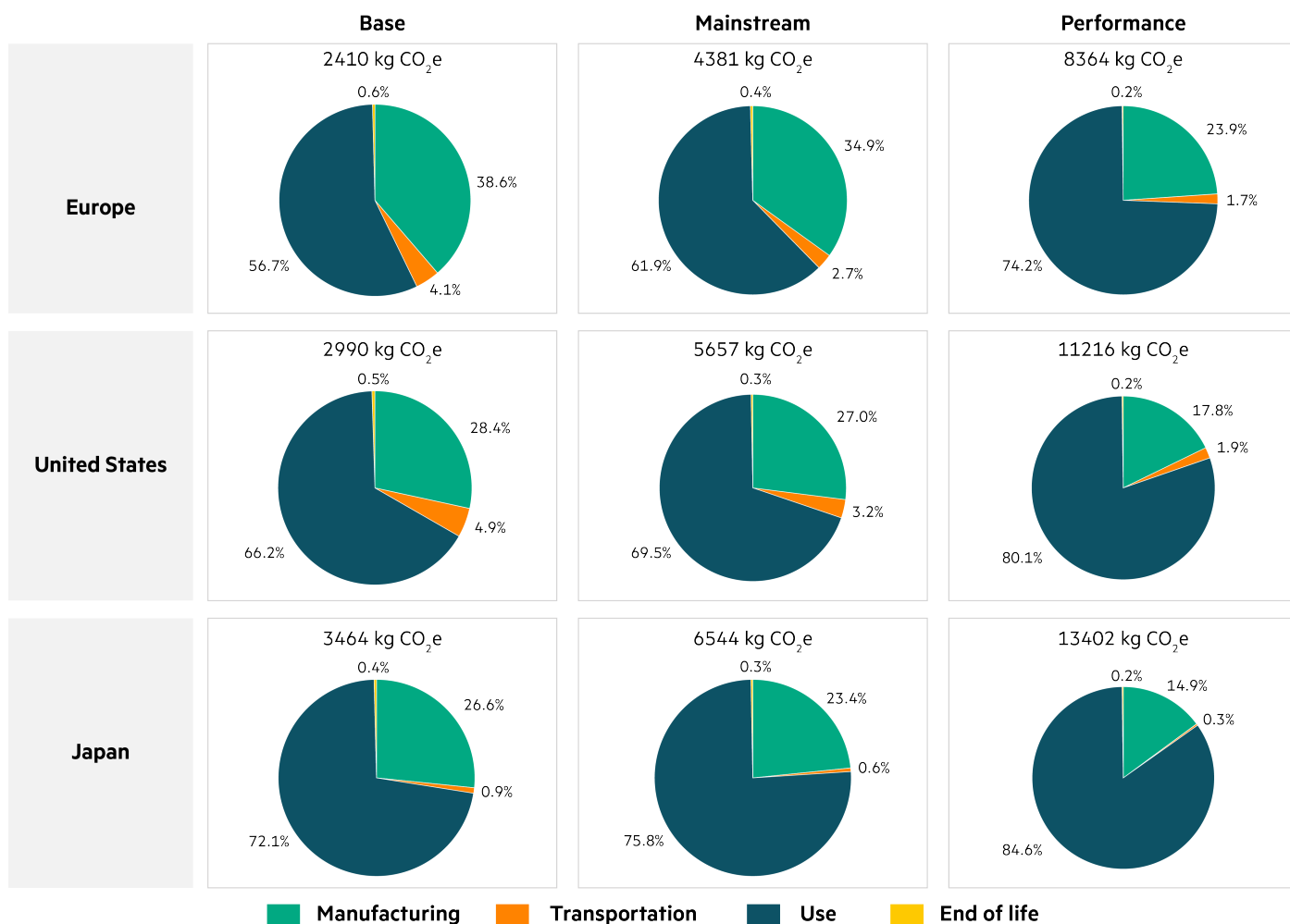
**Table 2.** GHG emissions by product lifecycle stage in kg CO<sub>2</sub>e

Configuration	Country of use	Manufacturing	Transportation	Use	End of life	Total	Std. deviation
Base	Europe	931	99	1366	14	2410	986
	United States	848	148	1979	14	2990	252
	Japan	921	32	2497	14	3464	337
Mainstream	Europe	1530	120	2714	18	4381	1943
	United States	1529	179	3931	18	5657	432
	Japan	1529	38	4959	18	6544	490
Performance	Europe	1998	140	1998	21	8364	4222
	United States	1997	210	8988	21	11216	675
	Japan	2000	45	11337	21	13402	760

HPE reports the mean value of the carbon footprint estimates with a standard deviation. Due to high customization of HPE servers, the GHG emissions can vary by configuration, country, and utilization.

HPE calculates the transportation and use stage GHG emissions. Transportation uses the 2023 emissions intensity from [GHG Emission Factors Hub](#) combined with the total product packaging weight, shipping mode, and distance traveled. Use stage GHG emissions use the latest emissions intensity from [ember-climate.org](#) at the time of publication.

Figure 1 shows how manufacturing, transportation, use, and end of life contribute to the PCF across different regions.



**Figure 1.** PCF calculated by region and type in kg CO<sub>2</sub>e



## How to customize use stage emissions

### Step 1: Collect data

If you know that your server is running from clean energy, the use stage GHG emissions is zero. Otherwise, you can customize the use GHG emissions to a specific grid emissions intensity, server power, power duration, and PUE.

- Grid emissions intensity (grams of CO<sub>2</sub>e per kWh) is collected from a credible source such as your electric provider, [epa.gov/eGRID](https://epa.gov/eGRID), [eea.europa.eu](https://eea.europa.eu), or an aggregation service such as [ember-climate.org](https://ember-climate.org) just to name a few.
- Server power (kW) can be read directly from the server using the HPE iLO and [Redfish API](#) or modeled using the [HPE Power Advisor tool](#) by adjusting the utilization to match the average workload.
- Power duration (hours) is the multiplication of the product lifetime (years), 365 days, 24 hours. The days and hours can be customized to match the specific usage.
- PUE is optional for this calculation based on the LCA scope. PUE is calculated by dividing the total facility energy by the IT equipment energy.

### Step 2: Calculate the emissions

(Use GHG emissions) = (Grid emissions Intensity) x (server power) x (power duration) x (PUE)

For more information about how to use this data or analysis, contact HPE sustainability and IT efficiency technologists at [lpsalesupport@hpe.com](mailto:lpsalesupport@hpe.com).

## Learn more at

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