Client ID

Version 09 Apr 2001

Open Mobile Alliance
WAP-196-ClientID-20010409-a

Continues the Technical Activities
Originated in the WAP Forum

Contents

1. Scope

Wireless Application Protocol (WAP) is a result of continuous work to define an industry wide specification for developing applications that operate over wireless communication networks. The scope for the WAP Forum is to define a set of specifications to be used by service applications. The wireless market is growing very quickly and reaching new customers and providing new services. To enable operators and manufacturers to meet the challenges in advanced services, differentiation, and fast/flexible service creation, WAP defines a set of protocols in transport, session and application layers. For additional information on the WAP architecture, refer to "*Wireless Application Protocol Architecture Specification*" [WAP].

This specification defines identifiers for WAP clients, the *Client ID*, which provide a means for a WAP client to identify itself to the WAP proxy. The goal of this specification is to define the format for the Client ID. This specification does not define a means for authentication, but it simply defines an identifier format for a device.

2. Document Status

For information and comments on this specification, please visit http://www.openmobilealliance.org/.

3. References

3.1 Normative references

[ABNF] "Augmented BNF for Syntax Specification: ABNF", D. Crocker, Ed., P. Overell. November 1997, URL:http://www.ietf.org/rfc/rfc2234.txt

[IOPProc] "OMA Interoperability Policy and Process". Open Mobile Alliance™. OMA-IOP-Process-v1_0. URL:http//www.openmobilealliance.org/

[GSM1111] ETSI European Digital cellular telecommunications system (Phase 2+): Specification of the Subscriber Identity Module - Mobile Equipment(SIM - ME) interface (GSM 11.11)

[GSM0303] ETSI European Digital cellular telecommunications system (Phase 2+) Numbering, addressing and identification (GSM 03.03)

[MIS] Mobitex Interface Specification (MIS), R4A, document number LZY 232 105, http://www.ericsson.se/wireless/products/mobsys/mobitex/subpage/mdown/mdownmi.shtml

[RFC791] "IP: Internet Protocol", J. Postel, RFC791, September 1981, URL: http://www.ietf.org/rfc/rfc791.txt

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL: http://www.ietf.org/rfc/rfc2119.txt

[RFC2486] "The Network Access Identifier", B. Aboba, M. Beadles, January 1999, URL: http://www.ietf.org/rfc/rfc2486.txt

[RFC2373] "IP Version 6 Addressing Architecture", R. Hinden, S. Deering, July 1998, URL: http://www.ietf.org/rfc/rfc2373.txt

[TETRA] ETSI Radio Equipment and System (RES); Terrestial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI) (ETS 300 392-2)

[TIA136B] TIA/EIA-136, Rev B, TDMA Cellular PCS (ANSI/TIA/EIA-136, Rev B-2000). URL: http://www.tiaonline.org/

[TIA95B] TIA/EIA-95-B Mobile Station – Base Station Compatibility Standard for Wideband Spread Spectrum Systems (ANSI/TIA/EIA-95-B-99) , URL: http://www.tiaonline.org/

[TIAESN] "ESN Assignment Guidelines and Procedures," Engineering Committee TR-45, Telecommunications Industry Association (TIA), June 5, 1998. URL: http://www.tiaonline.org/standards/esn

[WPUSH] "Push Proxy Gateway Service Specification", WAP Forum, WAP-151-PPGService, June 2000, URL: http://www.wapforum.org/

3.2 Informative references

[WAP] "Wireless Application Protocol Architecture Specification", WAP Forum, WAP-210-WAPArch, URL: http://www.wapforum.org/

[WSP] "Wireless Session Protocol", Open Mobile Alliance™, WAP-230-WSP, http://www.openmobilealliance.org/.

[WTLS] "Wireless Transport Layer Security Specification", WAP Forum, WAP-199-WTLS, , URL: http://www.wapforum.org/

4. Definitions and Abbreviations

4.1 Definitions

The following are terms and conventions used throughout this specification.

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described by [RFC2119].

Application - A value-added data service provided to a WAP Client.

Assigned Client ID – A Client ID which is assigned by an operator of a WAP proxy according to its identifier plan.

Client – A device which initiates a request to a server for content or service. See also “device”.

Client ID – An identifier for a WAP client.

Device – A network entity that is capable of sending and/or receiving packets of information and has a unique device address or identifier. A device can act as either a client or a server, but in the context of this specification, the device is assumed as a client unless otherwise indicated.

Native Client ID – A Client ID which is constructed by utilizing the available identifiers in a device.

User - A person who interacts with a user agent to use rendered contents. Also referred to as end-user.

User agent - Any software or device that interprets contents and provides a means to interact with a user.

Trusted Domain – a set of trusted proxies, including origin servers, pull and push proxies.

4.2 Abbreviations

For the purposes of this specification, the following abbreviations apply.

ABNF	Augmented Backus-Naur Form
ESN	Electronic Serial Number
HTTP	Hypertext Transfer Protocol
IANA	Internet Assigned Numbers Authority
IPv4	Internet Protocol Address Version 4 (32 bit address)
IPv6	Internet Protocol Address Version 6 (128 bit address)
ITSI	Individual TETRA Subscriber Identity
MIN	Mobile Identification Number
MSISDN	Mobile Subscriber ISDN
MAN	Mobile Subscription Number
RFC	Request For Comments
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
WAP	Wireless Application Protocol

WDP	Wireless Datagram Protocol
WSP	Wireless Session Protocol
WINA	WAP Interim Naming Authority
WTLS	Wireless Transport Layer Security

5. Introduction

The *Client ID* provides a means to identify a WAP client. The Client ID may be assigned by the operator of a WAP proxy, or may be formed by using the identifiers available in the device according to the syntax defined in this specification. If a Client ID is assigned by an operator, it is typically provisioned into the device. If a Client ID is native, it is formed by using the available identifiers in the device such as ICCID and MIN.

The assigned Client ID is used if it is required and available in the device. This provides flexibility for an operator to administrate its own identifier name space to meet its requirements for subscriber management. However, if an operator chooses not to take the responsibility of administrate Client Ids, it may use the appropriate native Client Ids as defined for the given network.

Client ID, as defined in this specification, is not the only means for identifying a WAP client. It provides an alternative to identify a WAP client and does not exclude any other applicable alternatives for client identification.

6. Client ID Format

This section defines the format of Client ID. The Client ID based on `assigned-client-id` MUST be used if it is available in a client. One of the Client IDs based on `native-client-id` MUST be used if assigned Client ID is not available.

If an implementation does not recognise a Client ID type, that is the first octet of the Client ID, it should be treated as a sequence of opaque octets.

6.1 Syntax

The syntactical format of Client ID is defined using ABNF [ABNF] as the following.

```
client-id = assigned-client-id / native-client-id

assigned-client-id = assigned-type assigned-identifier

native-client-id = ( iccid-type iccid-identifier )
                         / ( min-type min-identifier )
                         / ( esn-type esn-identifier )
                         / ( imsi-type imsi-identifier )
                         / ( msisdn-type msisdn-identifier )
                         / ( ipv4-type ipv4-identifier )
                         / ( ipv6-type ipv6-identifier )
                         / ( itsi-type itsi-identifier )
                         / ( man-type man-identifier )

assigned-type = “0”

assigned-subtype-operator = “0”
assigned-subtype-nai = “1”
assigned-subtype-push = “2”

assigned-identifier = (assigned-subtype-operator assigned-operator-identifier)
                 /   (assigned-subtype-nai assigned-nai-identifier)
                 /   (assigned-subtype-push assigned-push-identifier)

assigned-operator-identifier = identifier-string "_" domain-name

identifier-string = 1*64 ( DIGIT / ALPHA / "+" / "-" )
;an identifier string unique to the domain as identified by domain-name.
;It can be a sequential number, a random number, an encrypted value for
;native-client-id, or any other unique identifiers.

domain-name = 1*VCHAR
;the public domain name of the operator. It conforms to the Internet domain
;name conventions and is globally unique.

assigned-nai-identifier = 1*(VCHAR except DQUOTE, including SP)
;NAI as the identifier as defined in RFC 2486 [RFC2486]

assigned-push-identifier = 1* (VCHAR except DQUOTE, including SP)
;push address as the identifier as defined in WAP Push [WPUSH]
```

```
iccid-type = “1”

iccid-identifier = 1*20DIGIT

;use ICCID as the primary native identifier for GSM network [GSM1111]

min-type = “2”

min-identifier = 1*15DIGIT

;use MIN as the primary native identifier for AMPS, PHS, and PDC network

;and alternative native identifier for IS-136 [TIA136B]

esn-type = “3”

esn-identifier = 8*12HEXDIG

;use ESN/EESN as the primary native identifier for IS-136, CDMA,
;and CDPD [TIAESN]

msisdn-type = “4”

msisdn-identifier = 1*15DIGIT

;use MSISDN as the alternative native identifier for GSM network [GSM0303]

imsi-type = “5”

imsi-identifier = 1*15DIGIT

;use IMSI as the alternative native identifier for CDMA network [TIA95B]

ipv4-type = “6”

ipv4-identifier = 3DIGIT 3(3DIGIT)

;use IPv4 address [RFC791], “0” must be prepended if less than 3 digits

;in an octet of an IPv4 address; ipv4-type is used as the primary native

;identifier for IPv4 bearers with static globally unique IPv4 address

ipv6-type = “7”

ipv6-identifier = Text Representation of Address[RFC2373]

;ipv6-type is used as the primary

;native identifier for IPv6 bearers with static IPv6 address

itsi-type = "8"

itsi-identifier = 1*15DIGIT

;use ITSI as the primary native identifier for a TETRA network[TETRA].

man-type = "9"

man-identifier = 1*8DIGIT

;use MAN as the primary native identifier for a Mobitex network [MIS].
```

6.2 Client ID Encoding

The *Common Encoding* rule defined in [ABNF] MUST be applied. According to the rule, the 7-bit US-ASCII character set is used to encode the client ID.

6.3 Client ID Examples

Use the assigned identifiers:

```
00123xdr3F_foo.com
;the gateway unique ID is “123xdr3F” and “foo.com” is the domain name
01joe_doe@foo.com
;formed by using the NAI [RFC2486]
02wappush=47397547589/type=user@carrier.com
;formed by using the WAP push address [WPUSH]
```

Use the native identifiers:

```
1165012322222                       ;ICCID is 165012322222
2165012322222                       ;MIN is 165012322222
3AA3B214C                           ;ESN is 0xAA3B214C
4165012322222                       ;MSISDN is 165012322222
5165012322222                       ;IMSI is 165012322222
6123123002040                       ;IPv4 address is 123.123.2.40
72D::1234:1111                      ;IPv6 address is 2D:0:0:0:0:0:1234:1111
```

6.4 Security and Privacy Considerations

This section is informative.

Unless the appropriate authentication mechanisms are properly used, the Client ID is not authenticated. The followings are examples for authenticating Client Id,

- Client ID is transported in the WTLS shared secret handshake and is authenticated by the shared secret [WTLS].
- Client ID is transported in the WSP proxy authentication as the user name and is authenticated by the secret password [WSP].

The implementation should examine the security impact carefully when unauthenticated Client ID is used.

Under certain circumstances, the Client ID may be considered as the private information. Exposing Client ID to an arbitrary application may violate privacy. Therefore, the implementation should examine the privacy impact carefully if Client ID is directly exposed to an application. The implementation (eg, WAP proxy and/or user agent) should have a privacy policy which controls the exposure of Client ID to an application or a WAP proxy. User control of ClientID exposure is an example. The native client IDs should only be used between the client and the trusted domains.

Appendix A. Static Conformance Requirements

This static conformance clause defines a minimum set of features that should be implemented to support WAP Client ID. A feature can be optional (O), mandatory (M) [IOPProc].

A.1 Features

Item	Functionality	Reference	Status	Requirement
ClientID-C-001	Use Common Encoding	6.2	M	
ClientID-C-002	Use assigned Client ID, if available	6	M	
ClientID-C-003	Use the native Client IDs defined for the network, if Assigned Client ID is not available	6	M	
ClientID-C-004	Assigned type	6.1	O	
ClientID-C-005	Primary native type ICCID for GSM	6.1	O	
ClientID-C-006	Primary native type ESN for IS-136, CDMA, and CDPD	6.1	O	
ClientID-C-007	Primary native type MIN for AMPS, PHS, and PDC	6.1	O	
ClientID-C-008	Primary native type IPv4 for IPv4 bearer with static IPv4 address	6.1	O	
ClientID-C-009	Primary native type IPv6 for IPv6 bearer with static IPv6 address	6.1	O	
ClientID-C-010	Primary native type ITSI for TETRA	6.1	O	
ClientID-C-011	Primary native type MAN for Mobitex	6.1	O	

Appendix B. Change History (Informative)

B.1 Approved Version History

Reference	Date	Description
Draft.	22-Jan-2001	Frozen for formal architecture consistency review
Draft	01-Mar-2001	Incorporated the CR to address the issues from the architecture consistency review and the CR to add the native identifier for Mobitex.
Draft	08-Mar-2001	Minor editorial changes on use of normative references.
Draft	20-Mar-2001	Minor editorial changes.
Draft	09-Apr-2001	Minor editorial changes.
Proposed	08-May-2001	Minor editorial changes for Proposed status
Approved	22-Jun-2001	Minor editorial changes for Approved status
Approved	09-Mar-2004	Updated to OMA template
WAP-196-ClientID-20010409-a	10-Jan-2005	Revert document numbering to WAP Forum format. Fixed ref to WSP