

INTERNATIONAL STANDARD

ISO/IEC
8348

Second edition
1993-06-15

AMENDMENT 5
1994-11-01

Information technology — Open Systems Interconnection — Network Service Definition

AMENDMENT 5: Group Network addressing

*Technologies de l'information — Interconnexion de systèmes ouverts —
Définition du service de réseau*

AMENDEMENT 5: Adressage de réseau groupé

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Reference number
ISO/IEC 8348:1993/Amd.5:1994(E)

Foreword

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In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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.

This amendment to International Standard ISO/IEC 8348:1993 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This amendment to ISO/IEC 8348:1993 has not been approved by ITU-T and is an ISO/IEC amendment only. When approved by ITU-T a second edition of the amendment will be published conforming to the Rules for presentation of ISO/IEC/ITU-T common texts.

Amendments 1 to 4 were consolidated into the second edition of ISO/IEC 8348.

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Printed in Switzerland

Information technology — Open Systems Interconnection — Network Service Definition

AMENDMENT 5: Group Network addressing

0. Introduction

This Amendment to ISO/IEC 8348:1993 defines the concept of **group Network address**. ISO/IEC 8348:1993 defines the Network service access point (NSAP) address as an identifier for a single NSAP, supporting a Network service that is exclusively unicast (i.e., between a single source NSAP and a single destination NSAP). This Amendment does not change the definition of the NSAP address, but adds a new type of identifier - the group Network address - that supports a multicast Network service (i.e., between a single source NSAP identified by an individual Network address, and a group of destination NSAPs, identified by a group Network address). The multicast Network service is itself defined in a separate Amendment to ISO/IEC 8348:1993.

This Amendment defines group Network addresses by creating a new set of AFI values, one for each existing AFI value, and a fixed one-to-one mapping between each of the existing AFI values and a corresponding group AFI value. The syntax of a group Network address is identical to the syntax of an individual Network address, except that the value of the AFI in an individual Network address may be only one of the values already allocated for individual Network addresses, whereas the value of the AFI in a group Network address may be only one of the values allocated for group Network addresses by this Amendment. The AFI values allocated for group Network addresses have been chosen in such a way that they do not overlap, in the preferred encoding defined by ISO/IEC 8348:1993, with any of the AFI values that have already been allocated for individual Network addresses.

1. Scope

This Amendment makes no changes to clause 1 of ISO/IEC 8348:1993.

2. References

This Amendment makes no changes to clause 2 of ISO/IEC 8348:1993.

3. Definitions

Add two definitions as 3.4.X and 3.4.Y (after the present 3.4.10) and a Note within clause 3 of ISO/IEC 8348:1993 with the following text:

3.4.X group Network address: an address that identifies a set of zero or more Network service access points; these may belong to multiple Network entities, in different end systems.

3.4.Y individual Network address: an address that identifies a single NSAP.

Note: - Where the distinction between a group Network address and an individual Network address is not important, the term **NSAP address** is used.

4. Abbreviations

This Amendment makes no changes to clause 4 of ISO/IEC 8348:1993.

5. Conventions

This Amendment makes no changes to clause 5 of ISO/IEC 8348:1993.

6. Overview and general characteristics

*Change point (e) of clause 6 from “(NSAP addressing)” to:
(NSAP addressing and group Network addressing)*

7. Types and classes of Network Service

This Amendment makes no changes to clause 7 of ISO/IEC 8348:1993.

PART 2 - DEFINITION OF CONNECTION-MODE SERVICE

This Amendment makes no changes to clauses 8 through 14 of ISO/IEC 8348:1993.

PART 3 - DEFINITION OF CONNECTIONLESS-MODE SERVICE

This Amendment makes no changes to clauses 15 through 19 of ISO/IEC 8348:1993.

A. Annex A.

A.1 General

Add a paragraph to the end of clause A.1:

In addition this annex defines the abstract syntax and semantics of the group Network address. The group Network address is used to support multicast services and is the address that may appear in the primitives of the connection-mode Network service as the called address parameter, and in the primitives of the connectionless-mode network service as the destination address parameter.

A.2 Scope

This Amendment makes no changes to clause A.2 of ISO/IEC 8348:1993.

A.3 Concepts and terminology

Add to the third paragraph, first sentence of A.3.1.1 right after “another real subnetwork,”:
a particular group of real end systems on this real subnetwork,

Add a new paragraph at the end of A.3.1.2:

The values of the called address of the N-CONNECT primitive and the destination address parameter of the N-UNITDATA primitive are permitted to be group Network addresses. Calling address and responding address parameters of N-CONNECT primitives and source address parameters of N-UNITDATA primitives are never permitted to be group Network addresses.

A.4 Principles for creating the OSI Network addressing scheme

This Amendment makes no changes to clause A.4 of ISO/IEC 8348:1993.

A.5 Network address definition

Replace the first sentence in the second paragraph of A.5.2.1:

The abstract syntax of the AFI is two hexadecimal digits. The abstract syntax for the IDI is decimal digits.

Replace the word “decimal” in the current second sentence in the second paragraph of A.5.2.1 with:

hexadecimal

Add a new sentence to the second paragraph of clause A.5.2.1 after the third sentence (ending with “...normally carries a complete NSAP address.”):

Similarly, if the first two digits of the IDP are hexadecimal FF, this indicates the presence of an incomplete group Network address.

Replace the entire clause of A.5.2.1.1:

The AFI has an abstract syntax of two hexadecimal digits with a value in the range of 00 to FF. The values of the AFI are allocated or reserved as shown in Table A-1, A-X and A-Y.

Rename Table A-1 to:

Individual AFI allocations

Replace the value range 00-09 in Table A-1 to:

00-0F

Replace the value range 10-35 in Table A-1 to:

10-19, 20-29, 30-35

Replace the value range 36-59 in Table A-1 to:

36-39, 40-49, 50-59

Replace the value range 80-99 in Table A-1 to:

80-89, 90-99

Replace “as summarized in Table A-2” at the end of the first sentence of A.5.2.1.2 with:

as summarized for use in individual addresses in Table A-2 (the corresponding AFI values for use in group addresses is found via Table A-X)

Add a new paragraph at the end of A.5.2.1.2:

The allocation of group addresses is restricted to be only from the AFI values allocated for the assignment of group addresses in Table A-X. An addressing authority in allocating either Network addresses or authorizing one or more authorities to allocate addresses, allocates both individual and the corresponding group addresses. Addresses assigned with an AFI value allocated for group addresses are only to be used for group addresses.

Rename Table A-2 to:

AFI values for individual Network addresses

Replace point (a) in the beginning of A.5.3 with the following text (this is the first point (a) of this clause):

a) The AFI, with an abstract syntax of two hexadecimal digits.

Replace A.5.3 point (a) of the preferred binary encoding (this is the second point (a) of this clause) with:

using two semi-octets to represent the two digits of the AFI, yielding a value for each semi-octet in the range 0000-1111.

Provide two new tables: Table A-X and Table A-Y between the present Table A-1 and Table A-2:

Table A-X - Relationship of AFI Individual and Group values

Individual Group		Individual Group		Individual Group	
0x	FF				
10	A0	40	BE	70	DC
11	A1	41	BF	71	DD
12	A2	42	C0	72	DE
13	A3	43	C1	73	DF
14	A4	44	C2	74	E0
15	A5	45	C3	75	E1
16	A6	46	C4	76	E2
17	A7	47	C5	77	E3
18	A8	48	C6	78	E4
19	A9	49	C7	79	E5
20	AA	50	C8	80	E6
21	AB	51	C9	81	E7
22	AC	52	CA	82	E8
23	AD	53	CB	83	E9
24	AE	54	CC	84	EA
25	AF	55	CD	85	EB
26	B0	56	CE	86	EC
27	B1	57	CF	87	ED
28	B2	58	D0	88	EE
29	B3	59	D1	89	EF
30	B4	60	D2	90	F0
31	B5	61	D3	91	F1
32	B6	62	D4	92	F2
33	B7	63	D5	93	F3
34	B8	64	D6	94	F4
35	B9	65	D7	95	F5
36	BA	66	D8	96	F6
37	BB	67	D9	97	F7
38	BC	68	DA	98	F8
39	BD	69	DB	99	F9

Table A-Y - AFI values reserved for future allocation

1A-1F
2A-2F
3A-3F
4A-4F
5A-5F
6A-6F
7A-7F
8A-8F
9A-9F
FA-FE

A.6 Character based DSP allocation

This Amendment makes no changes to clause A.6 of ISO/IEC 8348:1993.

A.7 Reference publication format

Replace the first phrase (up to and including the first comma) of the second sentence in the first paragraph of A.7 with:

It consists of two hexadecimal digits which represent the AFI, followed by a string of decimal digits which is a direct representation of the IDI,

Replace "string of decimal digits representing the IDP" of the last sentence in the first paragraph of A.7 with:

string of two hexadecimal digits representing the AFI, followed by a string of decimal digits representing the IDI

A.8 Network entity titles

Add a new paragraph to the end of clause A.8:

A Network Entities Group Title identifies a group of Network entities. Membership of a given such group may change over time. Group Network addresses are used to identify either such a title or a group of NSAPs.

B. Annex B.

Change the title of clause B.2 in ISO/IEC 8348 to:

B.2 Reservation of AFI values 00-0F and FF (Table A-2)

Replace the first sentence of clause B.2 with:

The reservation of AFI values beginning with the digit 0 and the AFI value of FF is intended to allow for their use in handling special cases, such as:

Replace “initial zero digit” in the first sentence of the last paragraph of clause B.2 with:

initial zero digit or the value FF

Replace “the AFI values 00-09,” in the last sentence of clause B.2 with:

these AFI values,

C. Annex C.

This Amendment makes no changes to Annex C of ISO/IEC 8348:1993.