Commission Regulation (EU) 2019/424 of 15 March 2019 laying down ecodesign requirements for servers and data storage products pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 617/2013 (Text with EEA relevance)

COMMISSION REGULATION (EU) 2019/424

of 15 March 2019

laying down ecodesign requirements for servers and data storage products pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 617/2013

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products[(1)], and in particular Article 15(1) thereof,

After consulting the Consultation Forum referred to in Article 18 of Directive 2009/125/EC,

Whereas:

(1) Directive 2009/125/EC requires the Commission to set ecodesign requirements for energy-related products that represent significant volumes of sales and trade, that have a significant environmental impact and that present significant potential for improvement in terms of their environmental impact without entailing excessive costs.

(2) The Commission has carried out a preparatory study to analyse the technical, environmental and economic aspects of servers and data storage products typically used for commercial purposes. The study has been carried out with stakeholders and interested parties from the Union and third countries, and the results have been made publicly available.

(3) Servers and data storage products are typically placed on the market for use in data centres, office and corporate environments.

(4) The environmental aspects of servers and data storage products that have been identified as significant for the purposes of this Regulation are energy consumption in the use phase and resource efficiency, in particular on the aspects related to reparability, reusability, upgradeability and recyclability for security of supply.

(5) Ecodesign requirements should harmonise energy consumption and resource efficiency requirements for servers and data storage products throughout the Union, for the internal market to operate better and in order to improve the environmental performance of those products.

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(6) The annual energy consumption related to servers directly is expected to be 48 TWh in 2030, which increases to 75 TWh when the annual energy consumption related to infrastructure (e.g. cooling systems and uninterruptible power supply systems) is also included. The annual energy consumption of data storage products is expected to be 30 TWh in 2030, 47 TWh when infrastructure is also included. The preparatory study shows that use-phase energy consumption by servers and data storage products can be significantly reduced.

(7) The effect of the ecodesign requirements set out in this Regulation is estimated to result by 2030 in annual energy savings of approximately 9 TWh (approximately the yearly electricity consumption of Estonia in 2014). More in detail, the effect of the ecodesign requirements for servers set out in this Regulation is estimated to result by 2030 in direct annual energy savings of approximately 2,4 TWh and indirect (i.e. related to infrastructure) annual energy savings of 3,7 TWh, summing up to a total saving of 6,1 TWh, corresponding to a total of 2,1 Mt of CO_2 equivalent. The effect of the ecodesign requirements for data storage products set out in this Regulation is estimated to result by 2030 in direct annual energy savings of approximately 0,8 TWh and indirect (i.e. related to infrastructure) annual energy savings of 2 TWh, summing up to a total saving of 2,8 TWh, corresponding to 0,9 Mt of CO_2 equivalent.

(8) In accordance with the Union action plan for the Circular Economy[(2)] the Commission should make sure that special emphasis is placed on aspects relevant to the circular economy, such as durability and reparability, when setting out or revising ecodesign criteria. Therefore requirements should be laid down on non-energy related aspects, including extraction of key-components and of critical raw materials (CRMs), availability of functionality for secure data deletion and provision of latest available version of firmware.

(9) The requirement on the extraction of key-components is expected to foster the reparability and upgradability of servers and data storage products, in particular by third parties (such as spare parts repairers and maintenance).

(10) The possibility to address CRMs in Ecodesign regulations (including for enterprise servers) has been mentioned in the recent Commission Staff Working Document 'Report on Critical Raw Materials and the Circular Economy'[(3)].

(11) The requirement on a functionality for secure data deletion could be implemented by means of technical solutions such as, but not limited to, a functionality implemented in firmware, typically in the Basic Input/Output System (BIOS), in software included in a self-contained bootable environment provided in a bootable compact disc, digital versatile disc or universal serial bus memory storage device included with the product, or in software installable in the supported operating systems provided with the product.

(12) The requirements on non-energy related aspects are expected to contribute prolonging the lifetime of servers by making it easier to refurbish and reuse them, while maintaining compliance with the principles of privacy and protection of personal data as set by Regulation (EU) 2016/679 of the European Parliament and of the Council[(4)].

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(13) The energy consumption of servers and data storage products could be reduced by applying existing non-proprietary technologies without an increase in the combined costs of purchasing and operating these products.

(14) The ecodesign requirements should not affect the functionality or affordability of servers and data storage products from the end-user's perspective and should not negatively affect health, safety or the environment.

(15) This Regulation should apply without prejudice to the requirements of Union legislation on safety and health, in particular the Directive 2014/35/EU of the European Parliament and of the Council[(5)], which covers all health and safety risks of electrical equipment operating with a voltage between 50 and 1000 V for alternating current and between 75 and 1500 V for direct current.

(16) The introduction of ecodesign requirements should give manufacturers sufficient time to redesign their products subject to this Regulation. The timing should take into account the impact on manufacturers' costs, in particular for small and medium-sized enterprises, while ensuring timely achievement of the objectives of this Regulation.

(17) Product parameters should be measured and calculated using reliable, accurate and reproducible methods which take into account recognised state-of-the-art measurement and calculation methods, including, where available, harmonised standards adopted by the European standardisation organisations following a request by the Commission, in accordance with the procedures laid down in Regulation (EU) No 1025/2012 of the European Parliament and of the Council[(6)].

(18) In accordance with Article 8 of Directive 2009/125/EC, this Regulation specifies which conformity assessment procedures apply.

(19) In order to facilitate compliance checks, manufacturers should provide the information contained in the technical documentation referred to in Annexes IV and V to Directive 2009/125/EC insofar as that information relates to the requirements laid down in this Regulation.

(20) In addition to the legally binding requirements laid down in this Regulation, indicative benchmarks for best available technologies should be determined to ensure that information on the life-cycle environmental performance of servers and data storage products is widely available and easily accessible.

(21) Commission Regulation (EU) No 617/2013[(7)] should be amended to exclude computer servers from its scope in order to prevent any overlap with the same products in the scope of this Regulation.

(22) The definitions of this Regulation related to data storage products are consistent with the terminology developed by the Storage Networking Industry Association (SNIA) Green Storage Initiative as defined in the SNIA Emerald taxonomy.

(23) In particular, the small data storage products definition corresponds to the online 1 equipment as set out in the SNIA Emerald taxonomy, and the large data storage products

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definition corresponds to the online 5 and 6 equipment as set out in the SNIA Emerald taxonomy.

(24) The definitions of this Regulation related to server product types, server efficiency, server performance and maximum power, are consistent with the terminology adopted in EN 303 470:2018. The measurement and calculation methods for the server efficiency are consistent with the methods adopted in EN 303 470:2018.

(25) The operating conditions classes, and their characteristics, are consistent with the classification set in the Thermal Guidelines for Data Processing Environments by the American Society of Heating, Refrigerating and Air-Conditioning Engineers. In particular, the boundary conditions of each operating condition class (such as temperature and humidity) are in accord with the allowable environmental ranges of the Thermal Guidelines for Data Processing Environments, where manufacturers test their equipment in order to verify that it will function within those boundaries.

(26) The measures provided for in this Regulation are in accordance with the opinion of the Committee established under Article 19(1) of Directive 2009/125/EC,

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter and scope

1 This Regulation establishes ecodesign requirements for the placing on the market and putting into service of servers and online data storage products.

2 This Regulation shall not apply to the following products:

a servers intended for embedded applications;
b servers classified as small scale servers in terms of Regulation (EU) No 617/2013;
c servers with more than four processor sockets;
d server appliances;
e large servers;
f fully fault tolerant servers;
g network servers;
h small data storage products;
i large data storage products.

Article 2

Definitions

1 For the purpose of this Regulation, the following definitions shall apply:

(1) ‘server’ means a computing product that provides services and manages networked resources for client devices, such as desktop computers, notebook computers, desktop thin clients, internet protocol telephones, smartphones, tablets, tele-communication, automated systems or other servers, primarily accessed via network connections, and

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not through direct user input devices, such as a keyboard or a mouse and with the following characteristics:

(a) it is designed to support server operating systems (OS) and/or hypervisors, and targeted to run user-installed enterprise applications;

(b) it supports error-correcting code and/or buffered memory (including both buffered dual in-line memory modules and buffered on board configurations);

(c) all processors have access to shared system memory and are independently visible to a single OS or hypervisor;

(2) 'server with more than four processor sockets' means a server containing more than four interfaces designed for the installation of a processor. For multi-node servers, this term refers to a server having more than four processor sockets in each server node;

(3) 'embedded application' means a software application that permanently resides in an industrial or consumer device, typically stored in a non-volatile memory such as read-only memory or flash memory;

(4) 'server appliance' means a server that is not intended to execute user-supplied software, delivers services through one or more networks, is typically managed through a web or command line interface and is bundled with a pre-installed OS and application software that is used to perform a dedicated function or set of tightly coupled functions;

(5) 'resilient server' means a server designed with extensive reliability, availability, serviceability and scalability features integrated in the micro architecture of the system, central processing unit (CPU) and chipset;

(6) 'large server' means a resilient server which is shipped as a pre-integrated/pre-tested system housed in one or more full frame racks and that includes a high connectivity input/output subsystem with a minimum of 32 dedicated input/output slots;

(7) 'multi-node server' means a server that is designed with two or more independent server nodes that share a single enclosure and one or more power supply units. In a multi-node server, power is distributed to all nodes through shared power supply units. Server nodes in a multi-node server are not designed to be hot-swappable;

(8) 'fully fault tolerant server' means a server that is designed with complete hardware redundancy (to simultaneously and repetitively run a single workload for continuous availability in mission critical applications), in which every computing component is replicated between two nodes running identical and concurrent workloads (i.e., if one node fails or needs repair, the second node can run the workload alone to avoid downtime);

(9) 'network server' means a network product which contains the same components as a server in addition to more than 11 network ports with a total line rate throughput of 12 Gb/s or more, the capability to dynamically reconfigure ports and speed and support for a virtualized network environment through a software defined network;

(10) 'data storage product' means a fully-functional storage system that supplies data storage services to clients and devices attached directly or through a network. Components and subsystems that are an integral part of the data storage product architecture (e.g., to provide internal communications between controllers and disks) are considered to be part of the data storage product. In contrast, components that are