INTERNATIONAL STANDARD

ISO/IEC 9798-2

Third edition
2008-12-15

Information technology — Security techniques — Entity authentication —

Part 2: **Mechanisms using symmetric encipherment algorithms**

Technologies de l'information — Techniques de sécurité — Authentification d'entité —

Partie 2: Mécanismes utilisant des algorithmes de chiffrement symétriques

Reference number
ISO/IEC 9798-2:2008(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 9798-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *IT Security techniques*.

This third edition cancels and replaces the second edition (ISO/IEC 9798-2:1999), which has been technically revised. It also incorporates the Technical Corrigendum ISO/IEC 9798-2:1999/Cor.1:2004. Note that implementations which conform to the second edition will conform to the third edition.

ISO/IEC 9798 consists of the following parts, under the general title *Information technology — Security techniques — Entity authentication*:

— *Part 1: General*

— *Part 2: Mechanisms using symmetric encipherment algorithms*

— *Part 3: Mechanisms using digital signature techniques*

— *Part 4: Mechanisms using a cryptographic check function*

— *Part 5: Mechanisms using zero-knowledge techniques*

— *Part 6: Mechanisms using manual data transfer*

Further parts may follow.

Information technology — Security techniques — Entity authentication —

Part 2: Mechanisms using symmetric encipherment algorithms

1 Scope

This part of ISO/IEC 9798 specifies entity authentication mechanisms using symmetric encipherment algorithms. Four of the mechanisms provide entity authentication between two entities where no trusted third party is involved; two of these are mechanisms to unilaterally authenticate one entity to another, while the other two are mechanisms for mutual authentication of two entities. The remaining mechanisms require a trusted third party for the establishment of a common secret key, and realize mutual or unilateral entity authentication.

The mechanisms specified in this part of ISO/IEC 9798 use time variant parameters such as time stamps, sequence numbers, or random numbers to prevent valid authentication information from being accepted at a later time or more than once.

If no trusted third party is involved and a time stamp or sequence number is used, one pass is needed for unilateral authentication, while two passes are needed to achieve mutual authentication. If no trusted third party is involved and a challenge and response method employing random numbers is used, two passes are needed for unilateral authentication, while three passes are required to achieve mutual authentication. If a trusted third party is involved, any additional communication between an entity and the trusted third party requires two extra passes in the communication exchange.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9798-1, *Information technology — Security techniques — Entity authentication — Part 1: General*