INTERNATIONAL STANDARD ISO/IEC 9594-8

Recommendation ITU-T X.509

Information technology – Open Systems Interconnection –   
The Directory: Public-key and attribute certificate frameworks

Summary

Recommendation ITU-T X.509 | ISO/IEC 9594-8 defines frameworks for public-key infrastructure (PKI) and privilege management infrastructure (PMI). It introduces the basic concept of asymmetric cryptographic techniques. It specifies the following data types: public-key certificate, attribute certificate, certificate revocation list (CRL) and attribute certificate revocation list (ACRL). It also defines several certificates and CRL extensions, and it defines directory schema information allowing PKI and PMI related data to be stored in a directory. In addition, it defines entity types, such as certification authority (CA), attribute authority (AA), relying party, privilege verifier, trust broker and trust anchor. It specifies the principles for certificate validation, validation path, certificate policy etc. It includes a specification for authorization validation lists that allow for fast validation and restrictions on communications.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| History   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Edition | Recommendation | Approval | Study Group | Unique ID[[1]](#footnote-1)\* | | 1.0 | ITU-T X.509 | 1988-11-25 |  | [11.1002/1000/2999](http://handle.itu.int/11.1002/1000/2999) | | 2.0 | ITU-T X.509 | 1993-11-16 | 7 | [11.1002/1000/3000](http://handle.itu.int/11.1002/1000/3000) | | 3.0 | ITU-T X.509 | 1997-08-09 | 7 | [11.1002/1000/4123](http://handle.itu.int/11.1002/1000/4123) | | 3.1 | ITU-T X.509 (1997) Technical Cor. 1 | 2000-03-31 | 7 | [11.1002/1000/5033](http://handle.itu.int/11.1002/1000/5033) | | 3.2 | ITU-T X.509 (1997) Technical Cor. 2 | 2001-02-02 | 7 | [11.1002/1000/5311](http://handle.itu.int/11.1002/1000/5311) | | 3.3 | ITU-T X.509 (1997) Technical Cor. 3 | 2001-10-29 | 7 | [11.1002/1000/5559](http://handle.itu.int/11.1002/1000/5559) | | 3.4 | ITU-T X.509 (1997) Technical Cor. 4 | 2002-04-13 | 17 | [11.1002/1000/6025](http://handle.itu.int/11.1002/1000/6025) | | 3.5 | ITU-T X.509 (1997) Technical Cor. 5 | 2003-02-13 | 17 | [11.1002/1000/6236](http://handle.itu.int/11.1002/1000/6236) | | 3.6 | ITU-T X.509 (1997) Technical Cor. 6 | 2004-04-29 | 17 | [11.1002/1000/7285](http://handle.itu.int/11.1002/1000/7285) | | 4.0 | ITU-T X.509 | 2000-03-31 | 7 | [11.1002/1000/5034](http://handle.itu.int/11.1002/1000/5034) | | 4.1 | ITU-T X.509 (2000) Technical Cor. 1 | 2001-10-29 | 7 | [11.1002/1000/5560](http://handle.itu.int/11.1002/1000/5560) | | 4.2 | ITU-T X.509 (2000) Technical Cor. 2 | 2002-04-13 | 17 | [11.1002/1000/6026](http://handle.itu.int/11.1002/1000/6026) | | 4.3 | ITU-T X.509 (2000) Technical Cor. 3 | 2004-04-29 | 17 | [11.1002/1000/7284](http://handle.itu.int/11.1002/1000/7284) | | 4.4 | ITU-T X.509 (2000) Technical Cor. 4 | 2007-01-13 | 17 | [11.1002/1000/8637](http://handle.itu.int/11.1002/1000/8637) | | 5.0 | ITU-T X.509 | 2005-08-29 | 17 | [11.1002/1000/8501](http://handle.itu.int/11.1002/1000/8501) | | 5.1 | ITU-T X.509 (2005) Cor. 1 | 2007-01-13 | 17 | [11.1002/1000/9051](http://handle.itu.int/11.1002/1000/9051) | | 5.2 | ITU-T X.509 (2005) Cor. 2 | 2008-11-13 | 17 | [11.1002/1000/9591](http://handle.itu.int/11.1002/1000/9591) | | 5.3 | ITU-T X.509 (2005) Cor. 3 | 2011-02-13 | 17 | [11.1002/1000/11042](http://handle.itu.int/11.1002/1000/11042) | | 5.4 | ITU-T X.509 (2005) Cor. 4 | 2012-04-13 | 17 | [11.1002/1000/11577](http://handle.itu.int/11.1002/1000/11577) | | 6.0 | ITU-T X.509 | 2008-11-13 | 17 | [11.1002/1000/9590](http://handle.itu.int/11.1002/1000/9590) | | 6.1 | ITU-T X.509 (2008) Cor. 1 | 2011-02-13 | 17 | [11.1002/1000/11043](http://handle.itu.int/11.1002/1000/11043) | | 6.2 | ITU-T X.509 (2008) Cor. 2 | 2012-04-13 | 17 | [11.1002/1000/11578](http://handle.itu.int/11.1002/1000/11578) | | 6.3 | ITU-T X.509 (2008) Cor. 3 | 2012-10-14 | 17 | [11.1002/1000/11736](http://handle.itu.int/11.1002/1000/11736) | | 7.0 | ITU-T X.509 | 2012-10-14 | 17 | [11.1002/1000/11735](http://handle.itu.int/11.1002/1000/11735) | | 7.1 | ITU-T X.509 (2012) Cor. 1 | 2015-05-29 | 17 | [11.1002/1000/12474](http://handle.itu.int/11.1002/1000/12474) | | 7.2 | ITU-T X.509 (2012) Cor. 2 | 2016-04-29 | 17 | [11.1002/1000/12844](http://handle.itu.int/11.1002/1000/12844) | | 7.3 | ITU-T X.509 (2012) Cor. 3 | 2016-10-14 | 17 | [11.1002/1000/13032](http://handle.itu.int/11.1002/1000/13032) | | 8.0 | ITU-T X.509 | 2016-10-14 | 17 | [11.1002/1000/13031](http://handle.itu.int/11.1002/1000/13031) | |
| Keywords  Attribute, attribute authority, certificate, certification authority, distinguished name, PKI, PMI, trust anchor, validation. |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. \* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>. [↑](#footnote-ref-1)