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Information technology — Data centres — Practices for resource-efficient data centres

Technologies de l'information — Centres de données — Pratiques pour les centres de données économes en ressources

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Foreword

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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Introduction

Data centres are essential to the provision of information technology (IT) services and can play an important role in the conservation of resources. However, they can also consume a considerable amount of resources if mis-managed and thus, it is critical to utilize these resources efficiently.

Resource efficiency in a data centre begins with the location (taking advantage of the external environment) and the building design to minimize energy consumption. The facilities can then implement modular extension or easily extensible space, cooling, and power according to the IT services provided and co-location situation.

Once data centres are constructed and equipped with all the necessary facilities, it is important to collect and monitor operational data. Based on the information obtained, it is possible to determine which elements utilize resources least efficiently and assess how to improve the performance.

The performance of existing facilities can be periodically measured to determine if the original design objectives for resource efficiency are being achieved and allowing performance to be improved by replacement of equipment with better resource-efficiency characteristics.

This document provides information on available options for improving resource efficiency in data centres, with particular emphasis on operational procedures.

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Information technology — Data centres — Practices for resource-efficient data centres

1 Scope

This document describes generally applicable practices for improving the resource efficiency of data centres, independent of their application(s).

This document focuses on continuous improvement processes, designs and guidelines that prioritize resource efficiency. In general, the processes and practices are technology-neutral and are independent of location.

The practices for data centre resource efficiency improvement deal with various establishment and operation aspects such as data centre planning, management, cooling, power feeding, information and communications technology (ICT) and cost aspects that are not restricted by the scope of this document.

The following items are not included in the scope of this document:

— development of key performance indicators (KPIs);

— comparability between data centre performance results;

— definition of maturity model for data centres;

— social sustainability issues.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Terms and definitions

3.1.1
availability
ability of an item to be in a state to perform a required function under given conditions at a given instant of time or over a given time interval, assuming that the required external resources are provided

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