

ICS 35.110
CCS L 79



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 16262.1-2025

Replacing GB/T 16262.1-2006

**Information technology - Abstract Syntax Notation One(ASN.1) -
Part 1: Specification of basic notation
(English Translation)**

Issued on: March 28, 2025

Implemented on: October 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative references	
3 Terms and Definitions	
4 Abbreviations	13
5 Notation	
6 Type extended ASN.1 module	
7 Scalability requirements for encoding rules	
8 Mark	
9 Encoding Instructions	
10 Use of ASN.1 Notation	
11 ASN.1 Character Set	
12 ASN.1 terms	
13 Module Definition	
14 Reference Type and Value Definition	
15 Support for notation for referencing ASN.1 components	
16 Type and Value Assignment	
17 Definition of Types and Values	
18 Notation of Boolean Type	
19 Notation of integer types	
20 Notation of enumeration types	
21 Notation of real number types	
22-bit string type notation	
23 Notation of octet string types	
24 Empty type notation	
25 Notation of sequence types	
26 Notation for a single sequence type	
27 Notation of collection types	
28 Notation for a single collection type	
29 Selection type notation	
30 Selected Types of Notation	

31	Notation of prefix types
32	Object Identifier Type Notation
33	Relative Object Identifier Type Notation
34	Notation of OID Internationalized Resource Identifier Type
35	Notation for relative OID internationalized resource identifier types
36	Notation of embedded pdv types
37	Notation of external types
38	Time Type
39	String type
40	Notation of string type
41	Definition of restricted string types
42	Naming Characters, Sets, and Attribute Class Sets
43	General order of characters
44	Definition of unrestricted string type
45	Notation of types defined in Chapters 46 to 48
46	Universal Time
47	World Time
48	Object Descriptor Type
49	Constrained Type
50	Element Set Specification
51	Subtype element
52	Extension Flag
53	Exception Identifier
54	Coding control part
Appendix A (Normative) ASN.1 Regular Expressions	
Appendix B (Normative) Defined Time Types	
Appendix C (Normative) Rules for Type and Value Compatibility	
Appendix D (Normative) Assigned Object Identifiers and OID Internationalized Resource Identifier Values	
Appendix E (Normative) Code reference	
Appendix F (informative) Allocation and use of arcs in the international object identifier tree	
Appendix G (Informative) Examples and Tips	
Appendix H (Informative) ASN.1 String Tutorial Appendix	
Appendix I (Informative) Supplementary Appendix 164 for Type Extension ASN.1 Modules	

Appendix J (Informative) TIME Type Tutorial Appendix

Appendix K (Informative) Analysis of the value notation of the TIME type

Appendix L (Informative) Summary of ASN.1 Notation

References.199

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 16262 "Abstract Syntax Notation for Information Technology One (ASN.1)". GB/T 16262 has been published.

The following 4 parts.

- Part 1: Basic notation specification;
- Part 2: Information object specifications;
- Part 3: Constraint specifications;
- Part 4: Parameterization of the ASN.1 specification.

This document replaces GB/T 16262.1-2006 "Information technology Abstract syntax notation one (ASN.1) Part 1: Basic notation rules Compared with GB/T 16262.1-2006, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added "Encoding Instructions", "Notation of OID Internationalized Resource Identifier Types", "Relative OID Internationalized Resource Identifier Types" Notation "Time Type" "Encoding Control Part" "Defined Time Type" "Encoding Reference" (see Chapter 9, Chapter 34, Chapter 35, Chapter 38, Chapter 54, Appendix B, Appendix E);
- b) Added "Simple string term", "Time value string", "XML time value string term", "Attribute and name setting term" "Encoding reference" "Integer value Unicode label" "Non-integer value Unicode label" "XML Boolean extended true term" "XML ASN.1 terms such as "XML real non-numeric term" and "XML real infinity term" (see Chapter 12);
- c) Added the allocation of general category marks (see Table 1 of 8.4), the ASN.1 character "non-line break character" (see Table 2 of 11.1), and the "blank "character representation of" (see 12.1.6), "characters of xmlasn1typename" (see Table 4 of 12.36.2), "reserved words" (see 12.38), "Notation of prefix types" (see 31.1 and 31.3);
- d) Added "Named Characters, Sets, and Attribute Class Sets" (see 42.1.5 and 42.1.6), "Attribute Sets" in "Subtype Elements" "Time length range", "Time point range" and

"Repetition range" (see 51.10, 51.11, 51.12 and 51.13);

e) Changed the production of "ModuleDefinition" (see 13.1, 12.1 of the 2006 edition), the notation of "BuiltinType" and "Inherent Type" notation (see 17.2, 16.2 of the 2006 edition), "BuiltinValue" notation (see 17.9, 16.9 of the 2006 edition), "XM-LBuiltinValue" notation (see 17.10, 16.10 of the 2006 edition), "XMLBooleanValue" notation (see 18.3, 17.3 of the 2006 edition), "XMLIntegerValue" notation (see 19.9, 18.9 of the 2006 edition), "XMLEnumeratedValue" notation (see 20.8, 19.8 of the 2006 edition), "RealValue" and "XMLRealValue" notation (see 21.6, 20.6), "XMLBitStringValue" notation (see 22.9, 2006 edition 21.9), "XMLSequenceOfValue" notation (see 26.3, 2006 edition 25.3), "XMLSetOfValue" notation (see 28.3, 2006 edition 27.3), "Named-Type" notation (see 31.2.1, 30.1 of the 2006 edition), "SubtypeElements" notation (see 51.1, 47.1);

f) Changed the chapter title of "Named characters and sets defined in GB/T 13000.1" to "Named characters, sets and attribute category sets" (see Chapter 42, Chapter 38 of the 2006 edition), and relevant provisions on "universal time" (see Chapter 46, Chapter 42 of the 2006 edition);

Changed Appendix C "Assigned Object Identifier Values" to Appendix D "Assigned Object Identifiers and OID Internationalized Resource Identifiers" Value", and made appropriate additions to the content (see Appendix D, Appendix C of the 2006 edition);

g) The relevant provisions on "the normal order of characters" have been deleted (see 39.5 of the 2006 edition).

This document is equivalent to ISO/IEC 8824-1:2021 "Abstract Syntax Notation for Information Technology One (ASN.1) Part 1: Basic Notation Legal Norms".

Introduction

GB/T 16262 aims to standardize abstract syntax notation. The compilation of GB/T 16262 is based on ISO/IEC 8824. According to ISO/IEC 8824, GB/T 16262 is planned to consist of 4 parts.

--- Part 1: Basic notation specification. The purpose is to define data types, values and constraints on data types.

--- Part 2: Information object specifications. The purpose is to provide information object categories, information objects and information object sets.

Memorization method.

--- Part 3: Constraint specification. The purpose is to provide a notation for specifying user-defined constraints, table constraints and content constraints.

--- Part 4: Parameterization of ASN.1 specifications. The purpose is to define the parameterization notation of ASN.1 specifications.